Control
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CONTROL SECTION 1

NEMA full voltage power devices



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Magnetic contactors

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Open/enclosed magnetic NEMA-style contactors

Product overview

NEMA sizes 00–6
600 V maximum 50/60 Hz
600 Amperes maximum
400 hp maximum



CR305A002



CR306D10200AAAAA

ABB's magnetic contactor is designed for use on today's modern equipment. Especially suitable for handling the switching of resistance heating and capacitor circuit loads, their compact size also fits the needs of the panel building industry. In addition, they may be used for controlling AC motors where overload protection is provided separately.

Features

- Easy disassembly for maintenance and inspection of contacts.
- Auxiliary contacts with vertical contact surfaces enclosed to prevent accumulation of dust and dirt.
- Attractive, modern, squared-off enclosure.
- Magnet faces specially treated to resist rust.
- Provision for ring terminals may be specified as a special feature if required.
- Each CR305 contactor is furnished with a normally open auxiliary contact for use as a holding interlock in three-wire control circuits. This auxiliary contact has the same rating as a main pole (contact) for sizes 00, 0 and 1. If this contact is not required on these sizes, specify contactor with one less pole.
- Motor full-load current should not exceed continuous ampere rating of contactor.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed magnetic NEMA-style contactors

CR305 non-reversing contactors, single-phase, 1- and 2-pole

1-pole magnetic contactors NEMA sizes 00–1

NEMA size	Continuous ampere rating[1] Enclosed	Open	Voltage @ 60 Hz	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
00	9 A	10 A	115–120	⅓	Use NEMA size 0	Use NEMA size 0	–	–	–
00	9 A	10 A	230–240	1	Use NEMA size 0	Use NEMA size 0	–	–	–
0	18 A	20 A	115–120	1	CR305J002ADA	CR305J102ADA	–	–	–
0	18 A	20 A	230–240	2	CR305J003ADA	CR305J103ADA	–	–	–
1	27 A	30 A	115–120	2	CR305K002ADA	CR305K102ADA	–	–	CR305K402ADA
1	27 A	30 A	230–240	3	CR305K003ADA	CR305K103ADA	–	–	CR305K403ADA

2-pole magnetic contactors NEMA sizes 00–6

NEMA size	Continuous ampere rating[1] Enclosed	Open	Voltage @ 60 Hz	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
00	9 A	10 A	115–120	⅓	CR305H002	CR305H102	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9 A	10 A	230–240	1	CR305H003	CR305H103	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
0	18 A	20 A	115–120	1	CR305J002	CR305J102	CR305J602	CR305J202	CR305J402
0	18 A	20 A	230–240	2	CR305J003	CR305J103	CR305J603	CR305J203	CR305J403
1	27 A	30 A	115–120	2	CR305K002	CR305K102	CR305K602	CR305K202	CR305K402
1	27 A	30 A	230–240	3	CR305K003	CR305K103	CR305K603	CR305K203	CR305K403
2	45 A	50 A	115–120	3	CR305L002	CR305L102	CR305L602	CR305L202	CR305L402
2	45 A	50 A	230–240	7½	CR305L003	CR305L103	CR305L603	CR305L203	CR305L403
3	90 A	100 A	115–120	7½	CR305M002	CR305M102	CR305M602	CR305M202	CR305M402
3	90 A	100 A	230–240	15	CR305M003	CR305M103	CR305M603	CR305M203	CR305M403
3	90 A	100 A	460–480	25	CR305M004	CR305M104	CR305M604	CR305M204	CR305M404
3	90 A	100 A	575–600	25	CR305M005	CR305M105	CR305M605	CR305M205	CR305M405
4	135 A	150 A	115–120	–	CR305N002	CR305N102	CR305N602	CR305N202	CR305N402
4	135 A	150 A	200–208	–	CR305N023	CR305N123	CR305N623	CR305N223	CR305N423
4	135 A	150 A	230–240	–	CR305N003	CR305N103	CR305N603	CR305N203	CR305N403
4	135 A	150 A	460–480	–	CR305N004	CR305N104	CR305N604	CR305N204	CR305N404
4	135 A	150 A	575–600	–	CR305N005	CR305N105	CR305N605	CR305N205	CR305N405
5	270 A	300 A	115–120	–	CR305P002	CR305P102	CR305P602	CR305P202	CR305P402
5	270 A	300 A	200–208	–	CR305P023	CR305P123	CR305P623	CR305P223	CR305P423
5	270 A	300 A	230–240	–	CR305P003	CR305P103	CR305P603	CR305P203	CR305P403
5	270 A	300 A	460–480	–	CR305P004	CR305P104	CR305P604	CR305P204	CR305P404
5	270 A	300 A	575–600	–	CR305P005	CR305P105	CR305P605	CR305P205	CR305P405
6	540 A	600 A	115–120	–	CR305HR002	CR305HR102AA2A	CR305HR602AA2A	CR305HR202AA2A	CR305HR402AA2A
6	540 A	600 A	200–208	–	CR305HR023	CR305HR123AA2A	CR305HR623AA2A	CR305HR223AA2A	CR305HR423AA2A
6	540 A	600 A	230–240	–	CR305HR003	CR305HR103AA2A	CR305HR603AA2A	CR305HR203AA2A	CR305HR403AA2A
6	540 A	600 A	460–480	–	CR305HR004	CR305HR104AA2A	CR305HR604AA2A	CR305HR204AA2A	CR305HR404AA2A
6	540 A	600 A	575–600	–	CR305HR005	CR305HR105AA2A	CR305HR605AA2A	CR305HR205AA2A	CR305HR405AA2A

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed magnetic NEMA-style contactors

CR305 non-reversing contactors, 3-phase, 3-pole

3-phase, 3-pole magnetic contactors NEMA sizes 00–6

NEMA size	Continuous ampere rating[1] Enclosed	Open	Voltage @ 60 Hz	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
00	9 A	10 A	115–120	–	CR305A002	CR305A102	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9 A	10 A	200–208	1½	CR305A023	CR305A123	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9 A	10 A	230–240	1½	CR305A003	CR305A103	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9 A	10 A	460–480	2	CR305A004	CR305A104	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9 A	10 A	575–600	2	CR305A005	CR305A105	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
0	18 A	20 A	115–120	–	CR305B002	CR305B102	CR305B602	CR305B202	CR305B402
0	18 A	20 A	200–208	3	CR305B023	CR305B123	CR305B623	CR305B223	CR305B423
0	18 A	20 A	230–240	3	CR305B003	CR305B103	CR305B603	CR305B203	CR305B403
0	18 A	20 A	460–480	5	CR305B004	CR305B104	CR305B604	CR305B204	CR305B404
0	18 A	20 A	575–600	5	CR305B005	CR305B105	CR305B605	CR305B205	CR305B405
1	27 A	30 A	115–120	–	CR305C002	CR305C102	CR305C602	CR305C202	CR305C402
1	27 A	30 A	200–208	7½	CR305C023	CR305C123	CR305C623	CR305C223	CR305C423
1	27 A	30 A	230–240	7½	CR305C003	CR305C103	CR305C603	CR305C203	CR305C403
1	27 A	30 A	460–480	10	CR305C004	CR305C104	CR305C604	CR305C204	CR305C404
1	27 A	30 A	575–600	10	CR305C005	CR305C105	CR305C605	CR305C205	CR305C405
2	45 A	50 A	115–120	–	CR305D002	CR305D102	CR305D602	CR305D202	CR305D402
2	45 A	50 A	200–208	10	CR305D023	CR305D123	CR305D623	CR305D223	CR305D423
2	45 A	50 A	230–240	15	CR305D003	CR305D103	CR305D603	CR305D203	CR305D403
2	45 A	50 A	460–480	25	CR305D004	CR305D104	CR305D604	CR305D204	CR305D404
2	45 A	50 A	575–600	25	CR305D005	CR305D105	CR305D605	CR305D205	CR305D405
3	90 A	100 A	115–120	–	CR305E002	CR305E102	CR305E602	CR305E202	CR305E402
3	90 A	100 A	200–208	25	CR305E023	CR305E123	CR305E623	CR305E223	CR305E423
3	90 A	100 A	230–240	30	CR305E003	CR305E103	CR305E603	CR305E203	CR305E403
3	90 A	100 A	460–480	50	CR305E004	CR305E104	CR305E604	CR305E204	CR305E404
3	90 A	100 A	575–600	50	CR305E005	CR305E105	CR305E605	CR305E205	CR305E405
4	135 A	150 A	115–120	–	CR305F002	CR305F102	CR305F602	CR305F202	CR305F402
4	135 A	150 A	200–208	40	CR305F023	CR305F123	CR305F623	CR305F223	CR305F423
4	135 A	150 A	230–240	50	CR305F003	CR305F103	CR305F603	CR305F203	CR305F403
4	135 A	150 A	460–480	100	CR305F004	CR305F104	CR305F604	CR305F204	CR305F404
4	135 A	150 A	575–600	100	CR305F005	CR305F105	CR305F605	CR305F205	CR305F405
5	270 A	300 A	115–120	–	CR305G002	CR305G102	CR305G602	CR305G202	CR305G402
5	270 A	300 A	200–208	75	CR305G023	CR305G123	CR305G623	CR305G223	CR305G423
5	270 A	300 A	230–240	100	CR305G003	CR305G103	CR305G603	CR305G203	CR305G403
5	270 A	300 A	460–480	200	CR305G004	CR305G104	CR305G604	CR305G204	CR305G404
5	270 A	300 A	575–600	200	CR305G005	CR305G105	CR305G605	CR305G205	CR305G405
6	540 A	600 A	115–120	–	CR305HH002	CR305HH102AA2A	CR305HH602AA2A	CR305HH202AA2A	CR305HH402AA2A
6	540 A	600 A	200–208	150	CR305HH023	CR305HH123AA2A	CR305HH623AA2A	CR305HH223AA2A	CR305HH423AA2A
6	540 A	600 A	230–240	200	CR305HH003	CR305HH103AA2A	CR305HH603AA2A	CR305HH203AA2A	CR305HH403AA2A
6	540 A	600 A	460–480	400	CR305HH004	CR305HH104AA2A	CR305HH604AA2A	CR305HH204AA2A	CR305HH404AA2A
6	540 A	600 A	575–600	400	CR305HH005	CR305HH105AA2A	CR305HH605AA2A	CR305HH205AA2A	CR305HH405AA2A

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed magnetic NEMA-style contactors

CR305 non-reversing contactors, 3-phase, 4-pole

3-phase, 4-pole magnetic contactors NEMA sizes 00–5

NEMA size	Continuous ampere rating[1] Enclosed	Open	Voltage @ 60 Hz	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
0	18 A	20 A	115–120	–	CR305R002AEA	CR305R102AEA	CR305R602AEA	CR305R202AEA	CR305R402AEA
0	18 A	20 A	200–208	3	CR305R023AEA	CR305R123AEA	CR305R623AEA	CR305R223AEA	CR305R423AEA
0	18 A	20 A	230–240	3	CR305R003AEA	CR305R103AEA	CR305R603AEA	CR305R203AEA	CR305R403AEA
0	18 A	20 A	460–480	5	CR305R004AEA	CR305R104AEA	CR305R604AEA	CR305R204AEA	CR305R404AEA
0	18 A	20 A	575–600	5	CR305R005AEA	CR305R105AEA	CR305R605AEA	CR305R205AEA	CR305R405AEA
1	27 A	30 A	115–120	–	CR305S002AEA	CR305S102AEA	CR305S602AEA	CR305S202AEA	CR305S402AEA
1	27 A	30 A	200–208	7½	CR305S023AEA	CR305S123AEA	CR305S623AEA	CR305S223AEA	CR305S423AEA
1	27 A	30 A	230–240	½	CR305S003AEA	CR305S103AEA	CR305S603AEA	CR305S203AEA	CR305S403AEA
1	27 A	30 A	460–480	10	CR305S004AEA	CR305S104AEA	CR305S604AEA	CR305S204AEA	CR305S404AEA
1	27 A	30 A	575–600	10	CR305S005AEA	CR305S105AEA	CR305S605AEA	CR305S205AEA	CR305S405AEA
2	45 A	50 A	115–120	–	CR305T002	CR305T102	CR305T602	CR305T202	CR305T402
2	45 A	50 A	200–208	10	CR305T023	CR305T123	CR305T623	CR305T223	CR305T423
2	45 A	50 A	230–240	15	CR305T003	CR305T103	CR305T603	CR305T203	CR305T403
2	45 A	50 A	460–480	25	CR305T004	CR305T104	CR305T604	CR305T204	CR305T404
2	45 A	50 A	575–600	25	CR305T005	CR305T105	CR305T605	CR305T205	CR305T405
3	90 A	100 A	115–120	–	CR305U002	CR305U102	CR305U602	CR305U202	CR305U402
3	90 A	100 A	200–208	25	CR305U023	CR305U123	CR305U623	CR305U223	CR305U423
3	90 A	100 A	230–240	30	CR305U003	CR305U103	CR305U603	CR305U203	CR305U403
3	90 A	100 A	460–480	50	CR305U004	CR305U104	CR305U604	CR305U204	CR305U404
3	90 A	100 A	575–600	50	CR305U005	CR305U105	CR305U605	CR305U205	CR305U405
4	135 A	150 A	115–120	–	CR305W002	CR305W102	CR305W602	CR305W202	CR305W402
4	135 A	150 A	200–208	40	CR305W023	CR305W123	CR305W623	CR305W223	CR305W423
4	135 A	150 A	230–240	50	CR305W003	CR305W103	CR305W603	CR305W203	CR305W403
4	135 A	150 A	460–480	100	CR305W004	CR305W104	CR305W604	CR305W204	CR305W404
4	135 A	150 A	575–600	100	CR305W005	CR305W105	CR305W605	CR305W205	CR305W405
5	270 A	300 A	115–120	–	CR305Z002	CR305Z102	CR305Z602	CR305Z202	CR305Z402
5	270 A	300 A	200–208	75	CR305Z023	CR305Z123	CR305Z623	CR305Z223	CR305Z423
5	270 A	300 A	230–240	100	CR305Z003	CR305Z103	CR305Z603	CR305Z203	CR305Z403
5	270 A	300 A	460–480	200	CR305Z004	CR305Z104	CR305Z604	CR305Z204	CR305Z404
5	270 A	300 A	575–600	200	CR305Z005	CR305Z105	CR305Z605	CR305Z205	CR305Z405

[1]Motor full-load current should not exceed continuous ampere rating of contactor.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Auxiliary contacts

NEMA sizes 0–6



CR305X100A

Auxiliary contacts can add to the versatility of magnetic contactors by providing additional control circuits to do a variety of jobs without adding to the width of the contactor.

Kits make it easy to add contacts to control accessory equipment such as indicating lights. Auxiliary contacts can be added to all across-the-line magnetic contactors. Each auxiliary contact is rated 10 amperes AC, resistive load, NEMA “A600,” and is suitable for either right or left side mounting. An insulating shield is also provided between each auxiliary contact unit and the contactor.

Auxiliary contacts are furnished in the basic block design or as an adder block. Each contact is marked NO or NC on the block and is not convertible. Logic reed contacts suitable for low energy level circuits are also available. These are designed for applications on low-voltage control circuits (24 volts and below), such as inputs to computers and programmable starters.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Auxiliary contacts

For CR305 contactors

Auxiliary contact kits

NEMA size	Contact configuration	Block design	Ordering code
0, 1	1 NO	Basic	CR305X100A
0, 1	1 NC	Basic	CR305X100B
0, 1	1 NO–1 NC	Basic	CR305X100C
2	1 NO	Basic	CR305X200A
2	1 NC	Basic	CR305X200B
2	1 NO–1 NC	Basic	CR305X200C
3, 4	1 NO	Basic	CR305X300A
3, 4	1 NC	Basic	CR305X300B
3, 4	1 NO–1 NC	Basic	CR305X300C
5, 6	1 NO	Basic	CR305X500A
5, 6	1 NC	Basic	CR305X500B
5, 6	1 NO–1 NC	Basic	CR305X500C

Auxiliary contact kits — adder blocks

NEMA size	Contact configuration	Block design	Ordering code
0–6	1 NO	Adder	CR305X100D[1]
0–6	1 NC	Adder	CR305X100E[1]

Logic reed switch auxiliary contacts

NEMA size	Contact configuration	Ordering code
00, 0, 1	1 NO-0 NC	CR305X100RA
00, 0, 1	0 NO-1 NC	CR305X100RB
00, 0, 1	1 NO–1 NC	CR305X100RC
2	1 NO-0 NC	CR305X200RA
2	0 NO-1 NC	CR305X200RB
2	1 NO–1 NC	CR305X200RC
3, 4	1 NO-0 NC	CR305X300RA
3, 4	0 NO-1 NC	CR305X300RB
3, 4	1 NO–1 NC	CR305X300RC
5, 6	1 NO-0 NC	CR305X500RA
5, 6	0 NO-1 NC	CR305X500RB
5, 6	1 NO–1 NC	CR305X500RC

[1]First adder block must be mounted to a basic block. A second adder block can be added to the first adder block on size 2 through size 9 starters.
Four extra auxiliary contacts (not blocks) is the maximum that can be added to either a NEMA size 0 or 1 starter while five is the maximum extra auxiliary contacts that can be added to NEMA size 2 through 6 devices.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Pilot device and fifth pole

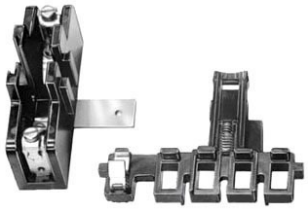
NEMA sizes 00–6



CR305X120N



CR305X130N



CR305X211B

Pilot device modification kits

Kit type	NEMA size	Ordering code
Momentary contact start-stop push button kit	00, 0, 1	CR305X120N
Momentary contact start-stop push button kit	2	CR305X220N
Momentary contact start-stop push button kit	3, 4	CR305X320B
Momentary contact start-stop push button kit	5	CR305X520B
Hand-off-auto selector switch kit	00, 0, 1	CR305X130N
Hand-off-auto selector switch kit	2	CR305X230N
Hand-off-auto selector switch kit	3, 4	CR305X330B
Hand-off-auto selector switch kit	5	CR305X530B
Off-on selector switch kit	00, 0, 1	CR305X130P
Off-on selector switch kit	2	CR305X230D
Off-on selector switch kit	3, 4	CR305X330D
Off-on selector switch kit	5	CR305X530D

Fifth-pole kits

NEMA size	Mounting position	Ordering code
0, 1	Right	CR305X111B
2 (add to 4-pole form)	Left	CR305X211B

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Surge suppression and control circuit fuses

NEMA sizes 00–6



CR305X146C

Surge suppression kit

NEMA size	Ordering code
0–6	CR305X146C

Control circuit fuse kits

NEMA size	No. of fuses	Fuse type	Ordering code
00–1	1	KTK	CR305X141A
00–1	2	KTK	CR305X141B
2	1	KTK	CR305X241A
2	2	KTK	CR305X241B
3, 4	1	KTK	CR305X341A
3, 4	2	KTK	CR305X341B
5, 6	1	KTK	CR305X541A
5, 6	2	KTK	CR305X541B
00–1	1	KTK-R	CR305X141C
00–1	2	KTK-R	CR305X141D
2	1	KTK-R	CR305X241C
2	2	KTK-R	CR305X241D
3, 4	1	KTK-R	CR305X341C
3, 4	2	KTK-R	CR305X341D
5, 6	1	KTK-R	CR305X541C
5, 6	2	KTK-R	CR305X541D

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Control amplifier

NEMA sizes 00–6

Control amplifier

Operation type	NEMA size	Ordering code
Non-reversing	00, 0, and 1	CR305X112A
Non-reversing	2	CR305X212A
Non-reversing	3 and 4	CR305X312A
Non-reversing	00, 0, 1, 2, 3, and 4	CR305X112P[1]

[1]A quantity of two panel-mount CR305X112P is required for use with reversing contactors and starters.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed contactor modification kits

Space heaters and mechanical interlocks

NEMA sizes 00–6



7GSP009115R0006

Space heater kits

NEMA size	Operating voltage	Ordering code
0–1	115	CR305X701D[1]
0–1	230	CR305X701A
0–1	460	CR305X701B
0–1	600	CR305X701C
2, 3, 4	115	CR305X702D
2, 3, 4	230	CR305X702A
2, 3, 4	460	CR305X702B
2, 3, 4	600	CR305X702C
5, 6	115	CR305X705D[1]
5, 6	230	CR305X705A
5, 6	460	CR305X705B
5, 6	600	CR305X705C

Mechanical interlock kits

NEMA size	Mounting position	Baseplate	Ordering code
0–1	Horizontal	No	CR309X100B
2	Horizontal	No	CR309X200D
3–4	Horizontal	No	CR309X300B
5	Horizontal	Yes	CR309X501K
0–1	Vertical	Yes	CR309X102B[2]
2	Vertical	Yes	CR309X202B[2]
3–4	Vertical	Yes	CR309X302B[2]

[1]If connected to control circuit transformer, 115-volt heater requires an extra-capacity transformer. Contact nearest ABB representative for additional information.
[2]For contactors top and bottom or contactor on top.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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NEMA starters with NEMA-style components

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300-line starters

Product overview

1600 horsepower maximum
NEMA sizes 00–6
600 volts maximum
50/60 Hz



CR306C002

Features

ABB's full voltage (600-volt maximum) magnetic motor starter has an encapsulated coil and a 3-leg overload relay to protect against overloads in all phases. It is on standard specifications of major manufacturers. The line offers features and benefits most asked for by users.

Forms available include reversing and non-reversing, two-speed and combination, sizes 00–6.

- Toolless contactor disassembly (sizes 00–4) — allows quick access for inspection and maintenance. Just release two retainers and pull a clip to get at magnet, coil and contacts.
- Saddle clamp terminals (sizes 00–1) — accommodate ring, spade and stripped wire leads and carry permanent stamped-in identification. Staggered arrangement makes wiring easier and helps prevent shorting between phases.
- Current-carrying components — contact tips are weld-resistant silver cadmium oxide (fine silver on sizes 00 and 0 only). Contacts are installed in a wedge configuration for positive make with minimum bounce.
- Optional PF capacitor terminals — permit easy connection of power factor correction capacitors between contactor and overload relay for energy conservation.
- Class 20 overload protection.
- Visual trip indicator with manual reset — to avoid surprise restarts. Reset occurs on arm upstroke so a tripped condition can't be overridden by holding the arm down.
- Manual weld check — provides a convenient test against welding of overload relay contacts. Just depress the weld check operator to trip the relay, run a simple continuity test across the relay contacts, then depress the manual reset to return the starter to service.
- Optional isolated NO contact on the overload relay — provides means of direct interface with programmable controller or computer to monitor performance and diagnose faults.
- Dual bimetals — anticipate overloads, responding to rising current and temperature with faster tripping on severe overloads for better motor protection. Trip points are factory-calibrated for accuracy.
- ±10% trip adjustment — turning a dial in the overload relay face allows "tuning" the protection to the motor on the spot.
- Largest selection of modifications and accessory kits — includes auxiliary contacts, coils, fifth-pole addition, vertical and horizontal mechanical interlocks, surge suppressors, control circuit fusing, NEMA type enclosures, pushbuttons, selector switches, indicating lights, control transformers, space heaters and more.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with thermal overload relay

NEMA sizes 00–6 with thermal overload relay 600 volts maximum 50/60 Hz



CR306B002

ABB's magnetic motor starters listed here may be used for starting full-voltage, non-reversing, single-speed AC motors up to 400 horsepower, 600 volts maximum, providing protection to the motor against running or stalled overloads.

Their compact size and ease of wiring make them especially suitable for motor control centers, custom-type control panels and switchgear equipment.

Single-phase standard features
Includes a holding interlock. One heater (per starter) for sizes 00–2 and two heaters (per starter) for size 3 should be ordered as separate items. See heaters section.

Three-phase standard features
Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. To order, add suffix LAA to ordering codes (size 00–5) listed in table. Three heaters should be ordered as separate items.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with thermal overload relay

Single-phase magnetic starters

NEMA size	Continuous ampere rating[1]	Voltage	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
00	9	115–120	1/3	CR306H002	CR306H102	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9	230–240	1	CR306H003	CR306H103	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
0	18	115–120	1	CR306J002	CR306J102	CR306J602	CR306J202	CR306J402
0	18	230–240	2	CR306J003	CR306J103	CR306J603	CR306J203	CR306J403
1	27	115–120	2	CR306K002	CR306K102	CR306K602	CR306K202	CR306K402
1	27	230–240	3	CR306K003	CR306K103	CR306K603	CR306K203	CR306K403
1P	36	115–120	3	CR306K002BMA	CR306K102BKA	CR306K602BKA	CR306K202BKA	CR306K402BKA
1P	36	230–240	5	CR306K003BMA	CR306K103BKA	CR306K603BKA	CR306K203BKA	CR306K403BKA
2	45	115–120	3	CR306L002	CR306L102	CR306L602	CR306L202	CR306L402
2	45	230–240	7½	CR306L003	CR306L103	CR306L603	CR306L203	CR306L403
3	90	115–120	7½	CR306M002	CR306M102	CR306M602	CR306M202	CR306M402
3	90	230–240	15	CR306M003	CR306M103	CR306M603	CR306M203	CR306M403
3	90	460–480	25	CR306M004	CR306M104	CR306M604	CR306M204	CR306M404
3	90	575–600	25	CR306M005	CR306M105	CR306M605	CR306M205	CR306M405

[1]Motor full load current should not exceed continuous ampere rating of the starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with thermal overload relay

Three-phase magnetic starters

NEMA size	Continuous ampere rating[1]	Voltage	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
00	9	Separate control—115–120 V		CR306A002	CR306A102	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9	200–208	1½	CR306A023	CR306A123	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9	230–240	1½	CR306A003	CR306A103	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9	460–480	2	CR306A004	CR306A104	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
00	9	575–600	2	CR306A005	CR306A105	Use NEMA size 0	Use NEMA size 0	Use NEMA size 0
0	18	Separate control—115–120 V		CR306B002	CR306B102	CR306B602	CR306B202	CR306B402
0	18	200–208	3	CR306B023	CR306B123	CR306B623	CR306B223	CR306B423
0	18	230–240	3	CR306B003	CR306B103	CR306B603	CR306B203	CR306B403
0	18	460–480	5	CR306B004	CR306B104	CR306B604	CR306B204	CR306B404
0	18	575–600	5	CR306B005	CR306B105	CR306B605	CR306B205	CR306B405
1	27	Separate control—115–120 V		CR306C002	CR306C102	CR306C602	CR306C202	CR306C402
1	27	200–208	7½	CR306C023	CR306C123	CR306C623	CR306C223	CR306C423
1	27	230–240	7½	CR306C003	CR306C103[2]	CR306C603	CR306C203	CR306C403
1	27	460–480	10	CR306C004	CR306C104	CR306C604	CR306C204	CR306C404
1	27	575–600	10	CR306C005	CR306C105	CR306C605	CR306C205	CR306C405
2	45	Separate control—115–120 V		CR306D002	CR306D102	CR306D602	CR306D202	CR306D402
2	45	200–208	10	CR306D023	CR306D123	CR306D623	CR306D223	CR306D423
2	45	230–240	15	CR306D003	CR306D103	CR306D603	CR306D203	CR306D403
2	45	460–480	25	CR306D004	CR306D104	CR306D604	CR306D204	CR306D404
2	45	575–600	25	CR306D005	CR306D105	CR306D605	CR306D205	CR306D405
3	90	Separate control—115–120 V		CR306E002	CR306E102	CR306E602	CR306E202	CR306E402
3	90	200–208	25	CR306E023	CR306E123	CR306E623	CR306E223	CR306E423
3	90	230–240	30	CR306E003	CR306E103	CR306E603	CR306E203	CR306E403
3	90	460–480	50	CR306E004	CR306E104	CR306E604	CR306E204	CR306E404
3	90	575–600	50	CR306E005	CR306E105	CR306E605	CR306E205	CR306E405
4	135	Separate control—115–120 V		CR306F002	CR306F102	CR306F602	CR306F202	CR306F402
4	135	200–208	40	CR306F023	CR306F123	CR306F623	CR306F223	CR306F423
4	135	230–240	50	CR306F003	CR306F103	CR306F603	CR306F203	CR306F403
4	135	460–480	100	CR306F004	CR306F104	CR306F604	CR306F204	CR306F404
4	135	575–600	100	CR306F005	CR306F105	CR306F605	CR306F205	CR306F405
5	270	Separate control—115–120 V		CR306G002	CR306G102	CR306G602	CR306G202	CR306G402
5	270	200–208	75	CR306G023	CR306G123	CR306G623	CR306G223	CR306G423
5	270	230–240	100	CR306G003	CR306G103	CR306G603	CR306G203	CR306G403
5	270	460–480	200	CR306G004	CR306G104	CR306G604	CR306G204	CR306G404
5	270	575–600	200	CR306G005	CR306G105	CR306G605	CR306G205	CR306G405
6	540	Separate control—115–120 V		CR306HH002	CR306HH102	CR306HH602	CR306HH202	CR306HH402
6	540	200–208	150	CR306HH023	CR306HH123	CR306HH623	CR306HH223	CR306HH423
6	540	230–240	200	CR306HH003	CR306HH103	CR306HH603	CR306HH203	CR306HH403
6	540	460–480	400	CR306HH004	CR306HH104	CR306HH604	CR306HH204	CR306HH404
6	540	575–600	400	CR306HH005	CR306HH105	CR306HH605	CR306HH205	CR306HH405

[1]Motor full load current should not exceed continuous ampere rating of the starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with solid-state overload relay

NEMA sizes 1–6 with solid state overload relay
600 volts maximum
50/60 Hz



CR306CXE002

Ordering code selection instructions

1. 50 Hz starters
   50 Hz forms (at standard voltages) are the same as shown in table for 60 Hz.
   Refer to technical data for 380–415 volt horsepower ratings.
2. Product notes
   Motor full-load current should not exceed continuous ampere rating of starter.
3. Note: Reversing, two-speed and combination starters are also available with solid-state overload relays.
4. Units are individually boxed and poly-packed six per carton as standard.
5. External reset not included on standard listed forms
   (NEMA Type 12).
6. For additional details on the solid-state overload relay, refer to the overload relays section.

Features

- 2:1 adjustable full load amps with tactile feedback dial
- Selectable 10/20/30 protection class
- Ambient insensitive within the stated operating temperature range of -20 °C to +70 °C
- Built-in thermal memory to prevent hot motor restarts
- Protection against complete phase current loss
- Manual reset (standard) and remote reset (optional)
  120 V AC
- Accuracy: ± 2%
- Repeatability: ± 2%
- Self-powered at 50% of minimum current range
- Size: 1–6 (0.40–540 A, 600 V, 50/60 Hz)
- Unbalance trip signal for PLC operation
- Manual trip
- Visual trip indication
- Standard isolated 1 NO and 1 NC auxiliary contact
  (A600, Q600)
- Built-in line/load straps
- Fits with existing 300-line starters
- Power factor correction terminals (sizes 1–4)
- DIN rail mountable sizes 1 and 2

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with solid-state overload relay

Includes a holding interlock, pressure terminals for the line and load connections, plus a solid-state overload relay (manual reset). Standard isolated 1 NO and 1 NC auxiliary contact (A600, Q600). Select current range from full load current selection table. Insert letter (C, D, E, F, etc.) from table on the next page, in ordering code to replace *.

Refer to empower configurator for other available starter coils and suffixes.

For NEMA size 0 and 00 applications, NEMA size 1 relay can be adjusted down to the proper amperage rating to fill 0–00 applications.

Three-phase magnetic starters

				Open type	NEMA type 1	NEMA type 3R	NEMA type 12[2]	NEMA type 4/4X
NEMA size	Continuous ampere rating[1]	Voltage	hp	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code
1	27	Separate control — 115–120 V		CR306CX*002	CR306CX*102	CR306CX*602	CR306CX*202[1]	CR306CX*402
1	27	200–208	7½	CR306CX*023	CR306CX*123	CR306CX*623	CR306CX*223[1]	CR306CX*423
1	27	230–240	7½	CR306CX*003	CR306CX*103[2]	CR306CX*603	CR306CX*203[1]	CR306CX*403
1	27	460–480	10	CR306CX*004	CR306CX*104	CR306CX*604	CR306CX*204[1]	CR306CX*404
1	27	575–600	10	CR306CX*005	CR306CX*105	CR306CX*605	CR306CX*205[1]	CR306CX*405
2	45	Separate control — 115–120 V		CR306DX*002	CR306DX*102	CR306DX*602	CR306DX*202[1]	CR306DX*402
2	45	200–208	10	CR306DX*023	CR306DX*123	CR306DX*623	CR306DX*223[1]	CR306DX*423
2	45	230–240	15	CR306DX*003	CR306DX*103	CR306DX*603	CR306DX*203[1]	CR306DX*403
2	45	460–480	25	CR306DX*004	CR306DX*104	CR306DX*604	CR306DX*204[1]	CR306DX*404
2	45	575–600	25	CR306DX*005	CR306DX*105	CR306DX*605	CR306DX*205[1]	CR306DX*405
3	90	Separate control — 115–120 V		CR306EX*002	CR306EX*102	CR306EX*602	CR306EX*202[1]	CR306EX*402
3	90	200–208	25	CR306EX*023	CR306EX*123	CR306EX*623	CR306EX*223[1]	CR306EX*423
3	90	230–240	30	CR306EX*003	CR306EX*103	CR306EX*603	CR306EX*203[1]	CR306EX*403
3	90	460–480	50	CR306EX*004	CR306EX*104	CR306EX*604	CR306EX*204[1]	CR306EX*404
3	90	575–600	50	CR306EX*005	CR306EX*105	CR306EX*605	CR306EX*205[1]	CR306EX*405
4	135	Separate control — 115–120 V		CR306FX*002	CR306FX*102	CR306FX*602	CR306FX*202[1]	CR306FX*402
4	135	200–208	40	CR306FX*023	CR306FX*123	CR306FX*623	CR306FX*223[1]	CR306FX*423
4	135	230–240	50	CR306FX*003	CR306FX*103	CR306FX*603	CR306FX*203[1]	CR306FX*403
4	135	460–480	100	CR306FX*004	CR306FX*104	CR306FX*604	CR306FX*204[1]	CR306FX*404
4	135	575–600	100	CR306FX*005	CR306FX*105	CR306FX*605	CR306FX*205[1]	CR306FX*405
5	270	Separate control — 115–120 V		CR306GX*002	CR306GX*102	CR306GX*602	CR306GX*202[1]	CR306GX*402
5	270	200–208	75	CR306GX*023	CR306GX*123	CR306GX*623	CR306GX*223[1]	CR306GX*423
5	270	230–240	100	CR306GX*003	CR306GX*103	CR306GX*603	CR306GX*203[1]	CR306GX*403
5	270	460–480	200	CR306GX*004	CR306GX*104	CR306GX*604	CR306GX*204[1]	CR306GX*404
5	270	575–600	200	CR306GX*005	CR306GX*105	CR306GX*605	CR306GX*205[1]	CR306GX*405
6	540	Separate control — 115–120 V		CR306HX*002	CR306HX*102	CR306HX*602	CR306HX*202[1]	CR306HX*402
6	540	200–208	150	CR306HX*023	CR306HX*123	CR306HX*623	CR306HX*223[1]	CR306HX*423
6	540	230–240	200	CR306HX*003	CR306HX*103	CR306HX*603	CR306HX*203[1]	CR306HX*403
6	540	460–480	400	CR306HX*004	CR306HX*104	CR306HX*604	CR306HX*204[1]	CR306HX*404
6	540	575–600	400	CR306HX*005	CR306HX*105	CR306HX*605	CR306HX*205[1]	CR306HX*405

[1]Motor full load current should not exceed continuous ampere rating of the starter.
[2]External reset not included on standard listed forms.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR306 non-reversing with solid-state overload relay

Full load current selection table

For continuous rated motors, with a service factor of 1.15 to 1.25, select the heater with maximum motor amperes equal to or immediately greater than the motor full-load current (provides a maximum of 125% protection). For continuous rated motors with no service factor, multiply the full-load current of the motor by 0.90 and use this value to select the heater.

Overload range for solid-state starters	NEMA size	Fuse max.	Breaker max.	Insert digit in ordering code
0.4–0.85	00–1	3	15	C
0.8–1.7	00–1	6	15	D
1.6–3.4	00–1	12	15	E
3.2–6.8	00–1	25	25	F
6.5–13.5	00–1	50	50	G
13–27	00–1	100	100	H
6.5–13.5	2	50	50	G
13–27	2	100	100	H
25–50	2	200	200	J
17–35	3 and 4	125	125	K
35–70	3 and 4	250	250	L
65–135	3 and 4	500	400	M
35–70	5	–	–	N
65–135	5	500	400	P
130–270	5	600	800	Q
130–270	6	1200	800	S
260–540	6	1200	800	T

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR309 reversing with thermal overload relay

NEMA sizes 00–7 with thermal overload relay
600 volts maximum 50/60 Hz

For four-wire split phase or capacitor start induction motor (60 Hz) overload protection. One heater should be ordered as a separate item.

Single-phase magnetic reversing starters

NEMA size	Continuous ampere rating[1]	Voltage	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 12[2] Ordering code	NEMA type 4/4X[2] Ordering code
00	9	115–120	⅓	CR309A002AFA	CR309A102AFA	–	–
00	9	230–240	1	CR309A003AFA	CR309A103AFA	–	–
0	18	115–120	1	CR309B002BBA	CR309B102DAA	CR309B202DAA	CR309B402CCA
0	18	230–240	2	CR309B003BBA	CR309B103DAA	CR309B203DAA	CR309B403CCA
1	27	115–120	2	CR309C002FSA	CR309C102DAA	CR309C202ALA	CR309C402BXA
1	27	230–240	3	CR309C003FSA	CR309C103DAA	CR309C203ALA	CR309C403BXA

[1]Motor full load current should not exceed continuous ampere rating of the starter.
[2]External reset not included on standard listed forms.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Open/enclosed non-combination magnetic starters

CR309 reversing with thermal overload relay

NEMA sizes 00–7 with thermal overload relay
600 volts maximum 50/60 Hz

Includes a holding interlock, mechanical and cross-electrical interlock on each contactor, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset). One NO isolated contact on the overload relay is available. To order, add suffix LAA to ordering codes listed in table for enclosed types and open forms.

Three-phase magnetic reversing starters

NEMA size	Continuous ampere rating[1]	Voltage (60 Hz)	hp	Open type w/ vertical mechanical interlock Ordering code	Open type w/ horizontal mechanical interlock Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12[2] Ordering code	NEMA type 4/4X Ordering code
00	9	Separate control — 115–120 V		–	CR309A002	CR309A102	–	–	–
00	9	200–208	1½	–	CR309A023	CR309A123	–	–	–
00	9	230–240	1½	–	CR309A003	CR309A103	–	–	–
00	9	460–480	2	–	CR309A004	CR309A104	–	–	–
00	9	575–600	2	–	CR309A005	CR309A105	–	–	–
0	18	Separate control — 115–120 V		CR309B002CAA	CR309B002	CR309B102	CR309B602	CR309B202	CR309B402
0	18	200–208	3	CR309B023CAA	CR309B023	CR309B123	CR309B623	CR309B223	CR309B423
0	18	230–240	3	CR309B003CAA	CR309B003	CR309B103	CR309B603	CR309B203	CR309B403
0	18	460–480	5	CR309B004CAA	CR309B004	CR309B104	CR309B604	CR309B204	CR309B404
0	18	575–600	5	CR309B005CAA	CR309B005	CR309B105	CR309B605	CR309B205	CR309B405
1	27	Separate control — 115–120 V		CR309C002CAA	CR309C002	CR309C102	CR309C602	CR309C202	CR309C402
1	27	200–208	7½	CR309C023CAA	CR309C023	CR309C123	CR309C623	CR309C223	CR309C423
1	27	230–240	7½	CR309C003CAA	CR309C003	CR309C103	CR309C603	CR309C203	CR309C403
1	27	460–480	10	CR309C004CAA	CR309C004	CR309C104	CR309C604	CR309C204	CR309C404
1	27	575–600	10	CR309C005CAA	CR309C005	CR309C105	CR309C605	CR309C205	CR309C405
2	45	Separate control — 115–120 V		CR309D002AMA	CR309D002	CR309D102	CR309D602	CR309D202	CR309D402
2	45	200–208	10	CR309D023AMA	CR309D023	CR309D123	CR309D623	CR309D223	CR309D423
2	45	230–240	15	CR309D003AMA	CR309D003	CR309D103	CR309D603	CR309D203	CR309D403
2	45	460–480	25	CR309D004AMA	CR309D004	CR309D104	CR309D604	CR309D204	CR309D404
2	45	575–600	25	CR309D005AMA	CR309D005	CR309D105	CR309D605	CR309D205	CR309D405
3	90	Separate control — 115–120 V		CR309E002AMA	CR309E002	CR309E102	CR309E602	CR309E202	CR309E402
3	90	200–208	25	CR309E023AMA	CR309E023	CR309E123	CR309E623	CR309E223	CR309E423
3	90	230–240	30	CR309E003AMA	CR309E003	CR309E103	CR309E603	CR309E203	CR309E403
3	90	460–480	50	CR309E004AMA	CR309E004	CR309E104	CR309E604	CR309E204	CR309E404
3	90	575–600	50	CR309E005AMA	CR309E005	CR309E105	CR309E605	CR309E205	CR309E405
4	135	Separate control — 115–120 V		CR309F002AMA	CR309F002	CR309F102	CR309F602	CR309F202	CR309F402
4	135	200–208	40	CR309F023AMA	CR309F023	CR309F123	CR309F623	CR309F223	CR309F423
4	135	230–240	50	CR309F003AMA	CR309F003	CR309F103	CR309F603	CR309F203	CR309F403
4	135	460–480	100	CR309F004AMA	CR309F004	CR309F104	CR309F604	CR309F204	CR309F404
4	135	575–600	100	CR309F005AMA	CR309F005	CR309F105	CR309F605	CR309F205	CR309F405
5	270	Separate control — 115–120 V		CR309G002AMA	CR309G002	CR309G102	CR309G602	CR309G202	CR309G402
5	270	200–208	75	CR309G023AMA	CR309G023	CR309G123	CR309G623	CR309G223	CR309G423
5	270	230–240	100	CR309G003AMA	CR309G003	CR309G103	CR309G603	CR309G203	CR309G403
5	270	460–480	200	CR309G004AMA	CR309G004	CR309G104	CR309G604	CR309G204	CR309G404
5	270	575–600	200	CR309G005AMA	CR309G005	CR309G105	CR309G605	CR309G205	CR309G405

[1]Motor full load current should not exceed continuous ampere rating of the starter.
[2]External reset not included on standard listed forms.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Open/enclosed non-combination magnetic starters

CR309 2-speed starters

200 horsepower maximum
NEMA Sizes 0–5,
600 volts maximum
50/60 Hz



CR309C002BAA

Used for full-voltage operation of two-speed squirrel-cage induction motors at either speed. Consists of two mechanical and cross-electrical interlocked contactors with two three-leg block type overload relays, one on each contactor. These bimetallic relays provide overload protection for each speed. 3-3 pole starters are for two-speed, two winding motors; 5-3 pole starters are for two-speed, one-winding consequent pole motors.

Proper motor-speed selection is obtained by adding pilot devices to correspond to each of the motor speeds.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Open/enclosed non-combination magnetic starters

CR309 2-speed starters

Two-speed, two-winding, 3-3 pole
Non-combination, open, NEMA type 1, 3R, 12, 4/4X
NEMA sizes 0–5 with thermal overload relay
600 volts maximum 50/60 hertz

Three-phase
Includes a holding interlock, mechanical and cross-electrical interlock, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset) for each speed. All enclosures include external reset. One NO isolated contact on each overload relay is available as an option. To order, change suffix AKA to LKA for ordering codes listed in table. Six heaters should be ordered as separate items. The ordering codes listed are starters suitable for wye or closed delta connected motor windings.

Three-phase two-winding magnetic starters

NEMA size	Continuous ampere rating[1]	Voltage (60 Hz)	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
0	18	Separate control—115-120 V		CR309B002AKA	CR309B102AKA	CR309B602AKA	CR309B202AKA	CR309B402AKA
0	18	200-208	3	CR309B023AKA	CR309B123AKA	CR309B623AKA	CR309B223AKA	CR309B423AKA
0	18	230-240	3	CR309B003AKA	CR309B103AKA	CR309B603AKA	CR309B203AKA	CR309B403AKA
0	18	460-480	5	CR309B004AKA	CR309B104AKA	CR309B604AKA	CR309B204AKA	CR309B404AKA
0	18	575-600	5	CR309B005AKA	CR309B105AKA	CR309B605AKA	CR309B205AKA	CR309B405AKA
1	27	Separate control—115-120 V		CR309C002AKA	CR309C102AKA	CR309C602AKA	CR309C202AKA	CR309C402AKA
1	27	200-208	7½	CR309C023AKA	CR309C123AKA	CR309C623AKA	CR309C223AKA	CR309C423AKA
1	27	230-240	7½	CR309C003AKA	CR309C103AKA	CR309C603AKA	CR309C203AKA	CR309C403AKA
1	27	460-480	10	CR309C004AKA	CR309C104AKA	CR309C604AKA	CR309C204AKA	CR309C404AKA
1	27	575-600	10	CR309C005AKA	CR309C105AKA	CR309C605AKA	CR309C205AKA	CR309C405AKA
2	45	Separate control—115-120 V		CR309D002AKA	CR309D102AKA	CR309D602AKA	CR309D202AKA	CR309D402AKA
2	45	200-208	10	CR309D023AKA	CR309D123AKA	CR309D623AKA	CR309D223AKA	CR309D423AKA
2	45	230-240	15	CR309D003AKA	CR309D103AKA	CR309D603AKA	CR309D203AKA	CR309D403AKA
2	45	460-480	25	CR309D004AKA	CR309D104AKA	CR309D604AKA	CR309D204AKA	CR309D404AKA
2	45	575-600	25	CR309D005AKA	CR309D105AKA	CR309D605AKA	CR309D205AKA	CR309D405AKA
3	90	Separate control—115-120 V		CR309E002AKA	CR309E102AKA	CR309E602AKA	CR309E202AKA	CR309E402AKA
3	90	200-208	25	CR309E023AKA	CR309E123AKA	CR309E623AKA	CR309E223AKA	CR309E423AKA
3	90	230-240	30	CR309E003AKA	CR309E103AKA	CR309E603AKA	CR309E203AKA	CR309E403AKA
3	90	460-480	50	CR309E004AKA	CR309E104AKA	CR309E604AKA	CR309E204AKA	CR309E404AKA
3	90	575-600	50	CR309E005AKA	CR309E105AKA	CR309E605AKA	CR309E205AKA	CR309E405AKA
4	135	Separate control—115-120 V		CR309F002AKA	CR309F102AKA	CR309F602AKA	CR309F202AKA	CR309F402AKA
4	135	200-208	40	CR309F023AKA	CR309F123AKA	CR309F623AKA	CR309F223AKA	CR309F423AKA
4	135	230-240	50	CR309F003AKA	CR309F103AKA	CR309F603AKA	CR309F203AKA	CR309F403AKA
4	135	460-480	100	CR309F004AKA	CR309F104AKA	CR309F604AKA	CR309F204AKA	CR309F404AKA
4	135	575-600	100	CR309F005AKA	CR309F105AKA	CR309F605AKA	CR309F205AKA	CR309F405AKA
5	270	Separate control—115-120 V		CR309G002AKA	CR309G102AKA	CR309G602AKA	CR309G202AKA	CR309G402AKA
5	270	200-208	75	CR309G023AKA	CR309G123AKA	CR309G623AKA	CR309G223AKA	CR309G423AKA
5	270	230-240	100	CR309G003AKA	CR309G103AKA	CR309G603AKA	CR309G203AKA	CR309G403AKA
5	270	460-480	200	CR309G004AKA	CR309G104AKA	CR309G604AKA	CR309G204AKA	CR309G404AKA
5	270	575-600	200	CR309G005AKA	CR309G105AKA	CR309G605AKA	CR309G205AKA	CR309G405AKA

[1]Motor full load current should not exceed continuous ampere rating of the starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Open/enclosed non-combination magnetic starters

CR309 2-speed starters

Two-speed, one-winding (consequent pole), 5-3 pole
Non-combination, open, NEMA type 1, 3R, 12, 4/4X
NEMA sizes 0–5 with thermal overload relay
600 volts maximum 50/60 hertz

Three-phase
Includes a holding interlock, mechanical and cross-electrical interlock, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset) for each speed. All enclosures include external reset. One NO isolated contact on each overload relay is available as an option. To order, change suffix AKA to LKA for ordering codes listed in table. Six heaters should be ordered as separate items. Starters are wired for constant or variable torque motor application. Reconnection of control wiring may be required for constant horsepower application. Motor full-load current should not exceed continuous ampere rating of starter.

Three-phase one-winding magnetic starters

NEMA size	Continuous ampere rating[1]	Voltage (60 Hz)	hp	Open type Ordering code	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
0	18	Separate control—115-120 V		CR309R002AEA	CR309R102AEA	CR309R602AEA	CR309R202AEA	CR309R402AEA
0	18	200-208	3	CR309R023AEA	CR309R123AEA	CR309R623AEA	CR309R223AEA	CR309R423AEA
0	18	230-240	3	CR309R003AEA	CR309R103AEA	CR309R603AEA	CR309R203AEA	CR309R403AEA
0	18	460-480	5	CR309R004AEA	CR309R104AEA	CR309R604AEA	CR309R204AEA	CR309R404AEA
0	18	575-600	5	CR309R005AEA	CR309R105AEA	CR309R605AEA	CR309R205AEA	CR309R405AEA
1	27	Separate control—115-120 V		CR309S002AEA	CR309S102AEA	CR309S602AEA	CR309S202AEA	CR309S402AEA
1	27	200-208		CR309S023AEA	CR309S123AEA	CR309S623AEA	CR309S223AEA	CR309S423AEA
1	27	230-240	7½	CR309S003AEA	CR309S103AEA	CR309S603AEA	CR309S203AEA	CR309S403AEA
1	27	460-480	10	CR309S004AEA	CR309S104AEA	CR309S604AEA	CR309S204AEA	CR309S404AEA
1	27	575-600	10	CR309S005AEA	CR309S105AEA	CR309S605AEA	CR309S205AEA	CR309S405AEA
2	45	Separate control—115-120 V		CR309T002AEA	CR309T102AEA	CR309T602AEA	CR309T202AEA	CR309T402AEA
2	45	200-208	10	CR309T023AEA	CR309T123AEA	CR309T623AEA	CR309T223AEA	CR309T423AEA
2	45	230-240	15	CR309T003AEA	CR309T103AEA	CR309T603AEA	CR309T203AEA	CR309T403AEA
2	45	460-480	25	CR309T004AEA	CR309T104AEA	CR309T604AEA	CR309T204AEA	CR309T404AEA
2	45	575-600	25	CR309T005AEA	CR309T105AEA	CR309T605AEA	CR309T205AEA	CR309T405AEA
3	90	Separate control—115-120 V		CR309U002AEA	CR309U102AEA	CR309U602AEA	CR309U202AEA	CR309U402AEA
3	90	200-208	25	CR309U023AEA	CR309U123AEA	CR309U623AEA	CR309U223AEA	CR309U423AEA
3	90	230-240	30	CR309U003AEA	CR309U103AEA	CR309U603AEA	CR309U203AEA	CR309U403AEA
3	90	460-480	50	CR309U004AEA	CR309U104AEA	CR309U604AEA	CR309U204AEA	CR309U404AEA
3	90	575-600	50	CR309U005AEA	CR309U105AEA	CR309U605AEA	CR309U205AEA	CR309U405AEA
4	135	Separate control—115-120 V		CR309W002AEA	CR309W102AEA	CR309W602AEA	CR309W202AEA	CR309W402AEA
4	135	200-208	40	CR309W023AEA	CR309W123AEA	CR309W623AEA	CR309W223AEA	CR309W423AEA
4	135	230-240	50	CR309W003AEA	CR309W103AEA	CR309W603AEA	CR309W203AEA	CR309W403AEA
4	135	460-480	100	CR309W004AEA	CR309W104AEA	CR309W604AEA	CR309W204AEA	CR309W404AEA
4	135	575-600	100	CR309W005AEA	CR309W105AEA	CR309W605AEA	CR309W205AEA	CR309W405AEA
5	270	Separate control—115-120 V		CR309Z002AEA	CR309Z102AEA	CR309Z602AEA	CR309Z202AEA	CR309Z402AEA
5	270	200-208	75	CR309Z023AEA	CR309Z123AEA	CR309Z623AEA	CR309Z223AEA	CR309Z423AEA
5	270	230-240	100	CR309Z003AEA	CR309Z103AEA	CR309Z603AEA	CR309Z203AEA	CR309Z403AEA
5	270	460-480	200	CR309Z004AEA	CR309Z104AEA	CR309Z604AEA	CR309Z204AEA	CR309Z404AEA
5	270	575-600	200	CR309Z005AEA	CR309Z105AEA	CR309Z605AEA	CR309Z205AEA	CR309Z405AEA

[1]Motor full load current should not exceed continuous ampere rating of the starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Enclosed combination magnetic starters

CR307, CR407, CR308, CR408 non-reversing product overview

400 horsepower maximum
NEMA sizes 0–6
600 volts maximum
50/60 Hz



CR307 enclosed combination starter

These combination starters are used for full voltage starting of single-speed squirrel-cage induction motors up to 400 horsepower maximum, 600 volts maximum. Each starter provides short-circuit protection by means of a fusible disconnect, a thermal magnetic trip circuit breaker, or circuit interrupter function with a non-fusible disconnect switch.

Features

- Branch circuit protection — is provided by means of a disconnect switch or molded case circuit breaker.
- Mechanism — always controls interrupting switch.
- Easy inspection, maintenance — performed from starter front.
- LED lights standard.
- Optional factory-installed control transformer.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Enclosed combination magnetic starters

CR307, CR407 non-reversing, thermal magnetic circuit breaker

NEMA sizes 0–6, thermal magnetic circuit breaker type
600 volts maximum 50/60 Hz

Standard features

Tmax® XT circuit breaker. Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. LED lights standard.

Thermal magnetic circuit breaker type

Voltage (60 Hz)	NEMA size	Max. hp	Continuous amp rating	CB rating (amps)	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
200–208	0	2	18	15	CR307BT08TC4AAAAA	CR407B608TC4AAAAA	CR407B208TC4AAAAA	CR407B408TC4AAAAA
200–208	0	3	18	20	CR307BT08TD4AAAAA	CR407B608TD4AAAAA	CR407B208TD4AAAAA	CR407B408TD4AAAAA
200–208	1	5	27	30	CR307CT08TF4AAAAA	CR407C608TF4AAAAA	CR407C208TF4AAAAA	CR407C408TF4AAAAA
200–208	1	7½	27	40	CR307CT08TG4AAAAA	CR407C608TG4AAAAA	CR407C208TG4AAAAA	CR407C408TG4AAAAA
200–208	2	10	45	50	CR307DT08TH4AAAAA	CR407D608TH4AAAAA	CR407D208TH4AAAAA	CR407D408TH4AAAAA
200–208	3	15	90	80	CR407E108TL4AAAAA	CR407E608TL4AAAAA	CR407E208TL4AAAAA	CR407E408TL4AAAAA
200–208	3	20	90	100	CR407E108TN4AAAAA	CR407E608TN4AAAAA	CR407E208TN4AAAAA	CR407E408TN4AAAAA
200–208	3	25	90	125	CR407E108TQ4AAAAA	CR407E608TQ4AAAAA	CR407E208TQ4AAAAA	CR407E408TQ4AAAAA
200–208	4	30	135	150	CR407F108TR4AAAAA	CR407E608TQ4AAAAA	CR407F208TR4AAAAA	CR407F408TR4AAAAA
200–208	4	40	135	200	CR407F108TT4AAAAA	CR407F608TT4AAAAA	CR407F208TT4AAAAA	CR407F408TT4AAAAA
230–240	0	3	18	15	CR307BT03TC4AAAAA	CR407B603TC4AAAAA	CR407B203TC4AAAAA	CR407B403TC4AAAAA
230–240	1	5	27	25	CR307CT03TE4AAAAA	CR407C603TE4AAAAA	CR407C203TE4AAAAA	CR407C403TE4AAAAA
230–240	1	7½	27	40	CR307CT03TG4AAAAA	CR407C603TG4AAAAA	CR407C203TG4AAAAA	CR407C403TG4AAAAA
230–240	2	10	45	50	CR307DT03TH4AAAAA	CR407D603TH4AAAAA	CR407D203TH4AAAAA	CR407D403TH4AAAAA
230–240	2	15	45	70	CR307DT03TK4AAAAA	CR407D603TK4AAAAA	CR407D203TK4AAAAA	CR407D403TK4AAAAA
230–240	3	20	90	90	CR407E103TM4AAAAA	CR407E603TM4AAAAA	CR407E203TM4AAAAA	CR407E403TM4AAAAA
230–240	3	25	90	110	CR407E103TP4AAAAA	CR407E603TP4AAAAA	CR407E203TP4AAAAA	CR407E403TP4AAAAA
230–240	3	30	90	125	CR407E103TP4AAAAA	CR407E603TQ4AAAAA	CR407E203TQ4AAAAA	CR407E403TQ4AAAAA
230–240	4	40	135	175	CR407F103TS4AAAAA	CR407F603TS4AAAAA	CR407F203TS4AAAAA	CR407F403TS4AAAAA
230–240	4	50	135	200	CR407F103TT4AAAAA	CR407F603TS4AAAAA	CR407F203TT4AAAAA	CR407F403TT4AAAAA
460–480	0	5	18	15	CR307BT04TC4AAAAA	CR407B604TC4AAAAA	CR407B204TC4AAAAA	CR407B404TC4AAAAA
460–480	1	7½	27	20	CR307CT04TD4AAAAA	CR407C604TD4AAAAA	CR407C204TD4AAAAA	CR407C404TD4AAAAA
460–480	1	10	27	25	CR307CT04TE4AAAAA	CR407C604TE4AAAAA	CR407C204TE4AAAAA	CR407C404TE4AAAAA
460–480	2	15	45	40	CR307DT04TG4AAAAA	CR407D604TG4AAAAA	CR407D204TG4AAAAA	CR407D404TG4AAAAA
460–480	2	20	45	50	CR307DT04TH4AAAAA	CR407D604TH4AAAAA	CR407D204TH4AAAAA	CR407D404TH4AAAAA
460–480	2	25	45	60	CR307DT04TH4AAAAA	CR407D604TJ4AAAAA	CR407D204TJ4AAAAA	CR407D404TJ4AAAAA
460–480	3	30	90	60	CR407E104TJ4AAAAA	CR407D604TH4AAAAA	CR407E204TJ4AAAAA	CR407E404TJ4AAAAA
460–480	3	40	90	80	CR407E104TL4AAAAA	CR407E604TL4AAAAA	CR407E204TL4AAAAA	CR407E404TL4AAAAA
460–480	3	50	90	100	CR407E104TN4AAAAA	CR407E604TN4AAAAA	CR407E204TN4AAAAA	CR407E404TN4AAAAA
460–480	4	60	135	125	CR407E104TN4AAAAA	CR407F604TQ4AAAAA	CR407F204TQ4AAAAA	CR407F404TQ4AAAAA
460–480	4	75	135	150	CR407F104TR4AAAAA	CR407F604TR4AAAAA	CR407F204TR4AAAAA	CR407F404TR4AAAAA
460–480	4	100	135	200	CR407F104TT4AAAAA	CR407F604TT4AAAAA	CR407F204TT4AAAAA	CR407F404TT4AAAAA
575–600	0	5	18	15	CR407F104TT4AAAAA	CR407B605TC4AAAAA	CR407B205TC4AAAAA	CR407B405TC4AAAAA
575–600	1	7 ½	27	15	CR407F104TT4AAAAA	CR407C605TC4AAAAA	CR407C205TC4AAAAA	CR407C405TC4AAAAA
575–600	1	10	27	20	CR407F104TT4AAAAA	CR407C605TD4AAAAA	CR407C205TD4AAAAA	CR407C405TC4AAAAA
575–600	2	15	45	30	CR407F104TT4AAAAA	CR407D605TF4AAAAA	CR407D205TF4AAAAA	CR407D405TF4AAAAA
575–600	2	20	45	40	CR407F104TT4AAAAA	CR407D605TG4AAAAA	CR407D205TG4AAAAA	CR407D405TG4AAAAA
575–600	2	25	45	50	CR407F104TT4AAAAA	CR407D605TH4AAAAA	CR407D205TH4AAAAA	CR407D405TH4AAAAA
575–600	3	30	90	50	CR407E105TH4AAAAA	CR407E605TH4AAAAA	CR407E205TH4AAAAA	CR407E405TH4AAAAA
575–600	3	40	90	70	CR407E105TH4AAAAA	CR407E605TK4AAAAA	CR407E205TK4AAAAA	CR407E405TK4AAAAA
575–600	3	50	90	80	CR407E105TL4AAAAA	CR407E605TL4AAAAA	CR407E205TL4AAAAA	CR407E405TL4AAAAA
575–600	4	60	135	100	CR407F105TN4AAAAA	CR407F605TN4AAAAA	CR407F205TN4AAAAA	CR407F405TN4AAAAA
575–600	4	75	135	125	CR407F105TQ4AAAAA	CR407F605TQ4AAAAA	CR407F205TQ4AAAAA	CR407F405TQ4AAAAA
575–600	4	100	135	150	CR407F105TQ4AAAAA	CR407F605TR4AAAAA	CR407F205TR4AAAAA	CR407F405TR4AAAAA

- NEMA size 0–4 starters with 115–120 volt, 60 Hz coil for separate control are available. To order, replace digits 8 and 9 of listed ordering codes with 02. Example: CR407B604TC1AAAAA with 115–120 volt, 60 Hz coil for separate control becomes CR407B602TC1AAAAA.
- Motor full load current should not exceed continuous ampere rating of starter.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Enclosed combination magnetic starters

CR307 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

NEMA size	NEMA type 1 Standard enclosure
0	CR307BT
1	CR307CT
2	CR307DT

Note: All enclosures include external overload reset buttons.

Step 2 (digits 8, 9) select control voltage

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT	Standard size CPT + 100 VA
120 V with surge protector (SP)	01	F1	–	–
120 V	02	F2	–	–
240 V	03	F3	–	–
480 V	04	F4	–	–
600 V	05	F5	–	–
208 V	08	F8	–	–
24 V	09	–	–	–
240 V/120 V with CPT	–	–	93	13
480 V/120 V with CPT	–	–	94	14
600 V/120 V with CPT	–	–	95	15
208 V/120 V with CPT	–	–	98	18
240 V/120 V with CPT and SP	–	–	33	53
480 V/120 V with CPT and SP	–	–	34	54
600 V/120 V with CPT and SP	–	–	35	55
208 V/120 V with CPT and SP	–	–	38	58
240 V/24 V with CPT	–	–	S3	A3
480 V/24 V with CPT	–	–	S4	A4
600 V/24 V with CPT	–	–	S5	A5
208 V/24 V with CPT	–	–	S8	A8

Note: CPT includes 2 primary fuses and 1 secondary fuse.

Step 3 (digits 10, 11) select protective device

Thermal magnetic circuit breaker

	200–208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	2	15	TC	3	15	TC	5	15	TC	5	15	TC
	3	15	TC	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	7½	15	TC
	5	25	TE	5	25	TE	7½	25	TE	–	–	–
	–	–	–	–	–	–	–	–	–	10	25	TE
	7½	40	TG	7½	40	TG	10	25	TE	10	20	TD
2	–	–	–	–	–	–	15	40	TG	15	40	TG
	10	60	TJ	10	60	TJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	TG
	–	–	–	15	60	TJ	20	60	TJ	–	–	–
	–	–	–	–	–	–	25	60	TJ	25	60	TJ

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Enclosed combination magnetic starters

CR307 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	3/4	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–		20	H	25	H
	25–50	10	J	15	J	25	J	–	–

Optional ranges

	NEMA size	
OL amp range	0 and 1	2
0.4–0.85	C	–
0.8–1.7	D	–
1.6–3.4	E	–
3.2–6.8	F	–
6.5–13.5	G	G
13–27	H	H
25–50	–	J
17–35	–	–
35–70	–	–
65–135	–	–

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO–1 NC	G
1 NO–2 NC	H
3 NO	J
3 NC	K
4 NO	L[1]
4 NC	M[1]
2 NO–2 NC	N[1]
3 NO–1 NC	P[1]
1 NO–3 NC	R[1]

[1]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16)

Step 6 (digit 14) select monitoring options

Device	Code
None[2]	A

[2]Phase failure relay is not available for CR307 series standard enclosures. If this is required for your application, use CR407 series oversized enclosure.

Step 7 (digit 15) select pushbutton/ selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

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Enclosed combination magnetic starters

CR307 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 16) select pilot device

Pilot light (heavy duty) type	Color — functionality	Code
None		A
LED lights	Red — across coil	1
	Green — across coil	2
	Red — thru NO aux contact	3[3]
	Green — thru NC aux contact	4[3]
	Red — thru NO aux contact and green — thru NC aux contact	5[4]
	Red — across coil and green — thru NC aux contact	6[3]
	Red — across coil and green — thru NC aux contact and unwired amber	7[3]
Push-to-test lights	Red — across coil	R
	Green — across coil	S
	Red — thru NO aux contact	C[3]
	Green — thru NC aux contact	D[3]
	Red — thru NO aux contact and green — thru NC aux contact	E[4]
	Red — across coil and green — thru NC aux contact	V[3]
	Red — across coil and green — thru NC aux contact and unwired amber	Y[3]

[3]Maximum of 3 aux contacts may be added to sizes 0 and 1.
[4]Maximum of 2 aux contacts may be added to sizes 0 and 1. Maximum of 3 aux contacts may be added to sizes 2-4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from Step 5 (digit 13), which are for customer/field connections.

Step 9 (digit 17) select control options

Device	Code
None	A

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR407 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1		NEMA type 3R		NEMA type 12		NEMA type 4/4X	
NEMA size	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure
0	Use CR307	CR407B5	CR407B6	CR407BR	CR407B2	CR407B7	CR407B4	CR407BS
1	Use CR307	CR407C5	CR407C6	CR407CR	CR407C2	CR407C7	CR407C4	CR407CS
2	Use CR307	CR407D5	CR407D6	CR407DR	CR407D2	CR407D7	CR407D4	CR407DS
3	CR407E1	CR407E5	CR407E6	CR407ER	CR407E2	CR407E7	CR407E4	CR407ES
4	CR407F1	CR407F5	CR407F6	CR407FR	CR407F2	CR407F7	CR407F4	CR407FS

Note: All enclosures include external overload reset buttons. NEMA type 4/4X enclosures are type 304 stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.
[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7) table.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR407 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device

Thermal magnetic circuit breaker

	200–208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	2	15	TC	3	15	TC	5	15	TC	5	15	TC
	3	15	TC	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	7½	15	TC
	5	25	TE	5	25	TE	7½	25	TE	–	–	–
	–	–	–	–	–	–	–	–	–	10	25	TE
	7½	40	TG	7½	40	TG	10	25	TE	10	20	TD
2	–	–	–	–	–	–	15	40	TG	15	40	TG
	10	60	TJ	10	60	TJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	TG
	–	–	–	15	60	TJ	20	60	TJ	–	–	–
	–	–	–	–	–	–	25	60	TJ	25	60	TJ
3	–	–	–	–	–	–	30	60	TJ	30	60	TJ
	15	100	TN	20	100	TN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	TJ
	20	100	TN	25	100	TN	40	100	TN	–	–	–
	–	–	–	–	–	–	50	100	TN	50	100	TN
	25	125	TQ	30	125	TQ	–	–	–	–	–	–
4	30	150	TR	–	–	–	60	150	TR	60	150	TR
	–	–	–	40	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	TR	75	150	TR
	40	200	TT	50	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	100	200	TT	100	200	TT

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges below.

Solid state overload relay - standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	3/4	D	1	D
	1.6–3.4	1/2	E	3/4	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–
3	17–35	–	–	–	–	–	–	30	K
	35–70	20	L	25	L	50	L	50	L
	65–135	25	M	30	M	–	–	–	–
4	65–135	40	M	50	M	100	M	100	M

Optional ranges

	NEMA size		
OL amp range	0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

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Enclosed combination magnetic starters

CR407 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 13) select auxiliary contacts

Aux contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO–1 NC	G
1 NO–2 NC	H
3 NO	J
3 NC	K
4 NO	L[3]
4 NC	M[3]
2 NO–2 NC	N3[3]
3 NO–1 NC	P[3]
1 NO–3 NC	R[3]

[3]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16).

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR w/UV)	C[2]
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR w/UV)	D[2]
Phase failure relay — 208 V (PFR)	E[4,6]
Phase failure relay — 240 V (PFR)	F[4,6]
Phase failure relay — 480 V (PFR)	G[4,6]
Phase failure relay — 575 V (PFR)	H[4,6]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[2,5]
ETM + PFR w/UV (190–480 V)	L[2,5,6]
ETM + PFR w/UV (575 V)	N[2,5,6]
ETM + PFR (208 V)	P[2,4,5,6]
ETM + PFR (240 V)	Q[2,4,5,6]
ETM + PFR (480 V)	R[2,4,5,6]
ETM + PFR (575 V)	S[2,4,5,6]

[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[4]Available for type 1 enclosure only.
[5]Requires 120 V control circuit voltage or CPT with 120 V secondary.
[6]Requires oversized enclosure for phase failure relay.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton Push button/selector switch — heavy duty	Code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

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Enclosed combination magnetic starters

CR407 non-reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 16) select pilot device

Pilot light (heavy duty) type	Color — functionality	Code
None		A
LED lights	Red — across coil	1
	Green — across coil	2
	Red — thru NO aux contact	3[7]
	Green — thru NC aux contact	4[7]
	Red — thru NO aux contact and green — thru NC aux contact	5[8]
	Red — across coil and green — thru NC aux contact	6[7]
	Red — across coil and green — thru NC aux contact and unwired amber	7[7]
Push-to-test lights	Red — across coil	R
	Green — across coil	S
	Red — thru NO aux contact	C[7]
	Green — thru NC aux contact	D[7]
	Red — thru NO aux contact and green — thru NC aux contact	E[8]
	Red — across coil and green — thru NC aux contact	V[7]
	Red — across coil and green — thru NC aux contact and unwired amber	Y[7]

[7]Maximum of 3 Aux contacts may be added to sizes 0 and 1.
[8]Maximum of 2 Aux contacts may be added to sizes 0 and 1. Maximum of 3 Aux contacts may be added to sizes 2–4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from step 5 (digit 13), which are for customer/field connections.

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[2,9]
2 relays, 24/120 V coil — unwired	C[2,9]
DIN rail - for customer use	D[2]
12 point terminal strip — unwired (12 PT strip)	E[2]
Space heater with NC contact	H[2,10]
1 relay + 12 PT strip	J[2,9]
2 relays + 12 PT strip	K[2,9]
DIN rail + 12 PT strip + space heater	L[2,10]
2 relays + 12 PT strip + space heater	M[2,9,10]
Time delay on relay, 24/120 V coil — unwired (TD)	N[2,9]
Time delay off relay, 24/120 V coil — unwired (TD)	P[2,9]
12 PT strip + TD on	R[2,9]
12 PT strip + TD off	S[2,9]
12 PT strip + space heater + TD on	T[2,9,10]
12 PT strip + space heater + TD off	U[2,9,10]

[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[9]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[10]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

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Enclosed combination magnetic starters

CR308, CR408 non-reversing, non-fusible disconnect switch

NEMA sizes 0–6, nonfusible disconnect type
600 volts maximum 50/60 Hz

Standard features
Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. LED lights standard.

Non-fusible disconnect

Voltage (60 Hz)	NEMA size	Max. hp	Continuous amp rating	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
200–208	0	3	18	CR308BT081A4AAAAA	CR408B6081A4AAAAA	CR408B2081A4AAAAA	CR408B4081A4AAAAA
200–208	1	7½	27	CR308CT081A4AAAAA	CR408C6081A4AAAAA	CR408C2081A4AAAAA	CR408C4081A4AAAAA
200–208	2	10	45	CR308DT081A4AAAAA	CR408D6081A4AAAAA	CR408D2081A4AAAAA	CR408D4081A4AAAAA
200–208	3	25	90	CR408E1081A4AAAAA	CR408E6081A4AAAAA	CR408E2081A4AAAAA	CR408E4081A4AAAAA
200–208	4	40	135	CR408F1081A4AAAAA	CR408F6081A4AAAAA	CR408F2081A4AAAAA	CR408F4081A4AAAAA
230–240	0	3	18	CR308BT031A4AAAAA	CR408B6031A4AAAAA	CR408B2031A4AAAAA	CR408B4031A4AAAAA
230–240	1	7½	27	CR308CT031A4AAAAA	CR408C6031A4AAAAA	CR408C2031A4AAAAA	CR408C4031A4AAAAA
230–240	2	15	45	CR308DT031A4AAAAA	CR408D6031A4AAAAA	CR408D2031A4AAAAA	CR408D4031A4AAAAA
230–240	3	30	90	CR408E1031A4AAAAA	CR408E6031A4AAAAA	CR408E2031A4AAAAA	CR408E4031A4AAAAA
230–240	4	50	135	CR408F1031A4AAAAA	CR408F6031A4AAAAA	CR408F2031A4AAAAA	CR408F4031A4AAAAA
460–480	0	5	18	CR308BT041A4AAAAA	CR408B6041A4AAAAA	CR408B2041A4AAAAA	CR408B4041A4AAAAA
460–480	1	10	27	CR308CT041A4AAAAA	CR408C6041A4AAAAA	CR408C2041A4AAAAA	CR408C4041A4AAAAA
460–480	2	25	45	CR308DT041A4AAAAA	CR408D6041A4AAAAA	CR408D2041A4AAAAA	CR408D4041A4AAAAA
460–480	3	50	90	CR408E1041A4AAAAA	CR408E6041A4AAAAA	CR408E2041A4AAAAA	CR408E4041A4AAAAA
460–480	4	100	135	CR408F1041A4AAAAA	CR408F6041A4AAAAA	CR408F2041A4AAAAA	CR408F4041A4AAAAA
575–600	0	5	18	CR308BT051A4AAAAA	CR408B6051A4AAAAA	CR408B2051A4AAAAA	CR408B4051A4AAAAA
575–600	1	10	27	CR308CT051A4AAAAA	CR408C6051A4AAAAA	CR408C2051A4AAAAA	CR408C4051A4AAAAA
575–600	2	25	45	CR308DT051A4AAAAA	CR408D6051A4AAAAA	CR408D2051A4AAAAA	CR408D4051A4AAAAA
575–600	3	50	90	CR408E1051A4AAAAA	CR408E6051A4AAAAA	CR408E2051A4AAAAA	CR408E4051A4AAAAA
575–600	4	100	135	CR408F1051A4AAAAA	CR408F6051A4AAAAA	CR408F2051A4AAAAA	CR408F4051A4AAAAA

- NEMA size 0–4 starters with 115–120 volt, 60 Hz coil for separate control are available. To order, replace digits 8 and 9 of listed ordering codes with 02. Example: CR408C2051A1AAAAA with 115–120 volt, 60 Hz coil for separate control becomes CR408C2021A1AAAAA.
- Motor full load current should not exceed continuous ampere rating of starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR308, CR408 non-reversing, fusible disconnect switch

NEMA sizes 0–6, fusible disconnect type
600 volts maximum 50/60 Hz

Standard features
Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. LED lights standard.

Fusible disconnect (class R fuse clips)

Voltage (60 Hz)	NEMA size	Max. hp	Continuous amp rating	Fuse clip amp rating	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
200–208	0	3	18	30	CR308BT08RA4AAAAA	CR408B608RA4AAAAA	CR408B208RA4AAAAA	CR408B408RA4AAAAA
200–208	1	5	27	30	CR308CT08RA4AAAAA	CR408C608RA4AAAAA	CR408C208RA4AAAAA	CR408C408RA4AAAAA
200–208	1	7½	27	60	CR308CT08RB4AAAAA	CR408C608RB4AAAAA	CR408C208RB4AAAAA	CR408C408RB4AAAAA
200–208	2	10	45	60	CR308DT08RB4AAAAA	CR408D608RB4AAAAA	CR408D208RB4AAAAA	CR408D408RB4AAAAA
200–208	3	20	90	100	CR408E108RC4AAAAA	CR408E608RC4AAAAA	CR408E208RC4AAAAA	CR408E408RC4AAAAA
200–208	3	25	90	200[1]	CR408E108RD4AAAAA	CR408E608RD4AAAAA	CR408E208RD4AAAAA	CR408E408RD4AAAAA
200–208	4	40	135	200[1]	CR408F108RD4AAAAA	CR408F608RD4AAAAA	CR408F208RD4AAAAA	CR408F408RD4AAAAA
230–240	0	3	18	30	CR308BT03RA4AAAAA	CR408B603RA4AAAAA	CR408B203RA4AAAAA	CR408B403RA4AAAAA
230–240	1	5	27	30	CR308CT03RA4AAAAA	CR408C603RA4AAAAA	CR408C203RA4AAAAA	CR408C403RA4AAAAA
230–240	1	7½	27	60	CR308CT03RB4AAAAA	CR408C603RB4AAAAA	CR408C203RB4AAAAA	CR408C403RB4AAAAA
230–240	2	15	45	60	CR308DT03RB4AAAAA	CR408D603RB4AAAAA	CR408D203RB4AAAAA	CR408D403RB4AAAAA
230–240	3	25	90	100	CR408E103RC4AAAAA	CR408E603RC4AAAAA	CR408E203RC4AAAAA	CR408E403RC4AAAAA
230–240	3	30	90	200[1]	CR408E103RD4AAAAA	CR408E603RD4AAAAA	CR408E203RD4AAAAA	CR408E403RD4AAAAA
230–240	4	50	135	200[1]	CR408F103RD4AAAAA	CR408F603RD4AAAAA	CR408F203RD4AAAAA	CR408F403RD4AAAAA
460–480	0	5	18	30	CR308BT04R34AAAAA	CR408B604R34AAAAA	CR408B204R34AAAAA	CR408B404R34AAAAA
460–480	1	10	27	30	CR308CT04R34AAAAA	CR408C604R34AAAAA	CR408C204R34AAAAA	CR408C404R34AAAAA
460–480	2	25	45	60	CR308DT04R64AAAAA	CR408D604R64AAAAA	CR408D204R64AAAAA	CR408D404R64AAAAA
460–480	3	50	90	100	CR408E104R14AAAAA	CR408E604R14AAAAA	CR408E204R14AAAAA	CR408E404R14AAAAA
460–480	4	100	135	200[1]	CR408F104R24AAAAA	CR408F604R24AAAAA	CR408F204R24AAAAA	CR408F404R24AAAAA
575–600	0	5	18	30	CR308BT05R34AAAAA	CR408B605R34AAAAA	CR408B205R34AAAAA	CR408B405R34AAAAA
575–600	1	10	27	30	CR308CT05R34AAAAA	CR408C605R34AAAAA	CR408C205R34AAAAA	CR408C405R34AAAAA
575–600	2	15	45	30	CR308DT05R34AAAAA	CR408D605R34AAAAA	CR408D205R34AAAAA	CR408D405R34AAAAA
575–600	2	25	45	60	CR308DT05R64AAAAA	CR408D605R64AAAAA	CR408D205R64AAAAA	CR408D405R64AAAAA
575–600	3	30	90	60	CR408E105R64AAAAA	CR408E605R64AAAAA	CR408E205R64AAAAA	CR408E405R64AAAAA
575–600	3	50	90	100	CR408E105R14AAAAA	CR408E605R14AAAAA	CR408E205R14AAAAA	CR408E405R14AAAAA
575–600	4	60	135	100[1]	CR408F105R14AAAAA	CR408F605R14AAAAA	CR408F205R14AAAAA	CR408F405R14AAAAA
575–600	4	100	135	200[1]	CR408F105R24AAAAA	CR408F605R24AAAAA	CR408F205R24AAAAA	CR408F405R24AAAAA

[1]Oversized enclosure provided as standard.

- NEMA size 0–4 starters with 115–120 volt, 60 Hz coil for separate control are available. To order, replace digits 8 and 9 of listed ordering codes with 02. Example: CR408D604R61AAAAA with 115–120 volt, 60 Hz coil for separate control becomes CR408D602R61AAAAA.
- For ordinary starting duty only
- Motor full load current should not exceed continuous ampere rating of starter.
- hp rating is based on dual element fuses.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR308 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1
NEMA size	Standard enclosure
0	CR308BT
1	CR308CT
2	CR308DT

Note: All enclosures include external overload reset buttons.

Step 2 (digits 8, 9) select control voltage

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT	–	–	S3
480 V/24 V with CPT	–	–	S4
600 V/24 V with CPT	–	–	S5
208 V/24 V with CPT	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.

Step 3 (digits 10, 11) select protective device

NEMA size	Code
All	1A

Note: All enclosures include external overload reset buttons.

Disconnect with class H fuse clips — for use with non-time delay/single element class H fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	HA	3	30	HA	5	30	H3	5	30	H3
1	7½	60	HB	7½	60	HB	7½	30	H3	10	30	H3
	–	–	–	–	–	–	10	60	H6	–	60	H6
2	10	100	HC	15	100	HC	15	60	H6	20	60	H6
	–	–	–	–	–	–	25	100	H1[1]	25	100	H1[1]

[1]Oversized enclosure included as standard.

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Enclosed combination magnetic starters

CR308 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device (continued)

Disconnect with class R fuse clips — for use with time delay/dual element class RK1/RK5 fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	RA	3	30	RA	5	30	R3	5	30	R3
1	5	30	RA	5	30	RA	10	30	R3	10	30	R3
	7½	60	RB	7½	60	RB	–	–	–	–	–	–
2	10	60	RB	15	60	RB	–	30	R3	15	30	R3
	–	–	–	–	–	–	25	60	R6	25	60	R6

Disconnect with class J fuse clips — for use with time delay/dual element class J fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	J3	3	30	J3	5	30	J3	5	30	J3
1	5	30	J3	5	30	J3	10	30	J3	10	30	J3
	7½	60	J6	7½	60	J6	–	–	–	–	–	–
2	10	60	J6	15	60	J6	–	30	J3	15	30	J3
	–	–	–	–	–	–	25	60	J6	25	60	J6

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27		–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–

Optional ranges

	NEMA size	
OL amp range	0 and 1	2
0.4–0.85	C	–
0.8–1.7	D	–
1.6–3.4	E	–
3.2–6.8	F	–
6.5–13.5	G	G
13–27	H	H
25–50	–	J
17–35	–	–
35–70	–	–
65–135	–	–

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR308 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO–1 NC	G
1 NO–2 NC	H

Step 5 (digit 13) select auxiliary contacts (continued)

Auxiliary contacts	Code
3 NO	J
3 NC	K
4 NO	L[2]
4 NC	M[2]
2 NO–2 NC	N[2]
3 NO–1 NC	P[2]
1 NO–3 NC	R[2]

[2]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16).

Step 6 (digit 14) select monitoring options

Device	Code
None[3]	A

[3]Phase failure relay is not available for CR308 series standard enclosures. If this is required for your application, use CR408 series oversized enclosure.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR308 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 16) select pilot device

Type	Color - functionality	Code
None		A
LED lights	Red — across coil	1
	Green — across coil	2
	Red — thru NO aux contact	3[4]
	Green — thru NC aux contact	4[4]
	Red — thru NO aux contact and green — thru NC aux contact	5[5]
	Red — across coil and green — thru NC aux contact	6[4]
	Red — across coil and green — thru NC aux contact and unwired amber	7[4]
Push-to-test lights	Red — across coil	R
	Green — across coil	S
	Red — thru NO aux contact	C[4]
	Green — thru NC aux contact	D[4]
	Red — thru NO aux contact and green — thru NC aux contact	E[5]
	Red — across coil and green — thru NC aux contact	V[4]
	Red — across coil and green — thru NC aux contact and unwired amber	Y[4]

[4]Maximum of 3 aux contacts may be added to Sizes 0 and 1.
[5]Maximum of 2 aux contacts may be added to Sizes 0 and 1. Maximum of 3 aux contacts may be added to sizes 2–4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from step 5 (digit 13), which are for customer/field connections.

Step 9 (digit 17) select control options

Device	Code
None	A

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR408 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1		NEMA type 3R		NEMA type 12		NEMA type 4/4X	
NEMA size	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure
0	Use CR308	CR408B5	CR408B6	CR408BR	CR408B2	CR408B7	CR408B4	CR408BS
1	Use CR308	CR408C5	CR408C6	CR408CR	CR408C2	CR408C7	CR408C4	CR408CS
2	Use CR308	CR408D5	CR408D6	CR408DR	CR408D2	CR408D7	CR408D4	CR408DS
3	CR408E1	CR408E5[1]	CR408E6	CR408ER[1]	CR408E2	CR408E7[1]	CR408E4	CR408ES[1]
4[2]	CR408F1	–	CR408F6	–	CR408F2	–	CR408F4	–

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.
[1]Oversized enclosure provided as standard with 200 amp fusible disconnect.
[2]Oversized enclosure provided as standard with any NEMA size 4 fusible/non-fusible.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[3]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[3]	–	–	S3
480 V/24 V with CPT[3]	–	–	S4
600 V/24 V with CPT[3]	–	–	S5
208 V/24 V with CPT[3]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[3]24 V coils are not available for NEMA size 3 and above.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR408 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device

Disconnect without fuse clips

NEMA size	Code
All	1A[2]

Disconnect with class H fuse clips — for use with non-time delay/single element class H fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	HA	3	30	HA	5	30	H3	5	30	H3
1	7½	60	HB	7½	60	HB	7½	30	H3	10	30	H3
	–	–	–	–	–	–	10	60	H6	–	60	H6
2	10	100	HC	15	100	HC	15	60	H6	20	60	H6
	–	–	–	–	–	–	25	100	H1	25	100	H1
3[1]	25	200	HD	30	200	HD	30	100	H1	30	100	H1
	–	–	–	–	–	–	50	200	H2	50	200	H2
4[2]	40	400	HE	50	400	HE	60	200	H2	60	200	H2
	–	–	–	–	–	–	100	400	H4	100	400	H4

[1]Oversized enclosure provided as standard with 200 amp fusible disconnect
[2]Oversized enclosure provided as standard with any NEMA size 4 fusible/non-fusible

Disconnect with class R fuse clips — for use with time delay/dual element class RK1/RK5 fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	RA	3	30	RA	5	30	R3	5	30	R3
1	5	30	RA	5	30	RA	10	30	R3	10	30	R3
	7½	60	RB	7½	60	RB	–	–	–	–	–	–
2	10	60	RB	15	60	RB	–	30	R3	15	30	R3
	–	–	–	–	–	–	25	60	R6	25	60	R6
3[1]	20	100	RC	25	100	RC	–	60	R6	30	60	R6
	25	200	RD	30	200	RD	50	100	R1	50	100	R1
4[2]	40	200	RD	50	200	RD	–	100	R1	60	100	R1
	–	–	–	–	–	–	100	200	R2	100	200	R2

[1]Oversized enclosure provided as standard with 200 amp fusible disconnect
[2]Oversized enclosure provided as standard with any NEMA size 4 fusible/non-fusible

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR408 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device (continued)

Disconnect with class J fuse clips — for use with time delay/dual element class J fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	J3	3	30	J3	5	30	J3	5	30	J3
1	5	30	J3	5	30	J3	10	30	J3	10	30	J3
	7½	60	J6	7½	60	J6	–	–	–	–	–	–
2	10	60	J6	15	60	J6	–	30	J3	15	30	J3
	–	–	–	–	–	–	25	60	J6	25	60	J6
3[1]	20	100	J2	25	100	J1	–	60	J6	30	60	J6
	25	200	J2	30	200	J2	50	100	J1	50	100	J1
4[2]	40	200	J2	50	200	J2	–	100	J1	60	100	J1
	–	–	–	–	–	–	100	200	J2	100	200	J2

[1]Oversized enclosure provided as standard with 200 amp fusible disconnect
[2]Oversized enclosure provided as standard with any NEMA size 4 fusible/non-fusible

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table at right and below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	1/2	E	3/4	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–
3	17–35	–	–	–	–	–	–	30	K
	35–70	20	L	25	L	50	L	50	L
	65–135	25	M	30	M	–	–	–	–
4	65–135	40	M	50	M	100	M	100	M

Solid state overload relay — optional ranges

	NEMA size		
OL amp range	0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO-1 NC	G
1 NO-2 NC	H

Step 5 (digit 13) select auxiliary contacts (continued)

Auxiliary contacts	Code
3 NO	J
3 NC	K
4 NO	L[5]
4 NC	M[5]
2 NO-2 NC	N[5]
3 NO-1 NC	P[5]
1 NO-3 NC	R[5]

[5]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16).

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Enclosed combination magnetic starters

CR408 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C[2,7]
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D[2,7]
Phase failure relay — 208 V (PFR)	E[4,7]
Phase failure relay — 240 V (PFR)	F[4,7]
Phase failure relay — 480 V (PFR)	G[4,7]
Phase failure relay — 575 V (PFR)	H[4,7]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[2,6]
ETM + PFR w/UV (190–480 V)	L[2,6,7]
ETM + PFR w/UV (575 V)	N[2,6,7]
ETM + PFR (208 V)	P[2,4,6,7]
ETM + PFR (240 V)	Q[2,4,6,7]
ETM + PFR (480 V)	R[2,4,6,7]
ETM + PFR (575 V)	S[2,4,6,7]

[2]Requires oversized enclosure for NEMA sizes 0-2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[4]Available for type 1 enclosure only.
[6]Requires 120 V control circuit voltage or CPT with 120 V secondary.
[7]Requires oversized enclosure for phase failure relay.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

Step 8 (digit 16) select pilot device

Type	Color - functionality	Code
None		A
LED lights	Red — across coil	1
	Green — across coil	2
	Red — thru NO aux contact	3[9]
	Green — thru NC aux contact	4[9]
	Red — thru NO aux contact and green — thru NC aux contact	5[10]
	Red — across coil and green — thru NC aux contact	6[9]
	Red — across coil and green — thru NC aux contact and unwired amber	7[9]
Push-to-test lights	Red — across coil	R
	Green — across coil	S
	Red — thru NO aux contact	C[9]
	Green — thru NC aux contact	D[9]
	Red — thru NO aux contact and green — thru NC aux contact	E[10]
	Red — across coil and green — thru NC aux contact	V[9]
	Red — across coil and green — thru NC aux contact and unwired amber	Y[9]

[9]Maximum of 3 aux contacts may be added to sizes 0 and 1.
[10]Maximum of 2 aux contacts may be added to sizes 0 and 1. Maximum of 3 aux contacts may be added to sizes 2–4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from step 5 (digit 13), which are for customer/field connections.

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Enclosed combination magnetic starters

CR408 non-reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

9 (digit 17) select control options

Device	Code
None	A
DIN rail — for customer use	D[4]
12 point terminal strip — unwired (12 PT strip)	E[4]
Space heater with NC contact	H[4,12]
DIN rail + 12 PT strip + space heater	L[4,12]

[4]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[12]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR387, CR487 non-reversing, instantaneous trip circuit breaker

400 horsepower maximum
NEMA sizes 0–6
600 volts maximum
50/60 Hz

The CR387/487 non-reversing starters are designed for more accurate fault protection for motor circuits by utilizing Tmax® XT motor circuit protectors.

Features

- Mechanism — always controls interrupting switch.
- Easy inspection, maintenance — performed from starter front.
- LED lights standard.
- Optional factory-installed control transformer.



CR387

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Enclosed combination magnetic starters

CR387, CR487 non-reversing, instantaneous trip circuit breaker

200 horsepower maximum
NEMA sizes 0–5, instantaneous trip circuit breaker type
600 volts maximum 50/60 Hz

Standard features
Tmax® XT circuit breaker. Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. LED lights standard.

Instantaneous trip circuit breaker type

Voltage (60 Hz)	NEMA size	Max. hp	Continuous amp rating	CB rating (amps)	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
200–208	0	1	18	7	CR387BT08MB4AAAAA	CR487B608MB4AAAAA	CR487B208MB4AAAAA	CR487B408MB4AAAAA
200–208	0	3	18	15	CR387BT08MC4AAAAA	CR487B608MC4AAAAA	CR487B208MC4AAAAA	CR487B408MC4AAAAA
200–208	1	5	27	25	CR387CT08ME4AAAAA	CR487C608ME4AAAAA	CR487C208ME4AAAAA	CR487C408ME4AAAAA
200–208	1	7½	27	40	CR387CT08MG4AAAAA	CR487C608MG4AAAAA	CR487C208MG4AAAAA	CR487C408MG4AAAAA
200–208	2	10	45	50	CR387DT08MH4AAAAA	CR487D608MH4AAAAA	CR487D208MH4AAAAA	CR487D408MH4AAAAA
200–208	3	15	90	70	CR487E108MK4AAAAA	CR487E608MK4AAAAA	CR487E208MK4AAAAA	CR487E408MK4AAAAA
200–208	3	20	90	80	CR487E108ML4AAAAA	CR487E608ML4AAAAA	CR487E208ML4AAAAA	CR487E408ML4AAAAA
200–208	3	25	90	100	CR487E108MN4AAAAA	CR487E608MN4AAAAA	CR487E208MN4AAAAA	CR487E408MN4AAAAA
200–208	4	30	135	125	CR487F108MQ4AAAAA	CR487F608MQ4AAAAA	CR487F208MQ4AAAAA	CR487F408MQ4AAAAA
200–208	4	40	135	150	CR487F108MR4AAAAA	CR487F608MR4AAAAA	CR487F208MR4AAAAA	CR487F408MR4AAAAA
230–240	0	½	18	3	CR387BT03MA4AAAAA	CR487B603MA4AAAAA	CR487B203MA4AAAAA	CR487B403MA4AAAAA
230–240	0	1	18	7	CR387BT03MB4AAAAA	CR487B603MB4AAAAA	CR487B203MB4AAAAA	CR487B403MB4AAAAA
230–240	0	3	18	15	CR387BT03MC4AAAAA	CR487B603MC4AAAAA	CR487B203MC4AAAAA	CR487B403MC4AAAAA
230–240	1	5	27	25	CR387CT03ME4AAAAA	CR487C603ME4AAAAA	CR487C203ME4AAAAA	CR487C403ME4AAAAA
230–240	1	7½	27	30	CR387CT03MF4AAAAA	CR487C603MF4AAAAA	CR487C203MF4AAAAA	CR487C403MF4AAAAA
230–240	2	10	45	40	CR387DT03MG4AAAAA	CR487D603MG4AAAAA	CR487D203MG4AAAAA	CR487D403MG4AAAAA
230–240	2	15	45	60	CR387DT03MJ4AAAAA	CR487D603MJ4AAAAA	CR487D203MJ4AAAAA	CR487D403MJ4AAAAA
230–240	3	20	90	70	CR487E103MK4AAAAA	CR487E603MK4AAAAA	CR487E203MK4AAAAA	CR487E403MK4AAAAA
230–240	3	25	90	90	CR487E103MM4AAAAA	CR487E603MM4AAAAA	CR487E203MM4AAAAA	CR487E403MM4AAAAA
230–240	3	30	90	100	CR487E103MN4AAAAA	CR487E603MN4AAAAA	CR487E203MN4AAAAA	CR487E403MN4AAAAA
230–240	4	40	135	150	CR487F103MR4AAAAA	CR487F603MR4AAAAA	CR487F203MR4AAAAA	CR487F403MR4AAAAA
230–240	4	50	135	175	CR487F103MS4AAAAA	CR487F603MS4AAAAA	CR487F203MS4AAAAA	CR487F403MS4AAAAA
460–480	0	1	18	3	CR387BT04MA4AAAAA	CR487B604MA4AAAAA	CR487B204MA4AAAAA	CR487B404MA4AAAAA
460–480	0	3	18	7	CR387BT04MB4AAAAA	CR487B604MB4AAAAA	CR487B204MB4AAAAA	CR487B404MB4AAAAA
460–480	0	5	18	15	CR387BT04MC4AAAAA	CR487B604MC4AAAAA	CR487B204MC4AAAAA	CR487B404MC4AAAAA
460–480	1	7½	27	15	CR387CT04MC4AAAAA	CR487C604MC4AAAAA	CR487C204MC4AAAAA	CR487C404MC4AAAAA
460–480	1	10	27	20	CR387CT04MD4AAAAA	CR487C604MD4AAAAA	CR487C204MD4AAAAA	CR487C404MD4AAAAA
460–480	2	15	45	30	CR387DT04MF4AAAAA	CR487D604MF4AAAAA	CR487D204MF4AAAAA	CR487D404MF4AAAAA
460–480	2	20	45	40	CR387DT04MG4AAAAA	CR487D604MG4AAAAA	CR487D204MG4AAAAA	CR487D404MG4AAAAA
460–480	2	25	45	50	CR387DT04MH4AAAAA	CR487D604MH4AAAAA	CR487D204MH4AAAAA	CR487D404MH4AAAAA
460–480	3	30	90	50	CR487E104MH4AAAAA	CR487E604MH4AAAAA	CR487E204MH4AAAAA	CR487E404MH4AAAAA
460–480	3	40	90	70	CR487E104MK4AAAAA	CR487E604MK4AAAAA	CR487E204MK4AAAAA	CR487E404MK4AAAAA
460–480	3	50	90	90	CR487E104MM4AAAAA	CR487E604MM4AAAAA	CR487E204MM4AAAAA	CR487E404MM4AAAAA
460–480	4	60	135	100	CR487F104MN4AAAAA	CR487F604MN4AAAAA	CR487F204MN4AAAAA	CR487F404MN4AAAAA
460–480	4	75	135	125	CR487F104MQ4AAAAA	CR487F604MQ4AAAAA	CR487F204MQ4AAAAA	CR487F404MQ4AAAAA
460–480	4	100	135	175	CR487F104MS4AAAAA	CR487F604MS4AAAAA	CR487F204MS4AAAAA	CR487F404MS4AAAAA
575–600	0	1	18	3	CR387BT05MA4AAAAA	CR487B605MA4AAAAA	CR487B205MA4AAAAA	CR487B405MA4AAAAA
575–600	0	3	18	7	CR387BT05MB4AAAAA	CR487B605MB4AAAAA	CR487B205MB4AAAAA	CR487B405MB4AAAAA
575–600	0	5	18	15	CR387BT05MC4AAAAA	CR487B605MC4AAAAA	CR487B205MC4AAAAA	CR487B405MC4AAAAA

• Motor full load current should not exceed continuous ampere rating of starter.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR387, CR487 non-reversing, instantaneous trip circuit breaker

200 horsepower maximum
NEMA sizes 0–5, instantaneous trip circuit breaker type
600 volts maximum 50/60 Hz

Standard features
Tmax® XT circuit breaker. Includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type ambient compensated overload relay with manual reset. All enclosures include external reset. NO/NC contacts on the overload relay are provided. LED lights standard.

Instantaneous trip circuit breaker type (continued)

Voltage (60 Hz)	NEMA size	Max. hp	Continuous amp rating	CB rating (amps)	NEMA type 1 Ordering code	NEMA type 3R Ordering code	NEMA type 12 Ordering code	NEMA type 4/4X Ordering code
575–600	1	10	27	15	CR387CT05MC4AAAAA	CR487C605MC4AAAAA	CR487C205MC4AAAAA	CR487C405MC4AAAAA
575–600	2	15	45	25	CR387DT05ME4AAAAA	CR487D605ME4AAAAA	CR487D205ME4AAAAA	CR487D405ME4AAAAA
575–600	2	20	45	30	CR387DT05MF4AAAAA	CR487D605MF4AAAAA	CR487D205MF4AAAAA	CR487D405MF4AAAAA
575–600	2	25	45	40	CR387DT05MG4AAAAA	CR487D605MG4AAAAA	CR487D205MG4AAAAA	CR487D405MG4AAAAA
575–600	3	30	90	40	CR487E105MG4AAAAA	CR487E605MG4AAAAA	CR487E205MG4AAAAA	CR487E405MG4AAAAA
575–600	3	40	90	60	CR487E105MJ4AAAAA	CR487E605MJ4AAAAA	CR487E205MJ4AAAAA	CR487E405MJ4AAAAA
575–600	3	50	90	70	CR487E105MK4AAAAA	CR487E605MK4AAAAA	CR487E205MK4AAAAA	CR487E405MK4AAAAA
575–600	4	60	135	80	CR487F105ML4AAAAA	CR487F605ML4AAAAA	CR487F205ML4AAAAA	CR487F405ML4AAAAA
575–600	4	75	135	100	CR487F105MN4AAAAA	CR487F605MN4AAAAA	CR487F205MN4AAAAA	CR487F405MN4AAAAA
575–600	4	100	135	150	CR487F105MR4AAAAA	CR487F605MR4AAAAA	CR487F205MR4AAAAA	CR487F405MR4AAAAA

• Motor full load current should not exceed continuous ampere rating of starter.

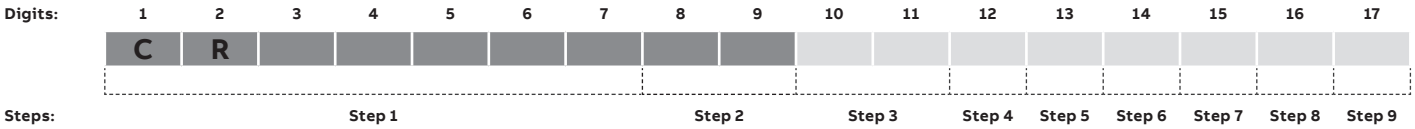
Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR387 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1
NEMA size	Standard enclosure
0	CR387BT
1	CR387CT
2	CR387DT

Note: All enclosures include external overload reset buttons.

Step 2 (digits 8, 9) select control voltage

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT	Standard size CPT + 100 VA
120 V with surge protector (SP)	01	F1	–	–
120 V	02	F2	–	–
240 V	03	F3	–	–
480 V	04	F4	–	–
600 V	05	F5	–	–
208 V	08	F8	–	–
24 V	09	–	–	–
240 V/120 V with CPT	–	–	93	13
480 V/120 V with CPT	–	–	94	14
600 V/120 V with CPT	–	–	95	15
208 V/120 V with CPT	–	–	98	18
240 V/120 V with CPT and SP	–	–	33	53
480 V/120 V with CPT and SP	–	–	34	54
600 V/120 V with CPT and SP	–	–	35	55
208 V/120 V with CPT and SP	–	–	38	58
240 V/24 V with CPT	–	–	S3	A3
480 V/24 V with CPT	–	–	S4	A4
600 V/24 V with CPT	–	–	S5	A5
208 V/24 V with CPT	–	–	S8	A8

Note: CPT includes 2 primary fuses and 1 secondary fuse.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR387 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device

Instantaneous trip circuit breaker

	208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	0.5	3	MA	0.5	3	MA	1	3	MA	1	3	MA
	1	7	MB	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	3	7	MB	3	7	MB
	3	15	MC	1	7	MB	–	–	–	–	–	–
	–	–	–	3	15	MC	5	15	MC	5	15	MC
1	5	25	ME	5	25	ME	7½	25	ME	10	25	ME
	–	–	–	–	–	–	10	25	ME	–	–	–
	7½	40	MG	7½	40	MG	–	–	–	–	–	–
2	–	–	–	–	–	–	15	40	MG	15	40	MG
	10	60	MJ	10	60	MJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	MG
	–	–	–	15	60	MJ	20	60	MJ	–	–	–
	–	–	–	–	–	–	25	60	MJ	25	60	MJ
3	–	–	–	–	–	–	30	60	MJ	30	60	MJ
	15	100	MN	20	100	MN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	MJ
	20	100	MN	25	100	MN	40	100	MN	–	–	–
	25	100	MN	30	100	MN	50	100	MN	50	100	MN
4	30	150	MR	–	–	–	60	100	MN	60	100	MN
	–	–	–	40	175	MS	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	MR	75	150	MR
	–	–	–	–	–	–	–	–	–	100	150	MR
	40	175	MS	50	175	MS	100	175	MS	–	–	–

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–		20	H	25	H
	25–50	10	J	15	J	25	J	–	–

Optional ranges

	NEMA size	
OL amp range	0 and 1	2
0.4–0.85	C	–
0.8–1.7	D	–
1.6–3.4	E	–
3.2–6.8	F	–
6.5–13.5	G	G
13–27	H	H
25–50	–	J
17–35	–	–
35–70	–	–
65–135	–	–

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Enclosed combination magnetic starters

CR387 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–2, type 1 standard enclosure

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO–1 NC	G
1 NO–2 NC	H
3 NO	J
3 NC	K
4 NO	L[1]
4 NC	M[1]
2 NO–2 NC	N[1]
3 NO–1 NC	P[1]
1 NO–3 NC	R[1]

[1]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16).

Step 6 (digit 14) select monitoring options

Device	Code
None[2]	A

[2]Phase failure relay is not available for CR387 series standard enclosures. If this is required for your application, use CR487 series oversized enclosure.

Step 7 (digit 15) select pushbutton/ selector switch

Pushbutton/selector switch - heavy duty	Code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

Step 8 (digit 16) select pilot device

Pilot light (heavy duty) type	Color — functionality	Code
None		A
LED lights	Red — across coil	1
	Green — across coil	2
	Red — thru NO aux contact	3[3]
	Green — thru NC aux contact	4[3]
	Red — thru NO aux contact and green — thru NC aux contact	5[4]
	Red — across coil and green — thru NC aux contact	6[3]
	Red — across coil and green — thru NC aux contact and unwired amber	7[3]
Push-to-test lights	Red — across coil	R
	Green — across coil	S
	Red — thru NO aux contact	C[3]
	Green — thru NC aux contact	D[3]
	Red — thru NO aux contact and green — thru NC aux contact	E[4]
	Red — across coil and green — thru NC aux contact	V[3]
	Red — across coil and green — thru NC aux contact and unwired amber	Y[3]

[3]Maximum of 3 aux contacts may be added to sizes 0 and 1.
[4]Maximum of 2 aux contacts may be added to sizes 0 and 1. Maximum of 3 aux contacts may be added to sizes 2–4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from step 5 (digit 13), which are for customer/field connections.

Step 9 (digit 17) select control options

Device	Code
None	A

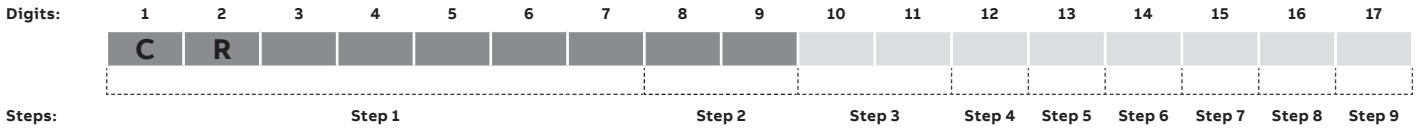
General note:
If selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), control circuit fusing, a control power transformer or 24 V/120 V separate sourced control is required, regardless of protective device rating.

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Enclosed combination magnetic starters

CR487 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1		NEMA type 3R		NEMA type 12		NEMA type 4/4X	
NEMA size	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure	Standard enclosure	Oversized enclosure
0	Use CR387	CR487B5	CR487B6	CR487BR	CR487B2	CR487B7	CR487B4	CR487BS
1	Use CR387	CR487C5	CR487C6	CR487CR	CR487C2	CR487C7	CR487C4	CR487CS
2	Use CR387	CR487D5	CR487D6	CR487DR	CR487D2	CR487D7	CR487D4	CR487DS
3	CR487E1	CR487E5	CR487E6	CR487ER	CR487E2	CR487E7	CR487E4	CR487ES
4	CR487F1	CR487F5	CR487F6	CR487FR	CR487F2	CR487F7	CR487F4	CR487FS

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

[1]24 V coils not available for NEMA size 3 and 4.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.
[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7) table, above.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR487 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device

Instantaneous trip circuit breaker

	208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	0.5	3	MA	0.5	3	MA	1	3	MA	1	3	MA
	1	7	MB	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	3	7	MB	3	7	MB
	3	15	MC	1	7	MB	–	–	–	–	–	–
	–	–	–	3	15	MC	5	15	MC	5	15	MC
1	5	25	ME	5	25	ME	7½	25	ME	10	25	ME
	–	–	–	–	–	–	10	25	ME	–	–	–
	7½	40	MG	7½	40	MG	–	–	–	–	–	–
2	–	–	–	–	–	–	15	40	MG	15	40	MG
	10	60	MJ	10	60	MJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	MG
	–	–	–	15	60	MJ	20	60	MJ	–	–	–
	–	–	–	–	–	–	25	60	MJ	25	60	MJ
3	–	–	–	–	–	–	30	60	MJ	30	60	MJ
	15	100	MN	20	100	MN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	MJ
	20	100	MN	25	100	MN	40	100	MN	–	–	–
	25	100	MN	30	100	MN	50	100	MN	50	100	MN
4	30	150	MR	–	–	–	60	100	MN	60	100	MN
	–	–	–	40	175	MS	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	MR	75	150	MR
	–	–	–	–	–	–	–	–	–	100	150	MR
	40	175	MS	50	175	MS	100	175	MS	–	–	–

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR487 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8 - 1.7	–	–	–	–	¾	D	1	D
	1.6 - 3.4	½	E	¾	E	2	E	2	E
	3.2 - 6.8	1	F	2	F	3	F	5	F
	6.5 - 13.5	3	G	3	G	5	G	–	–
1	6.5 - 13.5	–	–	–	–	7½	G	10	G
	13 - 27	7½	H	7½	H	10	H	–	–
2	13 - 27	–	–	–	–	20	H	25	H
	25 - 50	10	J	15	J	25	J	–	–
3	17 - 35	–	–	–	–	–	–	30	K
	35 - 70	20	L	25	L	50	L	50	L
	65 - 135	25	M	30	M	–	–	–	–
4	65 - 135	40	M	50	M	100	M	100	M

Optional ranges

		NEMA size	
OL amp range	0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F
2 NO–1 NC	G
1 NO–2 NC	H
3 NO	J
3 NC	K
4 NO	L[3]
4 NC	M[3]
2 NO–2 NC	N[3]
3 NO–1 NC	P[3]
1 NO–3 NC	R[3]

[3]Exceeds maximum number of contacts for some pilot light selections. See step 8 (digit 16).

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190-480V (PFR with UV)	C[2]
Phase failure relay with undervoltage protection (panel mounted) — 575V (PFR with UV)	D[2]
Phase failure relay — 208 V (PFR)	E[4,6]
Phase failure relay — 240 V (PFR)	F[4,6]
Phase failure relay — 480 V (PFR)	G[4,6]
Phase failure relay — 575 V (PFR)	H[4,6]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[2,5]
ETM + PFR with UV (190–480 V)	L[2,5,6]
ETM + PFR with UV (575 V)	N[2,5,6]
ETM + PFR (208 V)	P[2,4,5,6]
ETM + PFR (240 V)	Q[2,4,5,6]
ETM + PFR (480 V)	R[2,4,5,6]
ETM + PFR (575 V)	S[2,4,5,6]

[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[4]Available for type 1 enclosure only.
[5]Requires 120 V control circuit voltage or CPT with 120 V secondary.
[6]Requires oversized enclosure for phase failure relay.

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Enclosed combination magnetic starters

CR487 non-reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Start/stop pushbutton	J
Hand-off-auto (HOA) selector switch	L
Off-on selector switch	M
HOA selector switch and start pushbutton	S
Keyed HOA selector switch, key removal center pos.	N

Step 8 (digit 16) select pilot device

Pilot light (heavy duty) type	Color — functionality	Code
None		A
LED lights	Red–across coil	1
	Green–across coil	2
	Red–thru NO aux contact	3[7]
	Green–thru NC aux contact	4[7]
	Red–thru NO aux contact and green–thru NC aux contact	5[8]
	Red–across coil and green–thru NC aux contact	6[7]
	Red–across coil and green–thru NC aux contact and unwired amber	7[7]
Push-to-test lights	Red–across coil	R
	Green–across coil	S
	Red–thru NO aux contact	C[7]
	Green–thru NC aux contact	D[7]
	Red–thru NO aux contact and green–thru NC aux contact	E[8]
	Red–across coil and green–thru NC aux contact	V[7]
	Red–across coil and green–thru NC aux contact and unwired amber	Y[7]

[7]Maximum of 3 aux contacts may be added to sizes 0 and 1.
[8]Maximum of 2 aux contacts may be added to sizes 0 and 1. Maximum of 3 aux contacts may be added to sizes 2–4.
Note: Auxiliary contacts wired as part of pilot light selection are in addition to the auxiliary contacts selected from step 5 (digit 13), which are for customer/field connections.

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[2,9]
2 relays, 24/120 V coil — unwired	C[2,9]
DIN rail — for customer use	D[2]
12 point terminal strip — unwired (12 PT strip)	E[2]
Space heater with NC contact	H[2,10]
1 relay + 12 PT strip	J[2,9]
2 relays + 12 PT strip	K[2,9]
DIN rail + 12 PT strip + space heater	L[2,10]
2 relays + 12 PT strip + space heater	M[2,9,10]
Time delay on relay, 24/120 V coil — unwired (TD)	N[2,9]
Time delay off relay, 24/120 V coil — unwired (TD)	P[2,9]
12 PT strip + TD on	R[2,9]
12 PT strip + TD off	S[2,9]
12 PT strip + space heater + TD on	T[2,9,10]
12 PT strip + space heater + TD off	U[2,9,10]

[2]Requires oversized enclosure for NEMA sizes 0–2. Select proper NEMA size and enclosure type from step 1 (digits 1–7).
[9]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[10]Maximum number of auxiliary contacts shall be reduced by 1.

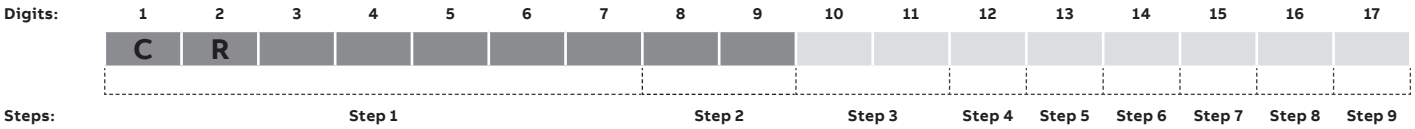
General note:
If selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), control circuit fusing, a control power transformer or 24 V/120 V separate sourced control is required, regardless of protective device rating.

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Enclosed combination magnetic starters

CR410 reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1-7) select NEMA size and enclosure

NEMA size	NEMA type 1 Standard enclosure	NEMA type 3R Standard enclosure	NEMA type 12 Standard enclosure	NEMA type 4 Standard enclosure
0	CR410B1	CR410B6	CR410B2	CR410B4
1	CR410C1	CR410C6	CR410C2	CR410C4
2	CR410D1	CR410D6	CR410D2	CR410D4
3	CR410E1	CR410E6	CR410E2	CR410E4
4	CR410F1	CR410F6	CR410F2	CR410F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR410 reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Thermal-magnetic circuit breaker

	200–208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	2	15	TC	3	15	TC	5	15	TC	5	15	TC
	3	15	TC	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	7½	15	TC
	5	25	TE	5	25	TE	7½	25	TE	–	–	–
	–	–	–	–	–	–	–	–	–	10	25	TE
	7½	40	TG	7½	40	TG	10	25	TE	10	20	TD
2	–	–	–	–	–	–	15	40	TG	15	40	TG
	10	60	TJ	10	60	TJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	TG
	–	–	–	15	60	TJ	20	60	TJ	–	–	–
	–	–	–	–	–	–	25	60	TJ	25	60	TJ
3	–	–	–	–	–	–	30	60	TJ	30	60	TJ
	15	100	TN	20	100	TN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	TJ
	20	100	TN	25	100	TN	40	100	TN	–	–	–
	–	–	–	–	–	–	50	100	TN	50	100	TN
	25	125	TQ	30	125	TQ	–	–	–	–	–	–
4	30	150	TR	–	–	–	60	150	TR	60	150	TR
	–	–	–	40	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	TR	75	150	TR
	40	200	TT	50	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	100	200	TT	100	200	TT

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Enclosed combination magnetic starters

CR410 reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–
3	17–35	–	–	–	–	–	–	30	K
	35–70	20	L	25	L	50	L	50	L
	65–135	25	M	30	M	–	–	–	–
4	65–135	40	M	50	M	100	M	100	M

Optional ranges

	NEMA size		
OL amp range	0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[2]
Phase failure relay — 240 V (PFR)	F[2]
Phase failure relay — 480 V (PFR)	G[2]
Phase failure relay — 575 V (PFR)	H[2]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[3]
ETM + PFR with UV (190–480 V)	L[3]
ETM + PFR with UV (575 V)	N[3]
ETM + PFR (208 V)	P[2,3]
ETM + PFR (240 V)	Q[2,3]
ETM + PFR (480 V)	R[2,3]
ETM + PFR (575 V)	S[2,3]

[2]Available for type 1 enclosure only.
[3]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR410 reversing, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fwd/rev/stop pushbutton	J
Up/down/stop pushbutton	K
Open/CLS/stop pushbutton	L
HOA and fwd-rev selector switch	P
Fwd-off-rev selector switch	T

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[4]
2 relays, 24/120 V coil — unwired	C[4]
DIN rail - for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[5]
1 relay + 12 PT strip	J[4]
2 relays + 12 PT strip	K[4]
DIN rail + 12 PT strip + space heater	L[5]
2 relays + 12 PT strip + space heater	M[4,5]
Time delay on relay, 24/120 V coil — unwired (TD)	N[4]
Time delay off relay, 24/120 V coil — unwired (TD)	P[4]
12 PT strip + TD ON	R[4]
12 PT strip + TD OFF	S[4]
12 PT strip + space heater + TD ON	T[4,5]
12 PT strip + space heater + TD OFF	U[4,5]

[4]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[5]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

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Enclosed combination magnetic starters

CR411 reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1	NEMA type 3R	NEMA type 12	NEMA type 4
NEMA size	Standard enclosure	Standard enclosure	Standard enclosure	Standard enclosure
0	CR411B1	CR411B6	CR411B2	CR411B4
1	CR411C1	CR411C6	CR411C2	CR411C4
2	CR411D1	CR411D6	CR411D2	CR411D4
3	CR411E1	CR411E6	CR411E2	CR411E4
4	CR411F1	CR411F6	CR411F2	CR411F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR411 reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Disconnect without fuse clips

NEMA size	Code
All	1A

Disconnect with class H fuse clips — for use with non-time delay/single element class H fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	HA	3	30	HA	5	30	H3	5	30	H3
1	–	–	–	–	–	–	7½	30	H3	10	30	H3
	7½	60	HB	7½	60	HB	10	60	H6	–	60	H6
2	–	–	–	–	–	–	15	60	H6	20	60	H6
	10	100	HC	15	100	HC	25	100	H1	25	100	H1
3	–	–	–	–	–	–	30	100	H1	30	100	H1
	25	200	HD	30	200	HD	50	200	H2	50	200	H2
4	–	–	–	–	–	–	60	200	H2	60	200	H2
	40	400	HE	50	400	HE	100	400	H4	100	400	H4

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Enclosed combination magnetic starters

CR411 reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device (continued)

Disconnect with class R fuse clips — for use with time delay/dual element class RK1/RK5 fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	RA	3	30	RA	5	30	R3	5	30	R3
1	5	30	RA	5	30	RA	10	30	R3	10	30	R3
	7½	60	RB	7½	60	RB	–	–	–	–	–	–
2		–	–	–	–	–	–	30	R3	15	30	R3
	10	60	RB	15	60	RB	25	60	R6	25	60	R6
3	–	–	–	–	–	–	–	60	R6	30	60	R6
	20	100	RC	25	100	RC	50	100	R1	50	100	R1
	25	200	RD	30	200	RD	–	–	–	–	–	–
4	–	–	–	–	–	–	–	100	R1	60	100	R1
	400	200	RD	50	200	RD	100	200	R2	100	200	R2

Disconnect with class J fuse clips — for use with time delay/dual element class J fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	J3	3	30	J3	5	30	J3	5	30	J3
1	5	30	J3	5	30	J3	10	30	J3	10	30	J3
	7½	60	J6	7½	60	J6	–	–	–	–	–	–
2	–	–	–	–	–	–	–	30	J3	15	30	J3
	10	60	J6	15	60	J6	25	60	J6	25	60	J6
3	–							60	J6	30	60	J6
	20	100	J1	25	100	J1	50	100	J1	50	100	J1
	25	200	J2	30	200	J2	–	–	–	–	–	–
4	–	–	–	–	–	–	–	100	J1	60	100	J1
	40	200	J2	50	200	J2	100	200	J2	100	200	J2

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table at right.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–
3	17–35	–	–	–	–	–	–	30	K
	35–70	20	L	25	L	50	L	50	L
	65–135	25	M	30	M	–	–	–	–
4	65–135	40	M	50	M	100	M	100	M

Optional ranges

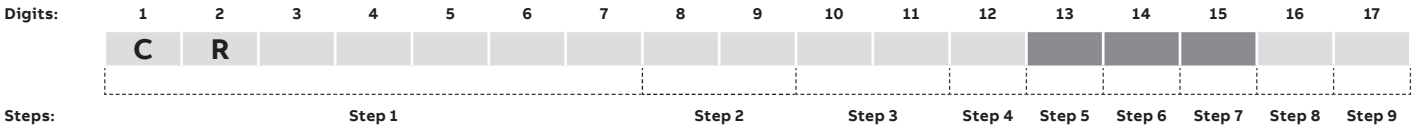
OL amp range	NEMA size 0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

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Enclosed combination magnetic starters

CR411 reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190-480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[2]
Phase failure relay — 240 V (PFR)	F[2]
Phase failure relay — 480 V (PFR)	G[2]
Phase failure relay — 575 V (PFR)	H[2]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[3]
ETM + PFR with UV (190–480 V)	L[3]
ETM + PFR with UV (575 V)	N[3]
ETM + PFR (208 V)	P[2,3]
ETM + PFR (240 V)	Q[2,3]
ETM + PFR (480 V)	R[2,3]
ETM + PFR (575 V)	S[2,3]

[2]Available for type 1 enclosure only.
[3]Requires 120 V control circuit voltage or CPT with 120 V secondary.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fwd/rev/stop pushbutton	J
Up/down/stop pushbutton	K
Open/CLS/stop pushbutton	L
Hand-off-auto and fwd-rev selector switch	P
Fwd-off-rev selector switch	T

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR411 reversing, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2NO-2NC, 24/120 V coil — unwired	B[4]
2 relays, 24/120 V coil — unwired	C[4]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[5]
1 relay + 12 PT strip	J[4]
2 relays + 12 PT strip	K[4]
DIN rail + 12 PT strip + space heater	L[5]
2 relays + 12 PT strip + space heater	M[4,5]
Time delay on relay, 24/120 V coil — unwired (TD)	N[4]
Time delay off relay, 24/120 V coil — unwired (TD)	P[4]
12 PT strip + TD ON	R[4]
12 PT strip + TD OFF	S[4]
12 PT strip + space heater + TD ON	T[4,5]
12 PT strip + space heater + TD OFF	U[4,5]

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR490 reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1	NEMA type 3R	NEMA type 12	NEMA type 4
NEMA size	Standard enclosure	Standard enclosure	Standard enclosure	Standard enclosure
0	CR490B1	CR490B6	CR490B2	CR490B4
1	CR490C1	CR490C6	CR490C2	CR490C4
2	CR490D1	CR490D6	CR490D2	CR490D4
3	CR490E1	CR490E6	CR490E2	CR490E4
4	CR490F1	CR490F6	CR490F2	CR490F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR490 reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Instantaneous trip circuit breaker

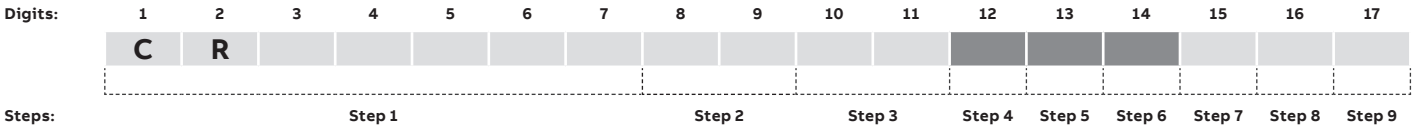
	208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	0.5	3	MA	0.5	3	MA	1	3	MA	1	3	MA
	1	7	MB	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	3	7	MB	3	7	MB
	3	15	MC	1	7	MB	–	–	–	–	–	–
	–	–	–	3	15	MC	5	15	MC	5	15	MC
1	5	25	ME	5	25	ME	7½	25	ME	10	25	ME
	–	–	–	–	–	–	10	25	ME	–	–	–
	7½	40	MG	7½	40	MG	–	–	–	–	–	–
2	–	–	–	–	–	–	15	40	MG	15	40	MG
	10	60	MJ	10	60	MJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	MG
	–	–	–	15	60	MJ	20	60	MJ	–	–	–
	–	–	–	–	–	–	25	60	MJ	25	60	MJ
3	–	–	–	–	–	–	30	60	MJ	30	60	MJ
	15	100	MN	20	100	MN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	MJ
	20	100	MN	25	100	MN	40	100	MN	–	–	–
	25	100	MN	30	100	MN	50	100	MN	50	100	MN
4	30	150	MR	–	–	–	60	100	MN	60	100	MN
	–	–	–	40	175	MS	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	MR	75	150	MR
	–	–	–	–	–	–	–	–	–	100	150	MR
	40	175	MS	50	175	MS	100	175	MS	–	–	–

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Enclosed combination magnetic starters

CR490 reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

Solid state overload relay — standard range

		200–208 V		230–240 V		460–480 V		575–600 V	
NEMA size	OL range	Max. hp	Code	Max. hp	Code	Max. hp	Code	Max. hp	Code
0	0.8–1.7	–	–	–	–	¾	D	1	D
	1.6–3.4	½	E	¾	E	2	E	2	E
	3.2–6.8	1	F	2	F	3	F	5	F
	6.5–13.5	3	G	3	G	5	G	–	–
1	6.5–13.5	–	–	–	–	7½	G	10	G
	13–27	7½	H	7½	H	10	H	–	–
2	13–27	–	–	–	–	20	H	25	H
	25–50	10	J	15	J	25	J	–	–
3	17–35	–	–	–	–	–	–	30	K
	35–70	20	L	25	L	50	L	50	L
	65–135	25	M	30	M	–	–	–	–
4	65–135	40	M	50	M	100	M	100	M

Optional ranges

	NEMA size		
OL amp range	0 and 1	2	3 and 4
0.4–0.85	C	–	–
0.8–1.7	D	–	–
1.6–3.4	E	–	–
3.2–6.8	F	–	–
6.5–13.5	G	G	–
13–27	H	H	–
25–50	–	J	–
17–35	–	–	K
35–70	–	–	L
65–135	–	–	M

Step 5 (digit 13) select auxiliary contacts

Aux contacts	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D
2 NO	E
2 NC	F

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190-480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[2]
Phase failure relay — 240 V (PFR)	F[2]
Phase failure relay — 480 V (PFR)	G[2]
Phase failure relay — 575 V (PFR)	H[2]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[3]
ETM + PFR with UV (190–480 V)	L[3]
ETM + PFR with UV (575 V)	N[3]
ETM + PFR (208 V)	P[2,3]
ETM + PFR (240 V)	Q[2,3]
ETM + PFR (480 V)	R[2,3]
ETM + PFR (575 V)	S[2,3]

[2]Available for type 1 enclosure only.
[3]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR490 reversing, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fwd/rev/stop pushbutton	J
Up/down/stop pushbutton	K
Open/CLS/stop pushbutton	L
Hand-off-auto and fwd-rev selector switch	P
Fwd-off-rev selector switch	T

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[4]
2 relays, 24/120 V coil — unwired	C[4]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[5]
1 relay + 12 PT strip	J[4]
2 relays + 12 PT strip	K[4]
DIN rail + 12 PT strip + space heater	L[5]
2 relays + 12 PT strip + space heater	M[4,5]
Time delay on relay, 24/120 V coil — unwired (TD)	N[4]
Time delay off relay, 24/120 V coil — unwired (TD)	P[4]
12 PT strip + TD ON	R[4]
12 PT strip + TD OFF	S[4]
12 PT strip + space heater + TD ON	T[4,5]
12 PT strip + space heater + TD OFF	U[4,5]

[4]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[5]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
If selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), control circuit fusing, a control power transformer or 24 V/120 V separate sourced control is required, regardless of protective device rating.

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Enclosed combination magnetic starters

CR412 2-speed/1-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1	NEMA type 3R	NEMA type 12	NEMA type 4
NEMA size	Standard enclosure	Standard enclosure	Standard enclosure	Standard enclosure
0	CR412B1	CR412B6	CR412B2	CR412B4
1	CR412C1	CR412C6	CR412C2	CR412C4
2	CR412D1	CR412D6	CR412D2	CR412D4
3	CR412E1	CR412E6	CR412E2	CR412E4
4	CR412F1	CR412F6	CR412F2	CR412F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR412 2-speed/1-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Thermal-magnetic circuit breaker

	200–208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	2	15	TC	3	15	TC	5	15	TC	5	15	TC
	3	15	TC	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	7½	15	TC
	5	25	TE	5	25	TE	7½	25	TE	–	–	–
	–	–	–	–	–	–	–	–	–	10	25	TE
	7½	40	TG	7½	40	TG	10	25	TE	10	20	TD
2	–	–	–	–	–	–	15	40	TG	15	40	TG
	10	60	TJ	10	60	TJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	TG
	–	–	–	15	60	TJ	20	60	TJ	–	–	–
	–	–	–	–	–	–	25	60	TJ	25	60	TJ
3	–	–	–	–	–	–	30	60	TJ	30	60	TJ
	15	100	TN	20	100	TN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	TJ
	20	100	TN	25	100	TN	40	100	TN	–	–	–
	–	–	–	–	–	–	50	100	TN	50	100	TN
	25	125	TQ	30	125	TQ	–	–	–	–	–	–
4	30	150	TR	–	–	–	60	150	TR	60	150	TR
	–	–	–	40	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	TR	75	150	TR
	40	200	TT	50	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	100	200	TT	100	200	TT

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Enclosed combination magnetic starters

CR412 2-speed/1-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

2-speed solid state overload ranges

	NEMA size					
	0 and 1		2		3 and 4	
Code	Hi amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
c	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	–	–	–	–
K	3.2–6.8	1.6–3.4	–	–	–	–
L	3.2–6.8	3.2–6.8	–	–	–	–
M	6.5–13.5	1.6–3.4	–	–	–	–
V	6.5–13.5	3.2–6.8	–	–	–	–
W	6.5–13.5	6.5–13.5	–	–	–	–
R	13–27	3.2–6.8	–	–	–	–
S	13–27	6.5–13.5	–	–	–	–
T	13–27	13–27	–	–	–	–

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed – 1 winding sizes 0–1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190-480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190–480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR412 2-speed/1-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

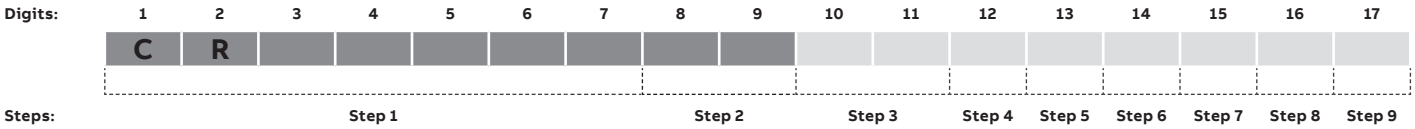
General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

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Enclosed combination magnetic starters

CR413 2-speed/1-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

NEMA size	NEMA type 1 Standard enclosure	NEMA type 3R Standard enclosure	NEMA type 12 Standard enclosure	NEMA type 4 Standard enclosure
0	CR413B1	CR413B6	CR413B2	CR413B4
1	CR413C1	CR413C6	CR413C2	CR413C4
2	CR413D1	CR413D6	CR413D2	CR413D4
3	CR413E1	CR413E6	CR413E2	CR413E4
4	CR413F1	CR413F6	CR413F2	CR413F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR413 2-speed/1-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device

Disconnect without fuse clips

NEMA size	Code
All	1A

Disconnect with class H fuse clips — for use with non-time delay/single element class H fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	HA	3	30	HA	5	30	H3	5	30	H3
1	–	–	–	–	–	–	7½	30	H3	10	30	H3
	7½	60	HB	7½	60	HB	10	60	H6	–	60	H6
2	–	–	–	–	–	–	15	60	H6	20	60	H6
	10	100	HC	15	100	HC	25	100	H1	25	100	H1
3	–	–	–	–	–	–	30	100	H1	30	100	H1
	25	200	HD	30	200	HD	50	200	H2	50	200	H2
4	–	–	–	–	–	–	60	200	H2	60	200	H2
	40	400	HE	50	400	HE	100	400	H4	100	400	H4

Disconnect with class R fuse clips — for use with time delay/dual element class RK1/RK5 fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	RA	3	30	RA	5	30	R3	5	30	R3
1	5	30	RA	5	30	RA	10	30	R3	10	30	R3
	7½	60	RB	7½	60	RB	–	–	–	–	–	–
2		–	–	–	–	–	–	30	R3	15	30	R3
	10	60	RB	15	60	RB	25	60	R6	25	60	R6
3	–	–	–	–	–	–	–	60	R6	30	60	R6
	20	100	RC	25	100	RC	50	100	R1	50	100	R1
	25	200	RD	30	200	RD	–	–	–	–	–	–
4	–	–	–	–	–	–	–	100	R1	60	100	R1
	400	200	RD	50	200	RD	100	200	R2	100	200	R2

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR413 2-speed/1-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device (continued)

Disconnect with class J fuse clips — for use with time delay/dual element class J fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	J3	3	30	J3	5	30	J3	5	30	J3
1	5	30	J3	5	30	J3	10	30	J3	10	30	J3
	7½	60	J6	7½	60	J6	–	–	–	–	–	–
2	–	–	–	–	–	–	–	30	J3	15	30	J3
	10	60	J6	15	60	J6	25	60	J6	25	60	J6
3	–							60	J6	30	60	J6
	20	100	J1	25	100	J1	50	100	J1	50	100	J1
4	25	200	J2	30	200	J2	–	–	–	–	–	–
	–	–	–	–	–	–	–	100	J1	60	100	J1
	40	200	J2	50	200	J2	100	200	J2	100	200	J2

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from standard or optional ranges table below.

2-speed solid state overload ranges

					NEMA size	
	0 and 1		2		3 and 4	
Code	Hi amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
C	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	–	–	–	–
K	3.2–6.8	1.6–3.4	–	–	–	–
L	3.2–6.8	3.2–6.8	–	–	–	–
M	6.5–13.5	1.6–3.4	–	–	–	–
V	6.5–13.5	3.2–6.8	–	–	–	–
W	6.5–13.5	6.5–13.5	–	–	–	–
R	13–27	3.2–6.8	–	–	–	–
S	13–27	6.5–13.5	–	–	–	–
T	13–27	13–27	–	–	–	–

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Enclosed combination magnetic starters

CR413 2-speed/1-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed — 1 winding sizes 0–1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190–480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR413 2-speed/1-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR492 2-speed/1-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1	NEMA type 3R	NEMA type 12	NEMA type 4
NEMA size	Standard enclosure	Standard enclosure	Standard enclosure	Standard enclosure
0	CR492B1	CR492B6	CR492B2	CR492B4
1	CR492C1	CR492C6	CR492C2	CR492C4
2	CR492D1	CR492D6	CR492D2	CR492D4
3	CR492E1	CR492E6	CR492E2	CR492E4
4	CR492F1	CR492F6	CR492F2	CR492F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR492 2-speed/1-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Instantaneous trip circuit breaker

	208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	0.5	3	MA	0.5	3	MA	1	3	MA	1	3	MA
	1	7	MB	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	3	7	MB	3	7	MB
	3	15	MC	1	7	MB	–	–	–	–	–	–
	–	–	–	3	15	MC	5	15	MC	5	15	MC
1	5	25	ME	5	25	ME	7½	25	ME	10	25	ME
	–	–	–	–	–	–	10	25	ME	–	–	–
	7½	40	MG	7½	40	MG	–	–	–	–	–	–
2	–	–	–	–	–	–	15	40	MG	15	40	MG
	10	60	MJ	10	60	MJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	MG
	–	–	–	15	60	MJ	20	60	MJ	–	–	–
	–	–	–	–	–	–	25	60	MJ	25	60	MJ
3	–	–	–	–	–	–	30	60	MJ	30	60	MJ
	15	100	MN	20	100	MN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	MJ
	20	100	MN	25	100	MN	40	100	MN	–	–	–
	25	100	MN	30	100	MN	50	100	MN	50	100	MN
4	30	150	MR	–	–	–	60	100	MN	60	100	MN
	–	–	–	40	175	MS	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	MR	75	150	MR
	–	–	–	–	–	–	–	–	–	100	150	MR
	40	175	MS	50	175	MS	100	175	MS	–	–	–

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Enclosed combination magnetic starters

CR492 2-speed/1-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from ranges table below.

2-speed solid state overload ranges

					NEMA size	
		0 and 1		2		3 and 4
Code	Hi Amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
c	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	–	–	–	–
K	3.2–6.8	1.6–3.4	–	–	–	–
L	3.2–6.8	3.2–6.8	–	–	–	–
M	6.5–13.5	1.6–3.4	–	–	–	–
V	6.5–13.5	3.2–6.8	–	–	–	–
W	6.5–13.5	6.5–13.5	–	–	–	–
R	13–27	3.2–6.8	–	–	–	–
S	13–27	6.5–13.5	–	–	–	–
T	13–27	13–27	–	–	–	–

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed – 1 winding sizes 0-1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190-480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190-480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR492 2-speed/1-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
If selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), control circuit fusing, a control power transformer or 24 V/120 V separate sourced control is required, regardless of protective device rating.

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Enclosed combination magnetic starters

CR414 2-speed/2-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

NEMA size	NEMA type 1 Standard enclosure	NEMA type 3R Standard enclosure	NEMA type 12 Standard enclosure	NEMA type 4 Standard enclosure
0	CR414B1	CR414B6	CR414B2	CR414B4
1	CR414C1	CR414C6	CR414C2	CR414C4
2	CR414D1	CR414D6	CR414D2	CR414D4
3	CR414E1	CR414E6	CR414E2	CR414E4
4	CR414F1	CR414F6	CR414F2	CR414F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR414 2-speed/2-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Thermal-magnetic circuit breaker

	200–208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	2	15	TC	3	15	TC	5	15	TC	5	15	TC
	3	15	TC	–	–	–	–	–	–	–	–	–
1	–	–	–	–	–	–	–	–	–	7½	15	TC
	5	25	TE	5	25	TE	7½	25	TE	–	–	–
	–	–	–	–	–	–	–	–	–	10	25	TE
	7½	40	TG	7½	40	TG	10	25	TE	10	20	TD
2	–	–	–	–	–	–	15	40	TG	15	40	TG
	10	60	TJ	10	60	TJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	TG
	–	–	–	15	60	TJ	20	60	TJ	–	–	–
	–	–	–	–	–	–	25	60	TJ	25	60	TJ
3	–	–	–	–	–	–	30	60	TJ	30	60	TJ
	15	100	TN	20	100	TN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	TJ
	20	100	TN	25	100	TN	40	100	TN	–	–	–
	–	–	–	–	–	–	50	100	TN	50	100	TN
	25	125	TQ	30	125	TQ	–	–	–	–	–	–
4	30	150	TR	–	–	–	60	150	TR	60	150	TR
	–	–	–	40	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	TR	75	150	TR
	40	200	TT	50	200	TT	–	–	–	–	–	–
	–	–	–	–	–	–	100	200	TT	100	200	TT

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Enclosed combination magnetic starters

CR414 2-speed/2-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from ranges table below.

2-speed solid state overload ranges

					NEMA size	
	0 and 1		2		3 and 4	
Code	Hi amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
C	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	–	–	–	–
K	3.2–6.8	1.6–3.4	–	–	–	–
L	3.2–6.8	3.2–6.8	–	–	–	–
M	6.5–13.5	1.6–3.4	–	–	–	–
V	6.5–13.5	3.2–6.8	–	–	–	–
W	6.5–13.5	6.5–13.5	–	–	–	–
R	13–27	3.2–6.8	–	–	–	–
S	13–27	6.5–13.5	–	–	–	–
T	13–27	13–27	–	–	–	–

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed — 2 winding sizes 0-1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190–480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR414 2-speed/2-winding, thermal magnetic circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO–2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

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Enclosed combination magnetic starters

CR415 2-speed/2-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

NEMA size	NEMA type 1 Standard enclosure	NEMA type 3R Standard enclosure	NEMA type 12 Standard enclosure	NEMA type 4 Standard enclosure
0	CR415B1	CR415B6	CR415B2	CR415B4
1	CR415C1	CR415C6	CR415C2	CR415C4
2	CR415D1	CR415D6	CR415D2	CR415D4
3	CR415E1	CR415E6	CR415E2	CR415E4
4	CR415F1	CR415F6	CR415F2	CR415F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR415 2-speed/2-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Disconnect without fuse clips

NEMA size	Code
All	1A

Disconnect with class H fuse clips — for use with non-time delay/single element class H fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	HA	3	30	HA	5	30	H3	5	30	H3
1	–	–	–	–	–	–	7½	30	H3	10	30	H3
	7½	60	HB	7½	60	HB	10	60	H6	–	60	H6
2	–	–	–	–	–	–	15	60	H6	20	60	H6
	10	100	HC	15	100	HC	25	100	H1	25	100	H1
3	–	–	–	–	–	–	30	100	H1	30	100	H1
	25	200	HD	30	200	HD	50	200	H2	50	200	H2
4	–	–	–	–	–	–	60	200	H2	60	200	H2
	40	400	HE	50	400	HE	100	400	H4	100	400	H4

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Enclosed combination magnetic starters

CR415 2-speed/2-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 3 (digits 10, 11) select protective device (continued)

Disconnect with class R fuse clips — for use with time delay/dual element class RK1/RK5 fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	RA	3	30	RA	5	30	R3	5	30	R3
1	5	30	RA	5	30	RA	10	30	R3	10	30	R3
	7½	60	RB	7½	60	RB	–	–	–	–	–	–
2		–	–	–	–	–	–	30	R3	15	30	R3
	10	60	RB	15	60	RB	25	60	R6	25	60	R6
3	–	–	–	–	–	–	–	60	R6	30	60	R6
	20	100	RC	25	100	RC	50	100	R1	50	100	R1
	25	200	RD	30	200	RD	–	–	–	–	–	–
4	–	–	–	–	–	–	–	100	R1	60	100	R1
	400	200	RD	50	200	RD	100	200	R2	100	200	R2

Disconnect with class J fuse clips — for use with time delay/dual element class J fuses

	200–208 V			230–240 V			460–480 V			575–600 V		
NEMA size	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code	Max. hp	Fuse clip (amps)	Code
0	3	30	J3	3	30	J3	5	30	J3	5	30	J3
1	5	30	J3	5	30	J3	10	30	J3	10	30	J3
	7½	60	J6	7½	60	J6	–	–	–	–	–	–
2	–	–	–	–	–	–	–	30	J3	15	30	J3
	10	60	J6	15	60	J6	25	60	J6	25	60	J6
3	–							60	J6	30	60	J6
	20	100	J1	25	100	J1	50	100	J1	50	100	J1
4	25	200	J2	30	200	J2	–	–	–	–	–	–
	–	–	–	–	–	–	–	100	J1	60	100	J1
	40	200	J2	50	200	J2	100	200	J2	100	200	J2

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient Compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from ranges table on following page.

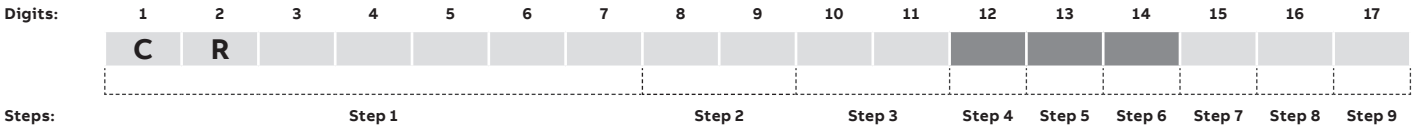
Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR415 2-speed/2-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) 2-speed solid state overload ranges (continued)

	NEMA size					
	0 and 1		2		3 and 4	
Code	Hi amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
C	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	-	-	-	-
K	3.2–6.8	1.6–3.4	-	-	-	-
L	3.2–6.8	3.2–6.8	-	-	-	-
M	6.5–13.5	1.6–3.4	-	-	-	-
V	6.5–13.5	3.2–6.8	-	-	-	-
W	6.5–13.5	6.5–13.5	-	-	-	-
R	13–27	3.2–6.8	-	-	-	-
S	13–27	6.5–13.5	-	-	-	-
T	13–27	13–27	-	-	-	-

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed — 2 winding sizes 0–1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190–480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR415 2-speed/2-winding, disconnect switch

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO–2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
On NEMA size 3 and 4 starters, if selecting factory installed and wired operator devices (pushbuttons, selector switches and/or pilot lights), then control circuit fusing, a control power transformer or 120 V separate sourced control is required when the protective device is rated greater than 100 amps.

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Enclosed combination magnetic starters

CR494 2-speed/2-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–7) select NEMA size and enclosure

	NEMA type 1	NEMA type 3R	NEMA type 12	NEMA type 4
NEMA size	Standard enclosure	Standard enclosure	Standard enclosure	Standard enclosure
0	CR494B1	CR494B6	CR494B2	CR494B4
1	CR494C1	CR494C6	CR494C2	CR494C4
2	CR494D1	CR494D6	CR494D2	CR494D4
3	CR494E1	CR494E6	CR494E2	CR494E4
4	CR494F1	CR494F6	CR494F2	CR494F4

Note: All enclosures include external overload reset buttons. NEMA 4 enclosures are stainless steel.

Step 2 (digits 8, 9) select control voltage (no CPT and standard size CPT)

Control circuit voltage and CPT	No CPT	Control fuses, no CPT	Standard size CPT
120 V with surge protector (SP)	01	F1	–
120 V	02	F2	–
240 V	03	F3	–
480 V	04	F4	–
600 V	05	F5	–
208 V	08	F8	–
24 V[1]	09	–	–
240 V/120 V with CPT	–	–	93
480 V/120 V with CPT	–	–	94
600 V/120 V with CPT	–	–	95
208 V/120 V with CPT	–	–	98
240 V/120 V with CPT and SP	–	–	33
480 V/120 V with CPT and SP	–	–	34
600 V/120 V with CPT and SP	–	–	35
208 V/120 V with CPT and SP	–	–	38
240 V/24 V with CPT[1]	–	–	S3
480 V/24 V with CPT[1]	–	–	S4
600 V/24 V with CPT[1]	–	–	S5
208 V/24 V with CPT[1]	–	–	S8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Enclosed combination magnetic starters

CR494 2-speed/2-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 2 (digits 8, 9) select control voltage (extra capacity CPT + 100 VA and 200 VA) (continued)

Control circuit voltage and CPT	Standard size CPT + 100 VA	Standard size CPT + 200 VA
120 V with surge protector (SP)	–	–
120 V	–	–
240 V	–	–
480 V	–	–
600 V	–	–
208 V	–	–
24 V[1]	–	–
240 V/120 V with CPT	13	23
480 V/120 V with CPT	14	24
600 V/120 V with CPT	15	25
208 V/120 V with CPT	18	28
240 V/120 V with CPT and SP	53	63
480 V/120 V with CPT and SP	54	64
600 V/120 V with CPT and SP	55	65
208 V/120 V with CPT and SP	58	68
240 V/24 V with CPT[1]	A3	B3
480 V/24 V with CPT[1]	A4	B4
600 V/24 V with CPT[1]	A5	B5
208 V/24 V with CPT[1]	A8	B8

Note: CPT includes 2 primary fuses and 1 secondary fuse.
[1]24 V coils not available for NEMA size 3 and 4.

Step 3 (digits 10, 11) select protective device

Instantaneous trip circuit breaker

	208 V			240 V			480 V			600 V		
NEMA size	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code	Max. hp	CB rating (amps)	Code
0	0.5	3	MA	0.5	3	MA	1	3	MA	1	3	MA
	1	7	MB	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	3	7	MB	3	7	MB
	3	15	MC	1	7	MB	–	–	–	–	–	–
	–	–	–	3	15	MC	5	15	MC	5	15	MC
1	5	25	ME	5	25	ME	7½	25	ME	10	25	ME
	–	–	–	–	–	–	10	25	ME	–	–	–
	7½	40	MG	7½	40	MG	–	–	–	–	–	–
2	–	–	–	–	–	–	15	40	MG	15	40	MG
	10	60	MJ	10	60	MJ	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	20	40	MG
	–	–	–	15	60	MJ	20	60	MJ	–	–	–
	–	–	–	–	–	–	25	60	MJ	25	60	MJ
3	–	–	–	–	–	–	30	60	MJ	30	60	MJ
	15	100	MN	20	100	MN	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	40	60	MJ
	20	100	MN	25	100	MN	40	100	MN	–	–	–
	25	100	MN	30	100	MN	50	100	MN	50	100	MN
4	30	150	MR	–	–	–	60	100	MN	60	100	MN
	–	–	–	40	175	MS	–	–	–	–	–	–
	–	–	–	–	–	–	75	150	MR	75	150	MR
	–	–	–	–	–	–	–	–	–	100	150	MR
	40	175	MS	50	175	MS	100	175	MS	–	–	–

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Enclosed combination magnetic starters

CR494 2-speed/2-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 4 (digit 12) select overload relay

Overload relay	Code
Thermal bi-metallic ambient compensated (1 NC)	3
Thermal bi-metallic ambient compensated (1 NO–1 NC)	4
Solid state overload (1 NO–1 NC)	(#)

(#) Select code for solid state overload amp rating from ranges table below.

2-speed solid state overload ranges

					NEMA size	
	0 and 1		2		3 and 4	
Code	Hi amp	Lo amp	Hi amp	Lo amp	Hi amp	Lo amp
c	0.4–0.85	0.4–0.85	6.5–13.5	6.5–13.5	17–35	17–35
D	0.8–1.7	0.4–0.85	13–27	6.5–13.5	35–70	17–35
E	0.8–1.7	0.8–1.7	13–27	13–27	35–70	35–70
F	1.6–3.4	0.4–0.85	25–50	6.5 -13.5	65–135	17–35
G	1.6–3.4	0.8–1.7	25–50	13–27	65–135	35–70
H	1.6–3.4	1.6–3.4	25–50	25–50	65–135	65–135
U	3.2–6.8	0.8–1.7	–	–	–	–
K	3.2–6.8	1.6–3.4	–	–	–	–
L	3.2–6.8	3.2–6.8	–	–	–	–
M	6.5–13.5	1.6–3.4	–	–	–	–
V	6.5–13.5	3.2–6.8	–	–	–	–
W	6.5–13.5	6.5–13.5	–	–	–	–
R	13–27	3.2–6.8	–	–	–	–
S	13–27	6.5–13.5	–	–	–	–
T	13–27	13–27	–	–	–	–

Step 5 (digit 13) select auxiliary contacts

Auxiliary contacts (per contactor)	Code
None	A
1 NO	B
1 NC	C
1 NO–1 NC	D[2]
2 NO	E[2]
2 NC	F[2]

[2]Not available on 2 speed – 2 winding sizes 0-1.

Step 6 (digit 14) select monitoring options

Device	Code
None	A
Phase failure relay with undervoltage protection (panel mounted) — 190–480 V (PFR with UV)	C
Phase failure relay with undervoltage protection (panel mounted) — 575 V (PFR with UV)	D
Phase failure relay — 208 V (PFR)	E[3]
Phase failure relay — 240 V (PFR)	F[3]
Phase failure relay — 480 V (PFR)	G[3]
Phase failure relay — 575 V (PFR)	H[3]
Elapsed time meter (120 V/60 Hz) wired across coil (ETM)	1[4]
ETM + PFR with UV (190–480 V)	L[4]
ETM + PFR with UV (575 V)	N[4]
ETM + PFR (208 V)	P[3,4]
ETM + PFR (240 V)	Q[3,4]
ETM + PFR (480 V)	R[3,4]
ETM + PFR (575 V)	S[3,4]

[3]Available for type 1 enclosure only.
[4]Requires 120 V control circuit voltage or CPT with 120 V secondary.

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Enclosed combination magnetic starters

CR494 2-speed/2-winding, instantaneous trip circuit breaker

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1							Step 2		Step 3		Step 4	Step 5	Step 6	Step 7	Step 8	Step 9

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 7 (digit 15) select pushbutton/selector switch

Pushbutton/selector switch — heavy duty	Code
None	A
Fast/slow/stop pushbutton	J
High/low/off pushbutton	K
High/low pushbutton and hand-off-auto (HOA) selector switch	L
Fast/slow pushbutton and hand-off-auto (HOA) selector switch	M
Hand-off-auto (HOA) and slow/fast selector switches	P
Hand-off-auto (HOA) and low/high selector switches	R
Slow-off-fast selector switch	T
Low-off-high selector switch	U
Fast-slow-off-auto selector switch	V
High-low-off-auto selector switch	W

Step 8 (digit 16) select pilot device

Pilot light (heavy duty CR104P style) type	Color — functionality	Code
None		A
LED lights	Red and amber across coils	2
	Red and green across coils	3
	Red and amber across coils and unwired green	5
Push-to-test lights	Red and amber across coils	S
	Red and green across coils	T
	Red and amber across coils and unwired green	Y

Step 9 (digit 17) select control options

Device	Code
None	A
1 relay, 2 NO-2 NC, 24/120 V coil — unwired	B[5]
2 relays, 24/120 V coil — unwired	C[5]
DIN rail — for customer use	D
12 point terminal strip — unwired (12 PT strip)	E
Space heater with NC contact	H[6]
1 relay + 12 PT strip	J[5]
2 relays + 12 PT strip	K[5]
DIN rail + 12 PT strip + space heater	L[6]
2 relays + 12 PT strip + space heater	M[5,6]
Time delay on relay, 24/120 V coil — unwired (TD)	N[5]
Time delay off relay, 24/120 V coil — unwired (TD)	P[5]
12 PT strip + TD ON	R[5]
12 PT strip + TD OFF	S[5]
12 PT strip + space heater + TD ON	T[5,6]
12 PT strip + space heater + TD OFF	U[5,6]

[5]Relay/timer coil voltage is equivalent to CPT secondary voltage. Requires minimum 100 extra VA CPT option.
[6]Maximum number of auxiliary contacts shall be reduced by 1.

General note:
If selecting factory installed and wired operator devices ((pushbuttons, selector switches and/or pilot lights), control circuit fusing, a control power transformer or 24 V/120 V separate sourced control is required, regardless of protective device rating.

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Field-installed starter modification kits

Auxiliary contacts

NEMA sizes 0–6



CR305X100A

Auxiliary contacts can add to the versatility of magnetic starters by providing additional control circuits to do a variety of jobs without adding to the width of the starter.

Kits make it easy to add contacts to control accessory equipment such as indicating lights; to control sequencing of other motor starters; and in conjunction with a standard reversing starter and plugging switch, to plug-stop motors. Auxiliary contacts can be added to all across-the-line magnetic starters, combination magnetic starters, reversing and multi-speed starters.

Each auxiliary contact is rated 10 amperes AC, resistive load, NEMA “A600,” and is suitable for either right or left side mounting. An insulating shield is also provided between each auxiliary contact unit and the starter. Auxiliary contacts are furnished in the basic block design or as an adder block.

Each contact is marked NO or NC on the block and is not convertible.

Logic reed contacts suitable for low energy level circuits are also available. These are designed for applications on low-voltage control circuits (24 volts and below), such as inputs to computers and programmable starters.

Ordering code selection instructions

1. Order by quantity and complete ordering code.
   Example: Three CR305X300A

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed starter modification kits

Auxiliary contacts

For 300-line starters

Auxiliary contact kits — basic blocks

NEMA size	Contact configuration	Block design	Ordering code
0, 1	1 NO	Basic	CR305X100A
0, 1	1 NC	Basic	CR305X100B
0, 1	1 NO–1 NC	Basic	CR305X100C
2	1 NO	Basic	CR305X200A
2	1 NC	Basic	CR305X200B
2	1 NO–1 NC	Basic	CR305X200C
3, 4	1 NO	Basic	CR305X300A
3, 4	1 NC	Basic	CR305X300B
3, 4	1 NO–1 NC	Basic	CR305X300C
5, 6	1 NO	Basic	CR305X500A
5, 6	1 NC	Basic	CR305X500B
5, 6	1 NO–1 NC	Basic	CR305X500C

Auxiliary contact kits — adder blocks

NEMA size	Contact configuration	Block design	Ordering code
0–6	1 NO	Adder	CR305X100D[1]

Logic reed switch auxiliary contacts[2]

NEMA size	Contact configuration	Ordering code
00, 0, 1	1 NO–0 NC	CR305X100RA
00, 0, 1	0 NO–1 NC	CR305X100RB
00, 0, 1	1 NO–1 NC	CR305X100RC
2	1 NO–0 NC	CR305X200RA
2	0 NO–1 NC	CR305X200RB
2	1 NO–1 NC	CR305X200RC
3, 4	1 NO–0 NC	CR305X300RA
3, 4	0 NO–1 NC	CR305X300RB
3, 4	1 NO–1 NC	CR305X300RC
5, 6	1 NO–0 NC	CR305X500RA
5, 6	0 NO–1 NC	CR305X500RB
5, 6	1 NO–1 NC	CR305X500RC

Contact ratings — basic blocks

High fidelity contact basic block

120 V AC maximum 0.15 A maximum, 8 VA maximum resistive.
30 V DC maximum 0.15 A maximum, 4.5 VA maximum resistive.

Standard block

AC volts	Continuous current amperes	Inrush current amperes
115	6.0	60
230	3.0	30
460	1.5	15
575	1.2	12

Standard block

DC volts	Continuous current amperes	Inrush current amperes
125	1.1	–
250	0.5	–
–	–	–
–	–	–

[1]First adder block must be mounted to a basic block. A second adder block can be added to the first adder block on size 2 through size 9 starters.
Four extra auxiliary contacts (not blocks) is the maximum that can be added to either a NEMA size 0 or 1 starter while five is the maximum extra auxiliary contacts that can be added to NEMA size 2 through 6 devices.
[2]CR305X logic reed switch auxiliary contacts may be ordered as a factory-installed modification. Order by description.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed starter modification kits

Surge suppression and control circuit fuses

NEMA sizes 00–6



CR305X146C

Surge suppression kit

NEMA size	Ordering code
0–6	CR305X146C

Control circuit fuse kits

NEMA size	No. of fuses	Fuse type	Ordering code
00–1	1	KTK	CR305X141A
00–1	2	KTK	CR305X141B
2	1	KTK	CR305X241A
2	2	KTK	CR305X241B
3, 4	1	KTK	CR305X341A
3, 4	2	KTK	CR305X341B
5, 6	1	KTK	CR305X541A
5, 6	2	KTK	CR305X541B
00–1	1	KTK-R	CR305X141C
00–1	2	KTK-R	CR305X141D
2	1	KTK-R	CR305X241C
2	2	KTK-R	CR305X241D
3, 4	1	KTK-R	CR305X341C
3, 4	2	KTK-R	CR305X341D
5, 6	1	KTK-R	CR305X541C
5, 6	2	KTK-R	CR305X541D

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed starter modification kits

Combination starter transformers



CR305X146C

Standard capacity

VA capacity	NEMA size	Ordering code
50	0, 1	CR308XT1**A
100	2	CR308XT2**A
250	3	CR308XT3**A
250	4	CR308XT4**A
–	5	CR308XT5**A[1]

Extra capacity (100 watts)

VA capacity	NEMA size	Ordering code
150	0, 1	CR308XT1**B
150	2	CR308XT2**B
300	3	CR308XT3**B
300	4	CR308XT4**B
–	5	CR308XT5**B[2]

**Voltage and frequency suffixes (60 Hz)

Suffix	
04	220–230–240/440–460–480-volt dual primary reconnectable, 110–115–120 volt secondary
05	550–575–600-volt primary, 110–115–120 volt secondary
23	200–208-volt primary, 115–120 volt secondary

[1]Consists of a 50 VA transformer and a relay. Use primary voltage for starter/contactor coil.
[2]Consists of a 150 VA transformer and a relay. Use primary voltage for starter/contactor coil.
Contact nearest ABB Representative for additional information.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed starter modification kits

Control amplifier and space heater



CR305X702B

Control amplifier

Operation type	NEMA size	Ordering code
Non-reversing	00, 0, and 1	CR305X112A
Non-reversing	2	CR305X212A
Non-reversing	3 and 4	CR305X312A
Reversing	00, 0, 1, 2, 3 and 4	CR305X112P[1]

Space heater kits

NEMA size	Operating voltage	Ordering code
0–1	115	CR305X701D[2]
0–1	230	CR305X701A
0–1	460	CR305X701B
0–1	600	CR305X701C
2, 3, 4	115	CR305X702D
2, 3, 4	230	CR305X702A
2, 3, 4	460	CR305X702B
2, 3, 4	600	CR305X702C
5, 6	115	CR305X705D[2]
5, 6	230	CR305X705A
5, 6	460	CR305X705B
5, 6	600	CR305X705C

[1]A quantity of two panel mount CR305X112P is required for use with reversing starters.
[2]If connected to control circuit transformer, 115-volt heater requires an extra-capacity transformer.
Contact nearest ABB Representative for additional information.

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Field-installed starter modification kits

Mechanical interlocks

Mechanical interlock kits

NEMA size	Mounting position	Baseplate	Ordering code
0–1	Horizontal	No	CR309X100B
2	Horizontal	No	CR309X200D
3–4	Horizontal	No	CR309X300B
5	Horizontal	Yes	CR309X501K
0–1	Vertical	Yes	CR309X102B
2	Vertical	Yes	CR309X202B
3–4	Vertical	Yes	CR309X302B

Please reference the NEMA full voltage power devices catalog for additional technical data, selection and installation guides, and dimensional drawings.

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Plug and play enclosed starters

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Plug and play enclosed starters

Product overview

Description

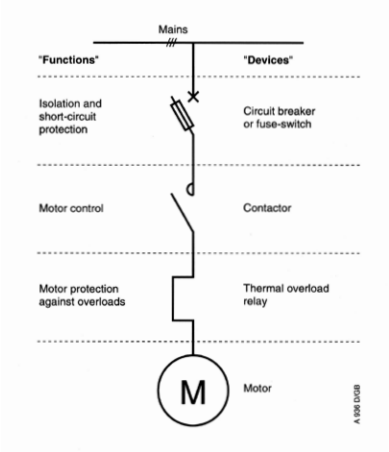
- Across the line (D.O.L.) and 2-speed starters
- Maximum UL/cUL horsepower ratings 5 HP to 100 HP max
- NEMA size rated 00 to 4
- Maximum voltage 600 V AC
- Non-combination and combination types available
- Compact, space-saving design
- Pre-wired pilot device and control transformer kits allow for quick and easy field modification and installation
- Captive terminal screws
- Touch safe design: All connection terminals are protected against accidental touch
- External connections: all starters include necessary terminal blocks and wiring to control the starter by an external maintained contact when used with the appropriate pilot device kit

Enclosure types

- Metal: Type 1, 4/12, 4X stainless steel type 304 # 4

Overload relay protection

- All HP rated starters should use a class 10 adjustable overload relay
- All NEMA rated starters should use a class 10/20/30 adjustable electronic overload relay
- Generally, applications where NEMA-rated starters are required, customers would normally select the class 20 trip setting, however each application is different

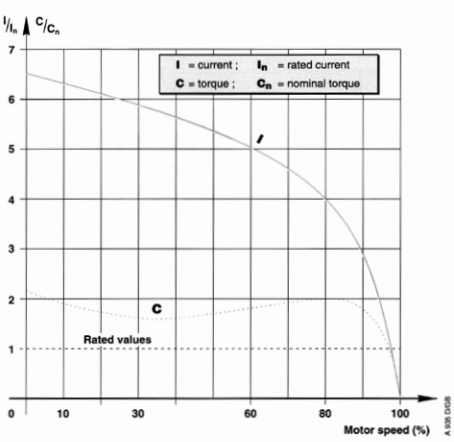


General information

The extensive requirements for group motor circuits are:

- Isolation and short-circuit protection
- Motor control: Starting and stopping
- Motor protection against overloads

Those functions are presented in this section; the motor control and motor protection against overloads (See drawing below).



The isolation and short-circuit protection can be provided by disconnect switches: OS/OT range or by Tmax® XT circuit breakers.
Use the recommended fuses.
For detailed information, please refer to coordination tables available on request.
The control is provided by the contactor of the starter and the protection against overloads by the associated overload relay.
As the supply circuit is normally rated for the motor full load current (FLC), the O/L relay protects both motor and supply circuit against overloads.
High starting torque, simple and low-price direct motor starting with full voltage (so-called “direct-on-line” or D.O.L.) is the most common way of starting a motor.
Starting torque and current depend on the motor type.
Starting torque is roughly equal to 1.9 to 2.1 times the motor’s full speed value and starting current 5.5 to 7 times the motor FLC value. Quick to reach the full speed due to its high starting torque, the D.O.L. starter requires a strong power supply to handle this high inrush current.

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Plug and play enclosed starters

ProS plug and play installation example

A. Install and secure your ProS base unit
B. Add overload relay
C. Install control transformer kit if required (pictures 1, 2)
D. Install pilot device kit if required (pictures 3, 4)
E. Close the cover

01



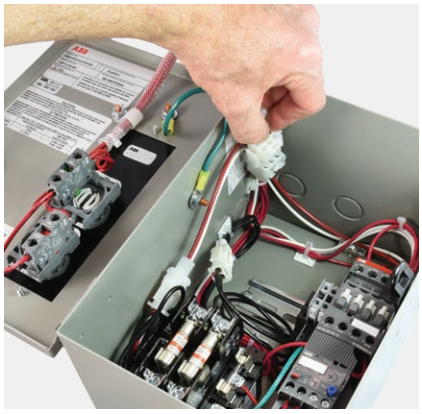
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03



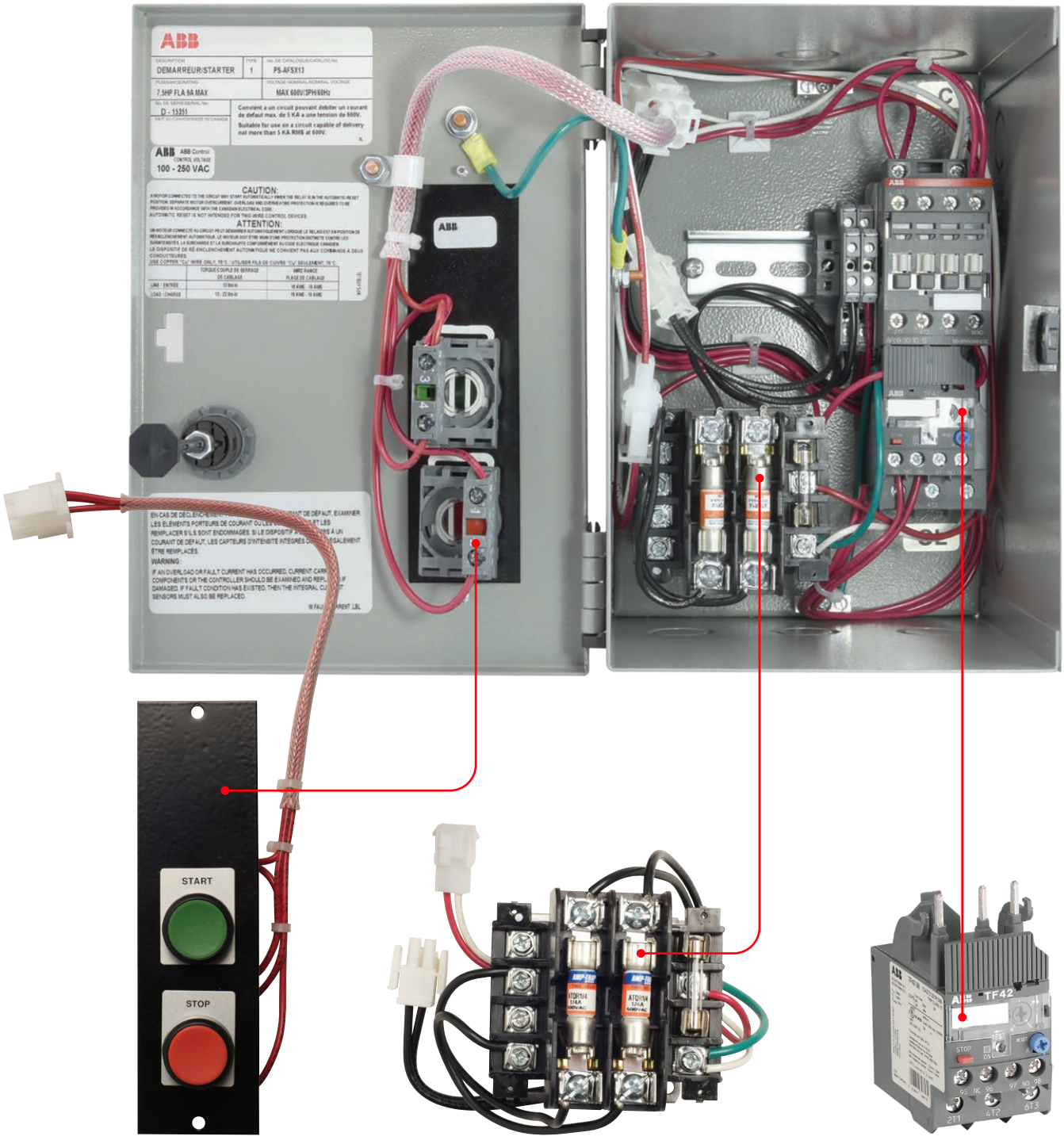
04



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Plug and play enclosed starters

ProS plug and play installation example



Pilot device kits

- Pre-wired, ready to operate
- One, two or three modules
- Push buttons, pilot lights and selector switches

Transformer kits

- Fused on primary and secondary
- Primary voltage 120/208/240/347/416/480/600 V
- Secondary voltage 24–120 V
- Pre-wired and ready to install

O/L relay

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Plug and play enclosed starters

ProS plug and play ordering nomenclature

PSN	AF	S	X	1	1

Starter style

PS =	HP Rated
PSN =	NEMA Rated

Contactor size

AF =	AF09 or AF09N00
0F =	AF16 or AF12N0
1F =	AF30 or AF26N1
2F =	AF52 or AF40N2
3F =	AF80 or AF80N3
4F =	AF140 or AF140N4

Starter type

S =	Across the line D.O.L
C =	Contactor
R =	Reversing
K =	Reversing contactor
T =	2 speeds - 2 windings
A =	Single phase (120 V / 1 pole)
V =	2 speeds - 1 winding
B =	Single phase (208–240 V / 2 poles)

(D.O.L. starter “S” can be converted into single-phase starters “A” or “B” with additional parts).

Combination

X =	Not
B =	Breaker MCP (all starters)
N =	Non-fusible disc. SW
M =	Breaker MCCB (all contactors)
F =	Fusible disc. SW
L =	Fusible disc. SW (NEMA at 480 and 600 V only) for NEMA 1/2/3 sizes

Enclosure type

1 =	Type 1
4 =	Type 4/12
X =	Type 4X (stainless steel type 304 # 4)

Coil voltage

1 =	24–60 V
2 =	48–130 V
3 =	100–250 V
4 =	250–500 V

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Plug and play enclosed starters

Enclosed contactors



Amp rated, 3-pole contactors

		Type 1	Type 4/12	Type 4X
General-purpose current	Contactor size	Ordering code	Ordering code	Ordering code
25	AF09	PS-AFCX13	PS-AFCX43	PS-AFCXX3
30	AF16	PS-0FCX13	PS-0FCX43	PS-0FCXX3
50	AF30	PS-1FCX13	PS-1FCX43	PS-1FCXX3
80	AF52	PS-2FCX13	PS-2FCX43	PS-2FCXX3
105	AF80	PS-3FCX13	PS-3FCX43	PS-3FCXX3
200	AF140	PS-4FCX13	PS-4FCX43	PS-4FKXX3

NEMA, 3-pole contactors

			Type 1	Type 4/12	Type 4X
NEMA size	Contactor size	Continuous current	Ordering code	Ordering code	Ordering code
00	AF09	9	PSN-AFCX13	PSN-AFCX43	PSN-AFCXX3
0	AF12	18	PSN-0FCX13	PSN-0FCX43	PSN-0FCXX3
1	AF26	27	PSN-1FCX13	PSN-1FCX43	PSN-1FCXX3
2	AF40	45	PSN-2FCX13	PSN-2FCX43	PSN-2FCXX3
3	AF80	90	PSN-3FCX13	PSN-3FCX43	PSN-3FCXX3
4	AF140	135	PSN-4FCX13	PSN-4FCX43	PSN-4FCXX3

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFCX11.

				Volts
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

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Plug and play enclosed starters

Combination, enclosed contactors



HP rated



NEMA

Amp rated, combination contactors, 3-pole, fusible disconnect

		Type 1	Type 4/12	Type 4X
General-purpose current	Contactor size	Ordering code	Ordering code	Ordering code
25	AF09	PS-AFCF13	PS-AFCF43	PS-AFCFX3
30	AF16	PS-0FCF13	PS-0FCF43	PS-0FCFX3
50	AF30	PS-1FCF13	PS-1FCF43	PS-1FCFX3
80	AF52	PS-2FCF13	PS-2FCF43	PS-2FCFX3
105	AF80	PS-3FCF13	PS-3FCF43	PS-3FCFX3
200	AF140	PS-4FCF13	PS-4FCF43	PS-4FCFX3

NEMA, combination contactors, 3-pole, fusible disconnect

			Type 1	Type 4/12	Type 4X
NEMA size	Contactor size	Continuous current	Ordering code	Ordering code	Ordering code
00	AF09	9	PSN-AFCF13	PSN-AFCF43	PSN-AFCFX3
0	AF12	18	PSN-0FCF13	PSN-0FCF43	PSN-0FCFX3
1	AF26	27	PSN-1FCF13	PSN-1FCF43	PSN-1FCFX3
2	AF40	45	PSN-2FCF13	PSN-2FCF43	PSN-2FCFX3
3	AF80	90	PSN-3FCF13	PSN-3FCF43	PSN-3FCFX3
4	AF140	135	PSN-4FCF13	PSN-4FCF43	PSN-4FCFX3

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFCF11.

			Volts	
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

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Plug and play enclosed starters

Single-phase starters, non-combination[1]



HP rated, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 120 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
13.8	AF09	0.75	PS-AFAX13	PS-AFAX43	PS-AFAXX3
20	AF16	1.5	PS-0FAX13	PS-0FAX43	–
24	AF30	2	PS-1FAX13	PS-1FAX43	PS-1FAXX3
34	AF52	3	PS-2FAX13	PS-2FAX43	–
80	AF80	7.5	PS-3FAX13	PS-3FAX43	–

Products without listed ordering codes are planned for future availability.

HP rated, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 240 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
10	AF09	1.5	PS-AFBX13	PS-AFBX43	–
17	AF16	3	PS-0FBX13	PS-0FBX43	–
28	AF30	5	PS-1FBX13	PS-1FBX43	PS-1FBXX3
50	AF52	10	PS-2FBX13	PS-2FBX43	PS-2FBXX3
68	AF80	15	PS-3FBX13	PS-3FBX43	PS-3FBXX3

Products without listed ordering codes are planned for future availability.

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFAX11.

	Volts			
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

[1]Overload relays, pilot device kits and control transformers must be ordered separately (see pages 115–122).

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Plug and play enclosed starters

Single-phase combination starters[1]



HP rated

HP rated, combination fused disconnect switch, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 120 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
13.8	AF09	0.75	PS-AFAF13	PS-AFAF43	PS-AFAFX3
20	AF16	1.5	PS-0FAF13	PS-0FAF43	–
24	AF30	2	PS-1FAF13	PS-1FAF43	PS-1FAFX3
34	AF52	3	PS-2FAF13	PS-2FAF43	–
80	AF80	7.5	–	–	–

Products without listed ordering codes are planned for future availability.

HP rated, combination fused disconnect switch, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 240 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
10	AF09	1.5	PS-AFBF13	PS-AFBF43	PS-AFBFX3
17	AF16	3	PS-0FBF13	–	–
28	AF30	5	PS-1FBF13	–	PS-1FBFX3
50	AF52	10	PS-2FBF13	–	–
68	AF80	15	–	–	–

Products without listed ordering codes are planned for future availability.

HP rated, combination starters, non-fusible disconnect, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 120 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
13.8	AF09	0.75	PS-AFAN13	PS-AFAN43	PS-AFANX3
20	AF16	1.5	PS-0FAN13	PS-0FAN43	–
24	AF30	2	PS-1FAN13	PS-1FAN43	–
34	AF52	3	PS-2FAN13	PS-2FAN43	–
80	AF80	7.5	PS-3FAN13	PS-3FAN43	–

Products without listed ordering codes are planned for future availability.

HP rated, combination starters, non-fusible disconnect, non-reversing

Motor switching current	Contactor size	Maximum motor HP ratings 240 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
10	AF09	1.5	PS-AFBN13	PS-AFBN43	–
17	AF16	3	PS-0FBN13	PS-0FBN43	–
28	AF30	5	PS-1FBN13	PS-1FBN43	–
50	AF52	10	PS-2FBN13	PS-2FBN43	–
68	AF80	15	–	PS-3FBN43	–

Products without listed ordering codes are planned for future availability.

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFAN11.

	Volts			
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

[1]Overload relays, pilot device kits and control transformers must be ordered separately (see pages 115–122).

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Plug and play enclosed starters

3-phase starters, non-combination[1]



HP rated, non-reversing, 3-phase starters

Motor switching current[2]	Contactor size	Maximum motor HP ratings 200/208 V	220/240 V	460/480 V	575/600 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
9	AF09	2	2	5	7.5	PS-AFSX13	PS-AFSX43	PS-AFSXX3
17	AF16	5	5	10	15	PS-0FSX13	PS-0FSX43	PS-0FSXX3
27	AF30	10	10	20	25	PS-1FSX13	PS-1FSX43	PS-1FSXX3
52	AF52	15	20	40	50	PS-2FSX13	PS-2FSX43	PS-2FSXX3
77	AF80	25	30	60	75	PS-3FSX13	PS-3FSX43	PS-3FSXX3
125	AF140	40	50	100	125	PS-4FSX13	PS-4FSX43	PS-4FSXX3

HP rated, reversing, 3-phase starters

Motor switching current[2]	Contactor size	Maximum motor HP ratings 200/208 V	220/240 V	460/480 V	575/600 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
9	AF09	2	2	5	7.5	PS-AFRX13	PS-AFRX43	PS-AFRXX3
17	AF16	5	5	10	15	PS-0FRX13	PS-0FRX43	PS-0FRXX3
27	AF30	10	10	20	25	PS-1FRX13	PS-1FRX43	PS-1FRXX3
52	AF52	15	20	40	50	PS-2FRX13	PS-2FRX43	PS-2FRXX3
77	AF80	25	30	60	75	PS-3FRX13	PS-3FRX43	PS-3FRXX3
125	AF140	40	50	100	125	PS-4FRX13	PS-4FRX43	PS-4FRXX3

NEMA, non-reversing, 3-phase starters

Motor switching current	Contactor size	Continuous current	Maximum motor HP ratings 200 V	230 V	460/575 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
00	AF09	9	1.5	1.5	2	PSN-AFSX13	PSN-AFSX43	PSN-AFSXX3
0	AF12	18	3	3	5	PSN-0FSX13	PSN-0FSX43	PSN-0FSXX3
1	AF26	27	7.5	7.5	10	PSN-1FSX13	PSN-1FSX43	PSN-1FSXX3
2	AF40	45	10	15	25	PSN-2FSX13	PSN-2FSX43	PSN-2FSXX3
3	AF80	90	25	30	50	PSN-3FSX13	PSN-3FSX43	PSN-3FSXX3
4	AF140	135	40	50	100	PSN-4FSX13	PSN-4FSX43	PSN-4FSXX3

NEMA, reversing, 3-phase starters

NEMA size	Contactor size	Continuous current	Maximum motor HP ratings 200 V	230 V	460/575 V	Type 1 Ordering code	Type 4/12 Ordering code	Type 4X Ordering code
00	AF09	9	1.5	1.5	2	PSN-AFRX13	PSN-AFRX43	PSN-AFRXX3
0	AF12	18	3	3	5	PSN-0FRX13	PSN-0FRX43	PSN-0FRXX3
1	AF26	27	7.5	7.5	10	PSN-1FRX13	PSN-1FRX43	PSN-1FRXX3
2	AF40	45	10	15	25	PSN-2FRX13	PSN-2FRX43	PSN-2FRXX3
3	AF80	90	25	30	50	PSN-3FRX13	PSN-3FRX43	PSN-3FRXX3
4	AF140	135	40	50	100	PSN-4FRX13	PSN-4FRX43	PSN-4FRXX3

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFSX11.

	Volts			
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

[1]Overload relays, pilot device kits and control transformers must be ordered separately (see pages 115–122).
[2]Ratings listed are at 600 V AC.

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Plug and play enclosed starters

3-phase starters, combination fusible disconnect switch[1]



HP rated



NEMA

Desired fusible disconnect switch option

F	For IEC — single and 3-phase
	For NEMA 3-phase (208 and 240 V), no single phase
L	Only for NEMA 3-phase (480 and 600 V), NEMA sizes 1, 2 and 3

HP rated, combination starters, fusible disconnect, non-reversing

		Maximum motor HP ratings				Type 1	Type 4/12	Type 4X
Motor switching current[2]	Contactor size	200/ 208 V	220/ 240 V	460/ 480 V	575/ 600 V	Ordering code	Ordering code	Ordering code
9	AF09	2	2	5	7.5	PS-AFSF13	PS-AFSF43	PS-AFSFX3
17	AF16	5	5	10	15	PS-0FSF13	PS-0FSF43	PS-0FSFX3
27	AF30	10	10	20	25	PS-1FSF13	PS-1FSF43	PS-1FSFX3
52	AF52	15	20	40	50	PS-2FSF13	PS-2FSF43	PS-2FSFX3
77	AF80	25	30	60	75	PS-3FSF13	PS-3FSF43	PS-3FSFX3
125	AF140	40	50	100	125	PS-4FSF13	PS-4FSF43	PS-4FSFX3

HP rated, combination starters, fusible disconnect, reversing

		Maximum motor HP ratings				Type 1	Type 4/12	Type 4X
Motor switching current[2]	Contactor size	200/ 208 V	220/ 240 V	460/ 480 V	575/ 600 V	Ordering code	Ordering code	Ordering code
9	AF09	2	2	5	7.5	PS-AFRF13	PS-AFRF43	PS-AFRFX3
17	AF16	5	5	10	15	PS-0FRF13	PS-0FRF43	PS-0FRFX3
27	AF30	10	10	20	25	PS-1FRF13	PS-1FRF43	PS-1FRFX3
52	AF52	15	20	40	50	PS-2FRF13	PS-2FRF43	PS-2FRFX3
77	AF80	25	30	60	75	PS-3FRF13	PS-3FRF43	PS-3FRFX3
125	AF140	40	50	100	125	PS-4FRF13	PS-4FRF43	PS-4FRFX3

NEMA, combination starters, fusible disconnect, non-reversing[2]

			Maximum motor HP ratings			Type 1	Type 4/12	Type 4X
NEMA size	Contactor size	Continuous current	200 V	230 V	460/575 V	Ordering code	Ordering code	Ordering code
00	AF09	9	1.5	1.5	2	PSN-AFSF13	PSN-AFSF43	PSN-AFSFX3
0	AF12	18	3	3	5	PSN-0FSF13	PSN-0FSF43	PSN-0FSFX3
1	AF26	27	7.5	7.5	10	PSN-1FS*13	PSN-1FS*43	PSN-1FS*X3
2	AF40	45	10	15	25	PSN-2FS*13	PSN-2FS*43	PSN-2FS*X3
3	AF80	90	25	30	50	PSN-3FS*13	PSN-3FS*43	PSN-3FS*X3
4	AF140	135	40	50	100	PSN-4FSF13	PSN-4FSF43	PSN-4FSFX3

*Replace the asterisk with the code for the desired fusible disconnect switch option from the table.

NEMA, combination starters, fusible disconnect, reversing[2]

			Maximum motor HP ratings			Type 1	Type 4/12	Type 4X
NEMA size	Contactor size	Continuous current	200 V	230 V	460/575 V	Ordering code	Ordering code	Ordering code
00	AF09	9	1.5	1.5	2	PSN-AFRF13	PSN-AFRF43	PSN-AFRFX3
0	AF12	18	3	3	5	PSN-0FRF13	PSN-0FRF43	PSN-0FRFX3
1	AF26	27	7.5	7.5	10	PSN-1FR*13	PSN-1FR*43	PSN-1FR*X3
2	AF40	45	10	15	25	PSN-2FR*13	PSN-2FR*43	PSN-2FR*X3
3	AF80	90	25	30	50	PSN-3FR*13	PSN-3FR*43	PSN-3FR*X3
4	AF140	135	40	50	100	PSN-4FRF13	PSN-4FRF43	PSN-4FRFX3

*Replace the asterisk with the code for the desired fusible disconnect switch option from the table.

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFSF11.

	Volts			
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

[1]Overload relays, pilot device kits and control transformers must be ordered separately (see pages 115–122).
[2]Use code "L" for NEMA-rated combination starters (NEMA sizes 1, 2 and 3) being used at 480 or 600 V AC.
[3]Ratings listed are at 600 V AC.

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Plug and play enclosed starters

3-phase starters, combination non-fusible disconnect switch[1]



HP rated



NEMA

HP rated, combination starters, non-fusible disconnect, non-reversing

		Maximum motor HP ratings				Type 1	Type 4/12	Type 4X
Motor switching current[2]	Contactor size	200/ 208 V	220/ 240 V	460/ 480 V	575/ 600 V	Ordering code	Ordering code	Ordering code
9	AF09	2	2	5	7.5	PS-AFSN13	PS-AFSN43	PS-AFSNX3
17	AF16	5	5	10	15	PS-0FSN13	PS-0FSN43	PS-0FSNX3
27	AF30	10	10	20	25	PS-1FSN13	PS-1FSN43	PS-1FSNX3
52	AF52	15	20	40	50	PS-2FSN13	PS-2FSN43	PS-2FSNX3
77	AF80	25	30	60	75	PS-3FSN13	PS-3FSN43	PS-3FSNX3
125	AF140	40	50	100	125	PS-4FSN13	PS-4FSN43	PS-4FSNX3

NEMA, combination starters, non-fusible disconnect, non-reversing

			Maximum motor HP ratings			Type 1	Type 4/12	Type 4X
NEMA size	Contactor size	Continuous current	200 V	230 V	460/575 V	Ordering code	Ordering code	Ordering code
00	AF09	9	1.5	1.5	2	PSN-AFSN13	PSN-AFSN43	PSN-AFSNX3
0	AF12	18	3	3	5	PSN-0FSN13	PSN-0FSN43	PSN-0FSNX3
1	AF26	27	7.5	7.5	10	PSN-1FSN13	PSN-1FSN43	PSN-1FSNX3
2	AF40	45	10	15	25	PSN-2FSN13	PSN-2FSN43	PSN-2FSNX3
3	AF80	90	25	30	50	PSN-3FSN13	PSN-3FSN43	PSN-3FSNX3
4	AF140	135	40	50	100	PSN-4FSN13	PSN-4FSN43	PSN-4FSNX3

Coil voltage selection

All AC-operated ordering codes include a 100–250 V AC coil. To select other coil voltages, substitute the code from the coil voltage selection chart for the last digit in the ordering code. Ex.: A 24–60 V AC coil is required for an AF09 contactor; use PS-AFSN11.

	Volts			
Hz	24-60	48-130	100-250	250-500
50/60	1	2	3	4

[1]Overload relays, pilot device kits and control transformers must be ordered separately (see pages 115–122).
[2]Ratings listed are at 600 V AC.

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Plug and play enclosed starters

Overload relay product overview





Overload relay selection

HP-rated magnetic starters

- Generally require a class 10 overload relay
- Please choose the appropriate thermal OLR (TF42 to TF140) for these applications
- Thermal OLRs can be used in single-phase applications

NEMA-rated magnetic starters

- Generally require a class 20 OR 30 overload relay (for heavy-duty applications)
- Please choose the appropriate thermal OLR (EF19 to EF146) for these applications
- Electronic OLRs can not be used in single-phase (120 or 240 V) applications

*It is the client's responsibility to confirm whether the overload relay suggested is appropriate for their application. Please verify correct overload required for each specific application with the motor's name plate.

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Plug and play enclosed starters

Overload relays





Overload relay selection

Contactor size	Current setting range	Thermal ordering code	Electronic ordering code	Suffix code
AF09 to AF30	0.10 ... 0.13	TF42-0.13	EF19-0.32	A
	0.13 ... 0.17	TF42-0.17	EF19-0.32	B
	0.17 ... 0.23	TF42-0.23	EF19-0.32	C
	0.23 ... 0.31	TF42-0.31	EF19-0.32	D
	0.31 ... 0.41	TF42-0.41	EF19-1.0	E
	0.41 ... 0.55	TF42-0.55	EF19-1.0	F
	0.55 ... 0.74	TF42-0.74	EF19-1.0	G
	0.74 ... 1.0	TF42-1.0	EF19-1.0	H
	1.0 ... 1.3	TF42-1.3	EF19-2.7	J
	1.3 ... 1.7	TF42-1.7	EF19-2.7	K
	1.7 ... 2.3	TF42-2.3	EF19-2.7	L
	2.3 ... 3.1	TF42-3.1	EF19-6.3	M
	3.1 ... 4.2	TF42-4.2	EF19-6.3	N
	4.2 ... 5.7	TF42-5.7	EF19-6.3	P
	5.7 ... 7.6	TF42-7.6	EF19-18.9	Q
	7.6 ... 10	TF42-10	EF19-18.9	R
	10 ... 13	TF42-13	EF19-18.9	S
	13 ... 16	TF42-16	EF19-18.9	T
	16 ... 20	TF42-20	EF45-30	U
	20 ... 24	TF42-24	EF45-30	V
	24 ... 29	TF42-29	EF45-30	W
	29 ... 35	TF42-35	EF45-45	X
AF52	22 ... 28	TF65-28	EF65-56	A
	25 ... 33	TF65-33	EF65-56	B
	30 ... 40	TF65-40	EF65-56	C
	36 ... 47	TF65-47	EF65-56	D
	44 ... 53	TF65-53	EF65-56	E
	50 ... 60	TF65-60	EF65-70	F
	57 ... 67	TF65-67	EF65-70	G
AF80	40 ... 51	TF96-51	EF96-100	A
	48 ... 60	TF96-60	EF96-100	B
	57 ... 68	TF96-68	EF96-100	C
	65 ... 78	TF96-78	EF96-100	D
	75 ... 87	TF96-87	EF96-100	E
	84 ... 96	TF96-96	EF96-100	F
AF140	66 ... 90	TF140DU-90	EF146-150	A
	80 ... 110	TF140DU-110	EF146-150	B
	100 ... 135	TF140DU-135	EF146-150	C
	110 ... 142	TF140DU-142	EF146-150	D

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Plug and play enclosed starters
Thermal overload relay sizing chart





Correct sizing of overload relays as per motor HP for IEC-rated starters

1-phase		3-phase					
120 V	240 V	208 V	240 V	480 V	600 V	Thermal overload relay class 10	Suffix for factory installation
–	–	–	–	–	–	TF42-0.13 (0.10 ... 0.13)	A
–	–	–	–	–	–	TF42-0.17 (0.13 ... 0.17)	B
–	–	–	–	–	–	TF42-0.23 (0.17 ... 0.23)	C
–	–	–	–	–	–	TF42-0.31 (0.23 ... 0.31)	D
–	–	–	–	–	–	TF42-0.41 (0.31 ... 0.41)	E
–	–	–	–	–	–	TF42-0.55 (0.41 ... 0.55)	F
–	–	–	–	–	–	TF42-0.74 (0.55 ... 0.74)	G
–	–	–	–	–	1/2	TF42-1.0 (0.74 ... 1.0)	H
–	–	–	–	1/2	3/4	TF42-1.3 (1.0 ... 1.3)	J
–	1/10	–	–	3/4	1	TF42-1.7 (1.3 ... 1.7)	K
–	1/8, 1/6	–	1/2	1	–	TF42-2.3 (1.7 ... 2.3)	L
1/10	1/4	1/2	–	1.5	1.5, 2	TF42-3.1 (2.3 ... 3.1)	M
1/8	1/3	3/4	1	2	3	TF42-4.2 (3.1 ... 4.2)	N
1/6	1/2	1	–	3	–	TF42-5.7 (4.2 ... 5.7)	P
1/4, 1/3	3/4	1.5, 2	1.5, 2	5	5	TF42-7.6 (5.7 ... 7.6)	Q
1/2	1	–	3	–	7.5	TF42-10 (7.6 ... 10)	R
–	1.5, 2	3	–	7.5	10	TF42-13 (10 ... 13)	S
3/4	–	–	5	10	–	TF42-16 (13 ... 16)	T
1	3	5	–	–	15	TF42-20 (16 ... 20)	U
1.5, 2	–	–	7.5	15	20	TF42-24 (20 ... 24)	V
–	5	7.5	10	20	25	TF42-29 (24 ... 29)	W
–	–	10	–	–	–	TF42-35 (29 ... 35)	X
–	–	–	–	–	–	TF65-28 (22 ... 28)	A
–	–	–	–	–	30	TF65-33 (25 ... 33)	B
3	7.5	–	–	25	–	TF65-40 (30 ... 40)	C
–	–	–	15	30	40	TF65-47 (36 ... 47)	D
–	10	15	–	40	50	TF65-53 (44 ... 53)	E
–	–	–	20	–	–	TF65-60 (50 ... 60)	F
–	–	–	–	–	–	TF65-67 (57 ... 67)	G
–	–	–	–	–	–	TF96-51 (40 ... 51)	A
5	–	–	–	–	–	TF96-60 (48 ... 60)	B
–	–	20	–	50	60	TF96-68 (57 ... 68)	C
–	15	25	25	60	75	TF96-78 (65 ... 78)	D
7.5	–	–	30	–	–	TF96-87 (75 ... 87)	E
–	–	–	–	–	–	TF96-96 (84 ... 96)	F
–	–	30	–	–	–	TF140DU-90 (66 ... 90)	A
–	–	–	40	75	100	TF140DU-110 (80 ... 110)	B
–	–	40	50	–	125	TF140DU-135 (100 ... 135)	C
–	–	–	–	100	–	TF140DU-142 (110 ... 142)	D

* It is the client's responsibility to confirm whether the overload relay suggested is appropriate for their application. Please verify correct overload required for each specific application with the motor's name plate.

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Plug and play enclosed starters
Electronic overload relay sizing chart





Correct sizing of overload relays as per motor HP for NEMA-rated starters

3-phase					
208 V	**240 V**	**480 V**	**600 V**	**Electronic overload relay class 10, 20, 30**	**Suffix for factory installation**
–	–	–	–	EF19-0.32 (0.10 ... 0.13)	A
–	–	–	–	EF19-0.32 (0.10 ... 0.13)	B
–	–	–	–	EF19-0.32 (0.10 ... 0.13)	C
–	–	–	–	EF19-0.32 (0.10 ... 0.13)	D
–	–	–	–	EF19-1.0 (0.30 ... 0.41)	E
–	–	–	–	EF19-1.0 (0.41 ... 0.55)	F
–	–	–	–	EF19-1.0 (0.55 ... 0.74)	G
–	–	–	1/2	EF19-1.0 (0.74 ... 1.0)	H
–	–	1/2	3/4	EF19-2.7 (0.8 ... 1.3)	J
–	–	3/4	1	EF19-2.7 (1.3 ... 1.7)	K
–	1/2	1	–	EF19-2.7 (1.7 ... 2.7)	L
1/2	–	1.5	1.5, 2	EF19-6.3 (1.9 ... 3.1)	M
3/4	1	2	3	EF19-6.3 (3.1 ... 4.2)	N
1	–	3	–	EF19-6.3 (4.2 ... 6.3)	P
1.5, 2	1.5, 2	5	5	EF19-18.9 (5.7 ... 7.6)	Q
–	3	–	7.5	EF19-18.9 (7.6 ... 10)	R
3	–	7.5	10	EF19-18.9 (10 ... 13)	S
–	5	10	–	EF19-18.9 (13 ... 18.9)	T
5	–	–	–	EF45-30 (9 ... 20)	U
7.5	7.5	–	–	EF45-30 (20 ... 24)	V
–	–	–	–	EF45-30 (24 ... 30)	W
–	–	–	–	EF45-45 (15 ... 45)	X
–	–	15	20	EF65-56 (20 ... 28)	A
10	10	20	25	EF65-56 (25 ... 33)	B
–	15	25	–	EF65-56 (30 ... 40)	C
–	–	–	40	EF65-56 (36 ... 48)	D
–	–	–	50	EF65-56 (44 ... 53)	E
–	–	–	–	EF65-70 (50 ... 60)	F
–	–	–	–	EF65-70 (57 ... 70)	G
15	15	30	40	EF96-100 (36 ... 51)	A
–	20	40	50	EF96-100 (48 ... 60)	B
20	–	50	–	EF96-100 (57 ... 68)	C
25	25	–	–	EF96-100 (65 ... 78)	D
–	30	–	–	EF96-100 (75 ... 87)	E
–	–	–	–	EF96-100 (84 ... 100)	F
30	–	60	60,75	EF146-150 (54 ... 90)	A
–	40	75	100	EF146-150 (80 ... 110)	B
40	50	–	–	EF146-150 (100 ... 135)	C
–	–	100	–	EF146-150 (110 ... 150)	D

* It is the client's responsibility to confirm whether the overload relay suggested is appropriate for their application. Please verify correct overload required for each specific application with the motor's name plate.

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Plug and play enclosed starters
Pilot device kits for D.O.L. starters





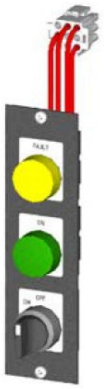


Pilot device kits for D.O.L. starters or enclosed contactors

Pilot light	# of devices	Description	Nameplate language	Nameplate text	Suffix for factory installation	Ordering code
130 V	1	Pilot light	English	ON	G	PS-PL
130 V	3	Push buttons + pilot light	English	START / STOP / ON	B	PS-SSI
130 V	1	Pilot light	English	ON	–	PS-PLR
130 V	1	Pilot light	English	OFF	–	PS-PLG
130 V	2	Pilot light	English	ON/ OFF	–	PS-PLRG
130 V	2	2-position switch + pilot light	English	OFF-ON / ON	D	PS-SL2I
130 V	2	2-position keyed switch + pilot light	English	OFF-ON / ON	XB	PS-SL2KI
130 V	2	3-position switch + pilot light	English	HAND-OFF-AUTO / ON	F	PS-SL3I
130 V	2	3-position keyed switch + pilot light	English	HAND-OFF-AUTO / ON	XD	PS-SL3KI
130 V	1	Pilot light	French	EN SERVICE	P	PS-PL-F
130 V	3	Push buttons + pilot light	French	MARCHE / ARRET / EN SERVICE	J	PS-SSI-F
130 V	1	Pilot light	French	En Service	–	PS-PLR -F
130 V	1	Pilot light	French	Hors Service	–	PS-PLG-F
130 V	2	Pilot light	French	En Service/ Hors Service	–	PS-PLRG-F
130 V	2	2-position switch + pilot light	French	HORS-EN / EN SERVICE	L	PS-SL2I-F
130 V	2	2-position keyed switch + pilot light	French	HORS-EN / EN SERVICE	XK	PS-SL2KI-F
130 V	2	3-position switch + pilot light	French	MAN-HORS-AUTO / ON	N	PS-SL3I-F
130 V	2	3-position keyed switch + pilot light	French	MAN-HORS-AUTO / EN SERVICE	XM	PS-SL3KI-F
24 V	1	Pilot light	English	ON	G	PS-PLF
24 V	3	Push buttons + pilot light	English	START / STOP / ON	B	PS-SSIF
24 V	2	2-position switch + pilot light	English	OFF-ON / ON	D	PS-SL2IF
24 V	2	2-position keyed switch + pilot light	English	OFF-ON / ON	XB	PS-SL2KIF
24 V	2	3-position switch + pilot light	English	HAND-OFF-AUTO / ON	F	PS-SL3IF
24 V	2	3-position keyed switch + pilot light	English	HAND-OFF-AUTO / ON	XD	PS-SL3KIF
24 V	1	Pilot light	French	EN SERVICE	P	PS-PLF-F
24 V	3	Push buttons + pilot light	French	MARCHE / ARRET / EN SERVICE	J	PS-SSIF-F
24 V	2	2-position switch + pilot light	French	HORS-EN / EN SERVICE	L	PS-SL2IF-F
24 V	2	2-position keyed switch + pilot light	French	HORS-EN / EN SERVICE	XK	PS-SL2KIF-F
24 V	2	3-position switch + pilot light	French	MAN-HORS-AUTO / ON	N	PS-SL3IF-F
24 V	2	3-position keyed switch + pilot light	French	MAN-HORS-AUTO / EN SERVICE	XM	PS-SL3KIF-F
–	2	Push buttons	English	START / STOP	A	PS-SS
–	2	Push buttons	English	START / EMERGENCY STOP	Q	PS-SE
–	3	Push buttons	English	START / STOP / EMERGENCY STOP	YA	PS-SSE
–	1	2-position switch	English	OFF-ON	C	PS-SL2
–	1	2-position keyed switch	English	OFF-ON	XA	PS-SL2K
–	1	3-position switch	English	HAND-OFF-AUTO	E	PS-SL3
–	1	3-position keyed switch	English	HAND-OFF-AUTO	XC	PS-SL3K
–	2	Push buttons	French	MARCHE / ARRET	H	PS-SS-F
–	2	Push buttons	French	MARCHE / ARRET D'URGENCE	R	PS-SE-F
–	3	Push buttons	French	MARCHE / ARRET / ARRET D'URGENCE	YB	PS-SSE-F
–	1	2-position switch	French	HORS-EN	K	PS-SL2-F
–	1	3-position switch	French	MAN-HORS-AUTO	M	PS-SL3-F
–	1	2-position keyed switch	French	HORS-EN	XJ	PS-SL2K-F
–	1	3-position keyed switch	French	MAN-HORS-AUTO	XL	PS-SL3K-F

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Plug and play enclosed starters
Pilot device kits for D.O.L. starters



Pilot device kits for D.O.L. starters or enclosed contactors

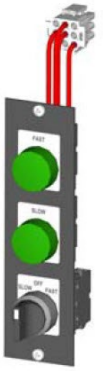
Pilot light	# of devices	Description	Nameplate language	Nameplate text	Suffix for factory installation	Ordering code
130 V	3	2-position switch + pilot lights	English	OFF-ON / ON / FAULT	S	PS-SL2IO
130 V	3	2-position keyed switch + pilot lights	English	OFF-ON / ON / FAULT	XE	PS-SL2KIO
130 V	3	3-position switch + pilot lights	English	HAND-OFF-AUTO / ON / FAULT	U	PS-SL3IO
130 V	3	3-position keyed switch + pilot lights	English	HAND-OFF-AUTO / ON / FAULT	XF	PS-SL3KIO
130 V	3	2-position switch + pilot lights	French	HORS-EN / EN SERVICE / FAUTE	T	PS-SL2IO-F
130 V	3	2-position keyed switch + pilot lights	French	HORS-EN / EN SERVICE / FAUTE	XN	PS-SL2KIO-F
130 V	3	3-position switch + pilot lights	French	MAN-HORS-AUTO / ON / FAUTE	V	PS-SL3IO-F
130 V	3	3-position keyed switch + pilot lights	French	MAN-HORS-AUTO / EN SERVICE / FAUTE	XP	PS-SL3KIO-F
24 V	3	2-position switch + pilot lights	English	OFF-ON / ON / FAULT	S	PS-SL2IOF
24 V	3	2-position keyed switch + pilot lights	English	OFF-ON / ON / FAULT	XE	PS-SL2KIOF
24 V	3	3-position switch + pilot lights	English	HAND-OFF-AUTO / ON / FAULT	U	PS-SL3IOF
24 V	3	3-position keyed switch + pilot lights	English	HAND-OFF-AUTO / ON / FAULT	XF	PS-SL3KIOF
24 V	3	2-position switch + pilot lights	French	HORS-EN / EN SERVICE / FAUTE	T	PS-SL2IOF-F
24 V	3	2-position keyed switch + pilot lights	French	HORS-EN / EN SERVICE / FAUTE	XN	PS-SL2KIOF-F
24 V	3	3-position switch + pilot lights	French	MAN-HORS-AUTO / ON / FAUTE	V	PS-SL3IOF-F
24 V	3	3-position keyed switch + pilot lights	French	MAN-HORS-AUTO / EN SERVICE / FAUTE	XP	PS-SL3KIOF-F

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Plug and play enclosed starters

Pilot device kits for 2-speed and reversing starters



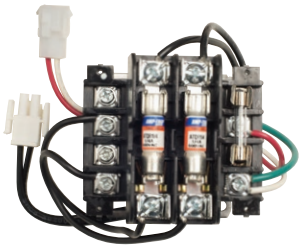


Pilot device kits for 2-speed and reversing starters

Starter type	Pilot light	# of devices	Description	Nameplate language	Nameplate text	Suffix for factory installation	Ordering code
Rev.	130 V	3	3-position switch + pilot lights	English	FOR-OFF-REV / FORWARD / REVERSE	C	PS-SL3RI
	130 V	3	3-position switch + pilot lights	French	AVANT-HORS-ARR. / AVANT / ARRIERE	F	PS-SL3RI-F
	24 V	3	3-position switch + pilot lights	English	FOR-OFF-REV / FORWARD / REVERSE	C	PS-SL3RIF
	24 V	3	3-position switch + pilot lights	French	AVANT-HORS-ARR. / AVANT / ARRIERE	F	PS-SL3RIF-F
	–	3	Push buttons	English	FORWARD-REVERSE-STOP	A	PS-FRS
	–	1	3-position switch	English	FOR-OFF-REV	B	PS-SL3R
	–	3	Push buttons	French	AVANT-ARRIERE-ARRET	D	PS-FRS-F
	–	1	3-position switch	French	AVANT-HORS-ARR.	E	PS-SL3R-F
2-speed	130 V	3	3-position switch + pilot lights	English	SLOW-OFF-FAST / SLOW / FAST	C	PS-SL3FI
	130 V	3	4-position switch + pilot lights	English	AUTO-OFF-SLOW-FAST / SLOW / FAST	H	PS-SL4FI
	130 V	3	3-position switch + pilot light	French	LENT-HORS-RAPIDE / EN SERVICE	F	PS-SL3FI-F
	130 V	3	4-position switch + pilot lights	French	AUTO-HORS-LENT-RAPIDE / LENT / RAPIDE	K	PS-SL4FI-F
	24 V	3	3-position switch + pilot lights	English	SLOW-OFF-FAST / SLOW / FAST	C	PS-SL3FIF
	24 V	3	3-position switch + pilot light	French	LENT-HORS-RAPIDE / EN SERVICE	F	PS-SL3FIF-F
	24 V	3	4-position switch + pilot lights	English	AUTO-OFF-SLOW-FAST / SLOW / FAST	H	PS-SL4FIF
	24 V	3	4-position switch + pilot lights	French	AUTO-HORS-LENT-RAPIDE / LENT / RAPIDE	K	PS-SL4FIF-F
	–	3	Push buttons	English	FAST-SLOW-STOP	A	PS-FSO
	–	1	3-position switch	English	SLOW-OFF-FAST	B	PS-SL3F
	–	1	4-position switch	English	AUTO-OFF-SLOW-FAST	G	PS-SL4F
	–	3	Push buttons	French	RAPIDE-LENT-ARRET	D	PS-FSO-F
	–	1	3-position switch	French	LENT-HORS-RAPIDE	E	PS-SL3F-F
	–	1	4-position switch	French	AUTO-HORS-LENT-RAPIDE	J	PS-SL4F-F

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Plug and play enclosed starters
Transformer kits



Transformer kits

For contactor sizes	VA rating	Primary voltage	Secondary voltage	Suffix for factory installation	Ordering code
PS(N)-AF, 0F, 1F, 2F, 3F	50	240	120	01	PS-50-240/120
		480	120	03	PS-50-480/120
		600	120	04	PS-50-600/120
		240	24	05	PS-50-240/24
		480	24	06	PS-50-480/24
		600	24	07	PS-50-600/24
		208	120	08	PS-50-208/120
		208	24	09	PS-50-208/24
		120	24	12	PS-50-120/24
PS(N)-4F	100	240	120	01	PS-100-240/120
		480	120	03	PS-100-480/120
		600	120	04	PS-100-600/120
		240	24	05	PS-100-240/24
		480	24	06	PS-100-480/24
		600	24	07	PS-100-600/24
		208	120	08	PS-100-208/120
		208	24	09	PS-100-208/24
		120	24	12	PS-100-120/24

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Plug and play enclosed starters
Technical data

Standard selection for non-combination contactors and starters

ProS starters	Main protection	Contactor	Maximum overload	Combination kA	AC1	AC3	Single phase (HP)			Three phases (HP)			
					600 V	600 V	120 V	208 V	240 V	208 V	240 V	480 V	600 V
9	N/A	AF09	TF42-16	5	25 Amp	9 Amp	0.75 HP	1 HP	1.5 HP	2 HP	2 HP	5 HP	7.5 HP
17	N/A	AF16	TF42-24	5	30 Amp	17 Amp	1.5 HP	2 HP	3 HP	5 HP	5 HP	10 HP	15 HP
27	N/A	AF30	TF42-35	5	50 Amp	27 Amp	2 HP	3 HP	5 HP	10 HP	10 HP	20 HP	25 HP
52	N/A	AF52	TF65-60	5	80 Amp	52 Amp	3 HP	7.5 HP	10 HP	15 HP	20 HP	40 HP	50 HP
77	N/A	AF80	TF96-87	10	105 Amp	77 Amp	7.5 HP	15 HP	15 HP	25 HP	30 HP	60 HP	75 HP
125	N/A	AF140	TF140DU-142	10	200 Amp	125 Amp	–	–	–	40 HP	50 HP	100 HP	125 HP

Standard cable range for non-combination contactors and starters

HP ProS starters	Contactor	Incoming lugs
PS-AF_X...	AF09	2 x (16 AWG-10 AWG)
PS-0F_X...	AF16	2 x (16 AWG-10 AWG)
PS-1F_X...	AF30	2 x (14 AWG-8 AWG)
PS-2F_X...	AF52	2 x (10 AWG-2 AWG)
PS-3F_X...	AF80	2 x (6 AWG-1 AWG)
PS-4F_X...	AF140	2 x (6 AWG-3/0 AWG)

NEMA ProS starters	Contactor	Incoming lugs
PSN-AF_X...	AF09N	2 x (16 AWG-10 AWG)
PSN-0F_X...	AF12N	2 x (16 AWG-10 AWG)
PSN-1F_X...	AF26N	2 x (14 AWG-8 AWG)
PSN-2F_X...	AF40N	2 x (10 AWG-2 AWG)
PSN-3F_X...	AF80N	2 x (6 AWG-1 AWG)
PSN-4F_X...	AF140N	2 x (6 AWG-3/0 AWG)

Standard selection for combination contactors and starters (disconnect switches)

ProS starters	Main protection	Contactor	Maximum overload	Combination kA	AC1	AC3	Single phase (HP)			Three phases (HP)			
					600 V	600 V	120 V	208 V	240 V	208 V	240 V	480 V	600 V
PS-AF_N...	OT30F3	AF09	TF42-16	5	25 Amp	9 Amp	0.75 HP	1 HP	1.5 HP	2 HP	2 HP	5 HP	7.5 HP
PS-0F_N...	OT30F3	AF16	TF42-24	5	30 Amp	17 Amp	1.5 HP	2 HP	3 HP	5 HP	5 HP	10 HP	15 HP
PS-1F_N...	OT60F3	AF30	TF42-35	5	50 Amp	27 Amp	2 HP	3 HP	5 HP	10 HP	10 HP	20 HP	25 HP
PS-2F_N...	OT100F3	AF52	TF65-60	5	80 Amp	52 Amp	3 HP	7.5 HP	10 HP	15 HP	20 HP	40 HP	50 HP
PS-3F_N...	OT200U12	AF80	TF96-87	10	105 Amp	77 Amp	7.5 HP	15 HP	15 HP	25 HP	30 HP	60 HP	75 HP
PS-4F_N...	OT200U12	AF140	TF140DU-142	10	200 Amp	125 Amp	–	–	–	40 HP	50 HP	100 HP	125 HP
PSN-AF_N...	OT30F3	AF09N	EF19-18.9	5	–	9 Amp	–	–	–	1.5 HP	1.5 HP	2 HP	2 HP
PSN-0F_N...	OT30F3	AF12N	EF19-18.9	5	–	18 Amp	–	–	–	3 HP	3 HP	5 HP	5 HP
PSN-1F_N...	OT60F3	AF26N	EF45-45	5	–	27 Amp	–	–	–	7.5 HP	7.5 HP	10 HP	10 HP
PSN-2F_N...	OT100F3	AF40N	EF65-70	5	–	45 Amp	–	–	–	10 HP	15 HP	25 HP	25 HP
PSN-3F_N...	OT200U12	AF80N	EF96-100	10	–	90 Amp	–	–	–	25 HP	30 HP	50 HP	50 HP
PSN-4F_N...	OT200U12	AF140N	EF146-150	10	–	135 Amp	–	–	–	40 HP	50 HP	100 HP	125 HP

Standard cable range for combination contactors and starters (disconnect switches)

HP ProS starters	Disconnect switch	Incoming lugs
PS-AF_N...	OT30F3	1 x (14 AWG-4 AWG)
PS-0F_N...	OT30F3	1 x (14 AWG-4 AWG)
PS-1F_N...	OT60F3	1 x (14 AWG-4 AWG)
PS-2F_N...	OT100F3	1 x (8 AWG-1/0 AWG)
PS-3F_N...	OT200U12	1 x (4 AWG-300MCM)
PS-4F_N...	OT200U12	1 x (4 AWG-300MCM)

NEMA ProS starters	Contactor	Incoming lugs
PSN-AF_N...	OT30F3	1 x (14 AWG-4 AWG)
PSN-0F_N...	OT30F3	1 x (14 AWG-4 AWG)
PSN-1F_N...	OT60F3	1 x (14 AWG-4 AWG)
PSN-2F_N...	OT100F3	1 x (8 AWG-1/0 AWG)
PSN-3F_N...	OT200U12	1 x (4 AWG-300MCM)
PSN-4F_N...	OT200U12	1 x (4 AWG-300MCM)

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Plug and play enclosed starters
Technical data

Standard selection for combination contactors and starters (fuse disconnect switches)

ProS starters	Main protection	Contactor	Maximum overload	Combination kA	AC1	AC3	Single phase (HP)			Three phases (HP)			
					600 V	600 V	120 V	208 V	240 V	208 V	240 V	480 V	600 V
PS-AF_F...	OS30FAJ12	AF09	TF42-16	Contact ABB	25 Amp	9 Amp	0.75 HP	1 HP	1.5 HP	2 HP	2 HP	5 HP	7.5 HP
PS-0F_F...	OS30FAJ12	AF16	TF42-24	Contact ABB	30 Amp	17 Amp	1.5 HP	2 HP	3 HP	5 HP	5 HP	10 HP	15 HP
PS-1F_F...	OS60GJ12	AF30	TF42-35	Contact ABB	50 Amp	27 Amp	2 HP	3 HP	5 HP	10 HP	10 HP	20 HP	25 HP
PS-2F_F...	OS100GJ12	AF52	TF65-60	Contact ABB	80 Amp	52 Amp	3 HP	7.5 HP	10 HP	15 HP	20 HP	40 HP	50 HP
PS-3F_F...	OS200J12	AF80	TF96-87	Contact ABB	105 Amp	77 Amp	7.5 HP	15 HP	15 HP	25 HP	30 HP	60 HP	75 HP
PS-4F_F...	OS200J12	AF140	TF140DU-142	Contact ABB	200 Amp	125 Amp	–	–	–	40 HP	50 HP	100 HP	125 HP
PSN-AF_F...	OS30FAJ12	AF09N	EF19-18.9	Contact ABB	–	9 Amp	–	–	–	1.5 HP	1.5 HP	2 HP	2 HP
PSN-0F_F...	OS30FAJ12	AF12N	EF19-18.9	Contact ABB	–	16 Amp	–	–	–	3 HP	3 HP	5 HP	5 HP
PSN-1F_L...	OS30FAJ12	AF26N	EF45-45	Contact ABB	–	27 Amp	–	–	–	–	–	10 HP	10 HP
PSN-1F_F...	OS60GJ12	AF26N	EF45-45	Contact ABB	–	27 Amp	–	–	–	7.5 HP	7.5 HP	–	–
PSN-2F_L...	OS60GJ12	AF40N	EF65-70	Contact ABB	–	45 Amp	–	–	–	–	–	25 HP	25 HP
PSN-2F_F...	OS100GJ12	AF40N	EF65-70	Contact ABB	–	45 Amp	–	–	–	10 HP	15 HP	–	–
PSN-3F_L...	OS100GJ12	AF80N	EF96-100	Contact ABB	–	90 Amp	–	–	–	15–20 HP	20–25 HP	50 HP	50 HP
PSN-3F_F...	OS200J12	AF80N	EF96-100	Contact ABB	–	90 Amp	–	–	–	25 HP	30 HP	–	–
PSN-4F_F...	OS200J12	AF140N	EF146-150	Contact ABB	–	135 Amp	–	–	–	40 HP	50 HP	100 HP	125 HP

Standard cable range for combination contactors and starters (disconnect switches)

HP ProS starters	Fuse disconnect	Incoming lugs
PS-AF_F...	OS30FAJ12	1 x (18 AWG - 8 AWG)
PS-0F_F...	OS30FAJ12	1 x (18 AWG - 8 AWG)
PS-1F_F...	OS60GJ12	1 x (14 AWG - 4 AWG)
PS-2F_F...	OS100GJ12	1 x (8 AWG - 2/0 AWG)
PS-3F_F...	OS200J12	1 x (4 AWG - 300MCM)
PS-4F_F...	OS200J12	1 x (4 AWG - 300MCM)

NEMA ProS starters	Fuse disconnect	Incoming lugs
PSN-AF_F...	OS30FAJ12	1 x (18 AWG-8 AWG)
PSN-0F_F...	OS30FAJ12	1 x (18 AWG-8 AWG)
PSN-1F_L...	OS30FAJ12	1 x (18 AWG-8 AWG)
PSN-1F_F...	OS60GJ12	1 x (14 AWG-4 AWG)
PSN-2F_L...	OS60GJ12	1 x (14 AWG-4 AWG)
PSN-2F_F...	OS100GJ12	1 x (14 AWG-8 AWG)
PSN-3F_L...	OS100GJ12	1 x (14 AWG-8 AWG)
PSN-3F_F...	OS200J12	1 x (4 AWG-300MCM)
PSN-4F_F...	OS200J12	1 x (4 AWG-300MCM)

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NEMA enclosed starters with IEC-style components

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Enclosed non-combination starters	
CR505 contactor, single- and 3-phase	1-127
CR506 non-reversing, single- and 3-phase	1-127
CR509 reversing, single- and 3-phase	1-127

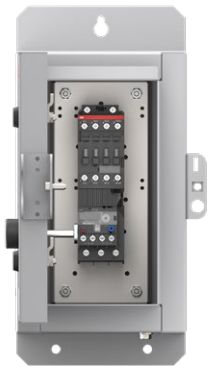
Accessories/kits	
Enclosure kits	1-134

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500-line starters

Product overview

NEMA sizes 00–4
600 V maximum 50/60 Hz
100 hp maximum



CR506H1020259AAAP

ABB's latest technology of AF contactors with electronically controlled coils offers the benefits of a traditional IEC-style contactor while still having NEMA ratings for use in UL required markets. Especially suitable for handling the switching of resistance heating and capacitor circuit loads, their compact size also fits the needs of the panel building industry. In addition, they may be used for controlling AC motors where overload protection is provided separately.

Features

- The electronic system within the AF contactor continuously monitors the current and voltage apply to the coil. The contactor is safely operated in an always optimized condition and hum-free.
- AF coil and energy consumption is reduced up to 80%. This allows a reduction of the temperature rise, the size of control transformers and size of cabinets.
- With conventional contactor technology, use of an external surge suppressor is recommended. With AF technology, surges are handled by the contactor and never reach the control circuit.
- Attractive, modern, squared-off enclosure.
- Motor full-load current should not exceed continuous ampere rating of contactor.

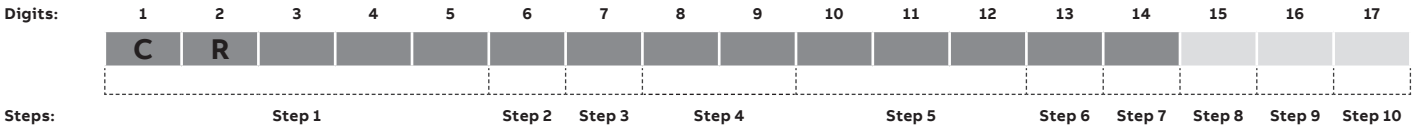
Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4



To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–5) product line code

Product line	Code
Contactor, single and 3-phase	CR505
Non-reversing starter, single and 3-phase	CR506
Reversing starter, 3-phase	CR509

Step 2 (digit 6) input voltage

Input voltage	Phases	Code
120 V (max 7.5 hp)	Single-phase	J
240 V (max 15 hp)	Single-phase	M
208 V (max 40 hp)	Three-phase	C
240 V (max 50 hp)	Three-phase	E
480 V (max 100 hp)	Three-phase	H
600 V (max 100 hp)	Three-phase	N

Step 3 (digit 7) enclosure type

Enclosure type	Code
NEMA 1	1
NEMA 12	2
NEMA 4X	4
NEMA 3R	6

Step 4 (digits 8, 9) control voltage

Control circuit (coil) voltage and CPT	Phases	No CCF No CPT	CCF No CPT	CCF CPT
120 V	Three-phase	02	F2	-
208 V	Three-phase	08	F8	-
240 V	Three-phase	03	F3	-
480 V	Three-phase	04	F4	-
600 V	Three-phase	05[1]	F5[1]	-
24 V	Three-phase	09	F9	-
240 V/120 V with CPT	Three-phase	-	-	93
480 V/120 V with CPT	Three-phase	-	-	94
600 V/120 V with CPT	Three-phase	-	-	95
208 V/120 V with CPT	Three-phase	-	-	98
120 V	Single-phase	02	F2	-
240 V	Single-phase	03	F3	-
120 V/24 V with CPT	Single-phase	-	-	S2
240 V/120 V with CPT	Single-phase	-	-	93
240 V/24 V with CPT	Single-phase	-	-	S3

[1]Coil with line voltage 575–600 V AC is not available

Step 5 (digits 10–12) horsepower rating

Horsepower rating	Phases	Code
¼	Single-phase	00A
½	Single-phase	00B
¾	Single-phase	00C
1	Single- and three-phase	001
1.5	Single- and three-phase	00D
2	Single- and three-phase	002
3	Single- and three-phase	003
5	Single- and three-phase	005
7.5	Single- and three-phase	007
10	Single- and three-phase	010
15	Single- and three-phase	015
20	Three-phase	020
25	Three-phase	025
30	Three-phase	030
40	Three-phase	040
50	Three-phase	050
60	Three-phase	060
75	Three-phase	075
100	Three-phase	100

Step 6 (digit 13) overload relay

Overload relay	Contacts	Code
Thermal overload, Class 10	Standard (1 NO + 1 NC)	9
Electronic overload[2]	Standard (1 NO + 1 NC)	X
No overload[3]		Z

[2]Not available with single phase
[3]Not available with non-reversing (CR506) or reversing starters (CR509)

Step 7 (digit 14) auxiliary contacts

Auxiliary contacts	Code
None	A
1 NO + 1 NC	D
2 NO + 2 NC[4]	N

[4]Not available with reversing starters (CR509)

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1					Step 2	Step 3	Step 4			Step 5			Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 8 (digit 15) pushbutton/selector switch
Not valid for reversing starters; see following table

Pushbutton/selector switch	Code
None	A
Start (black) / Stop (red) pushbutton	J
Hand – off – auto (HOA) selector switch	L
Off – on selector switch	M

Step 8 (digit 15) pushbutton/selector switch
For reversing starters only

Pushbutton/selector switch	Code
None	A
FWD/REV/Stop pushbutton	J
HOA and FWD-REV selector switch	P
FWD-OFF-REV selector switch	T

Step 9 (digit 16) pilot lights (LED)
Not valid for reversing starters; see following table

Pilot light	Code
None	A
Red (across coil)	1
Red (across coil) and green (through NC auxiliary contact)	6

Step 9 (digit 16) pilot lights (LED)
For reversing starters only

Pilot light	Code
None	A
Red (across coil)	2

Step 10 (digit 17) overload range
Thermal overload
3-phase, 208 V

Horsepower rating	Overload range (A)	Code
½	1.7 to 2.3	A
½ ¾	2.3 to 3.1	B
¾ 1	3.1 to 4.2	C
1 1.5 2	4.2 to 5.7	D
1.5 2	5.7 to 7.6	E
2 3	7.6 to 10	F
3 5	10 to 13	G
5	13 to 16	H
5 7.5 10	16 to 20	J
7.5 10	20 to 24	K
7.5 10	24 to 29	L
10	29 to 35	M
10	35 to 38	N
15	30 to 40	P
15 20	36 to 47	Q
15 20	44 to 53	R
20	50 to 60	S
20	57 to 67	T
25	48 to 60	U
25 30	57 to 68	V
25 30	65 to 78	W
25 30	75 to 87	X
30	84 to 96	Y
40	66 to 90	1
40	80 to 110	2
40	100 to 135	3
50	80 to 110	4
50 60	100 to 135	5
50 60	110 to 150	6
50 60	130 to 175	7
60	150 to 200	8

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1					Step 2	Step 3	Step 4		Step 5			Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 17) overload range (continued)
Thermal overload
3-phase, 240 V

Horsepower rating	Overload range (A)	Code
½	1.3 to 1.7	A
½	1.7 to 2.3	B
½ ¾	2.3 to 3.1	C
¾ 1	3.1 to 4.2	D
1 1.5 2	4.2 to 5.7	E
1.5 2 3	5.7 to 7.6	F
3	7.6 to 10	G
3 5	10 to 13	H
5	13 to 16	J
5 7.5	16 to 20	K
7.5 10	20 to 24	L
7.5 10	24 to 29	M
10	29 to 35	N
15	30 to 40	P
15 20	36 to 47	Q
15 20	44 to 53	R
20 25	50 to 60	S
20 25	57 to 67	T
30	57 to 68	U
30	65 to 78	V
30	75 to 87	W
30	84 to 96	X
40	66 to 90	Y
40 50	80 to 110	1
40 50	100 to 135	2
50	110 to 142	3
60	110 to 150	4
60	130 to 175	5
60 75	150 to 200	6

Step 10 (digit 17) overload range
Thermal overload
3-phase, 480 V

Horsepower rating	Overload range (A)	Code
½	0.74 to 1.0	A
½ ¾	1 to 1.3	B
¾ 1	1.3 to 1.7	C
¾ 1 1.5	1.7 to 2.3	D
1.5 2	2.3 to 3.1	E
1.5 2 3	3.1 to 4.2	F
3	4.2 to 5.7	G
5	5.7 to 7.6	H
5 7.5	7.6 to 10	J
7.5 10	10 to 13	K
10 15	13 to 16	L
15	16 to 20	M
15 20	20 to 24	N
20 25	24 to 29	P
20 25	29 to 35	Q
25	35 to 38	R
30	30 to 40	S
30 40	36 to 47	T
40 50	44 to 53	U
40 50	50 to 60	V
50	57 to 67	W
60	57 to 68	X
60 75	65 to 78	Y
60 75	75 to 87	1
75	84 to 96	2
100	80 to 110	3
100	110 to 135	4
100	110 to 142	5
125	110 to 150	6
125 150	130 to 175	7
150	150 to 200	8

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:			Step 1			Step 2	Step 3		Step 4			Step 5		Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 17) overload range (continued)
Thermal overload
3-phase, 600 V

Horsepower rating	Overload range (A)	Code
½	0.55 to 0.74	A
½ ¾	0.74 to 1.0	B
½ ¾	1.0 to 1.3	C
¾ 1	1.3 to 1.7	D
1 1.5 2	1.7 to 2.3	E
1.5 2 3	2.3 to 3.1	F
3	3.1 to 4.2	G
3 5	4.2 to 5.7	H
5 7.5	5.7 to 7.6	J
7.5 10	7.6 to 10	K
7.5 10 15	10 to 13	L
15	13 to 16	M
15 20	16 to 20	N
20 25	20 to 24	P
20 25	24 to 29	Q
25 30	29 to 35	R
30	35 to 38	S
40	30 to 40	T
40 50 60	36 to 47	U
40 50 60	44 to 53	V
50 60	50 to 60	W
60	57 to 67	X
75	57 to 68	Y
75	65 to 78	1
75	75 to 87	2
75	84 to 96	3
100	66 to 90	4
100 125	80 to 110	5
100 125	100 to 135	6
125	110 to 142	7
150	100 to 135	8
150	110 to 150	9
150	130 to 175	0

Step 10 (digit 17) overload range
Thermal overload
Single-phase, 120 V

Horsepower rating	Overload range (A)	Code
1/4 1/3	4.2 to 5.7	A
1/4 1/3 ½	5.7 to 7.6	B
1/3 ½ ¾	7.6 to 10	C
½ ¾ 1	10 to 13	D
¾ 1 1.5	13 to 16	E
1 1.5 2	16 to 20	F
1.5 2	20 to 24	G
2	24 to 29	H
3	25 to 33	J
3	30 to 40	K
5	36 to 47	L
5	44 to 53	M
5	50 to 60	N
5 7.5	57 to 67	P
7.5	75 to 87	Q
7.5	84 to 96	R

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1					Step 2	Step 3	Step 4			Step 5			Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 17) overload range (continued)
Thermal overload
Single-phase, 240 V

Horsepower rating	Overload range (A)	Code
¼	1.7 to 2.3	A
¼ ⅓	2.3 to 3.1	B
¼ ⅓ ½	3.1 to 4.2	C
½ ¾	4.2 to 5.7	D
¾ 1 1.5	5.7 to 7.6	E
¾ 1 1.5 2	7.6 to 10	F
1 1.5 2 3	10 to 13	G
2 3	13 to 16	H
3	16 to 20	J
5	20 to 24	K
5	24 to 29	L
5	29 to 35	M
7.5	25 to 33	N
7.5 10	30 to 40	P
7.5 10	36 to 47	Q
10 15	44 to 53	R
10 15	50 to 60	S
15	57 to 67	T
20	65 to 78	U
20	75 to 87	V
20	84 to 96	W

Step 10 (digit 17) overload range
Electronic overload
3-phase, 208 V

Horsepower rating	Overload range (A)	Code
½ ¾ 1 1.5 2 3	1.9 to 6.3	A
1.5 2 3 5	5.7 to 18.9	B
7.5	9 to 30	C
10	15 to 45	D
15	20 to 56	E
20	25 to 70	F
25 30	36 to 100	G
40	54 to 150	H
50 60	63 to 210	J
75 100 125	115 to 380	K
150	150 to 500	L

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:			Step 1			Step 2	Step 3		Step 4			Step 5		Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 17) overload range (continued)
Electronic overload
3-phase, 240 V

Horsepower rating	Overload range (A)	Code
½ ¾ 1 1.5	0.8 to 2.7	A
¾ 1 1.5 2	1.9 to 6.3	B
2 3 5	5.7 to 18.9	C
7.5	9 to 30	D
10 15	15 to 45	E
20 25	25 to 70	F
30	36 to 100	G
40 50	54 to 150	H
60 75	63 to 210	J
100 125 150	115 to 380	K
200	150 to 500	L

Step 10 (digit 17) overload range
Electronic overload
3-phase, 480 V

Horsepower rating	Overload range (A)	Code
½ ¾ 1	0.8 to 2.7	A
1.5 2 3	1.9 to 6.3	B
5 7.5 10	5.7 to 18.9	C
15 20	9 to 30	D
20 25	15 to 45	E
30 40	20 to 56	F
40 50	25 to 70	G
60 75	36 to 100	H
100	54 to 150	J
125 150	63 to 210	K
200 250 300	115 to 380	L
350 400	150 to 500	M

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NEMA enclosed starters with IEC-style components

500-line

Ordering code configuration
Valid for NEMA sizes 0–4

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	C	R															
Steps:	Step 1					Step 2	Step 3	Step 4			Step 5			Step 6	Step 7	Step 8	Step 9	Step 10

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 17) overload range (continued)
Electronic overload
3-phase, 600 V

Horsepower rating	Overload range (A)	Code
½ ¾ 1 1.5 2	0.8 to 2.7	A
2 3 5	1.9 to 6.3	B
7.5 10 15	5.7 to 18.9	C
20 25	9 to 30	D
25 30	15 to 45	E
40 50	20 to 56	F
60	25 to 70	G
75	36 to 100	H
100 125	54 to 150	J
150 200	63 to 210	K

Step 10 (digit 17) overload range
Electronic overload
Single-phase, 120 V

Horsepower rating	Overload range (A)	Code
¼	1.9 to 6.3	A
¼ ⅓ ½ ¾ 1 1.5	5.7 to 18.9	B
2	9 to 30	C
3 5	20 to 56	D
7.5	36 to 100	E

Step 10 (digit 17) overload range
Electronic overload
Single-phase, 240 V

Horsepower rating	Overload range (A)	Code
¼ ⅓ ½	1.9 to 6.3	A
¾ 1 1.5 2 3	5.7 to 18.9	B
5	9 to 30	C
7.5 10	20 to 56	D
15	25 to 70	E
20	36 to 100	F

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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NEMA enclosed starters with IEC-style components

Enclosure kits

Enclosure kits include: enclosure, ground wire, installation instructions for internal components and pre-drilled mounting holes. Internal components such as contactors, overloads and control power transformers must be purchased separately.

Enclosure kits

Type code	Ordering code	For use with	Space in enclosure for control power transformer	Pilot device knockout holes	NEMA type enclosure
ENCX1W113C5	1SQA012852R0001	AF09-38, AF..N00-1, DP20-60, CR360 30A contactors	Yes	Yes	1
		CR460 contactors	No	Yes	
ENCX1W112C1	1SQA012844R0001	AF09-30, AFN00-1, DP60, CR360 30A contactors	No	No	1
ENCX1W115C4	1SQA012861R0001	AF40-65/AFN, DP75-90, CR360 60A, CR460 30A contactors	Yes	Yes	1
ENCX1W114C1	1SQA012854R0001	AF38-65, AF..N2, DP75-90, CR360 60A contactors	No	No	1
ENCX1W117C1	1SQA012868R0001	AF80-96, AF..N3 contactors, starters, reversers	Yes	Yes	1
ENCX1W117C2	1SQA012869R0001	AF80-96, AF..N3 contactors, starters, reversers	No	No	1
ENCX1W117C5	1SQA012872R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	Yes	1
ENCX1W117C6	1SQA012873R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	No	1
ENCX2W112C1	1SQA012769R0001	AF09-30, AF..N00-1, DP-60, CR360L 30A contactors	No	No	12/3R
ENCX2W112C2	1SQA012770R0001	AF09-30, AF..N00-1 starters	No	No	12/3R
ENCX2W112C3	1SQA012771R0001	AF09-30, AF..N00-1 Reversing starters + Electronic overload	No	No	12/3R
ENCX2W112C4	1SQA012772R0001	AF09-30, AF..N00-1 Reversing starters + Thermal overload	No	No	12/3R
ENCX2W113C4	1SQA012776R0001	AF09-38, AF..N00-1 starters and reversers	Yes	Yes	1
ENCX2W113C5	1SQA012777R0001	AF09-38, AF..N00-1, DP20-60, CR360L 30A contactors	Yes	Yes	1
		CR460 contactors	No	Yes	
ENCX2W114C1	1SQA012779R0001	AF38-65, AF..N2, DP75-90, CR360L 60A starters	No	No	1
ENCX2W114C2	1SQA012780R0001	AF38-65, AF..N2 starters	No	No	1
ENCX4W105C5	1SQA012814R0001	AF09-38, AF..N00-1 ,DP20-60, CR360L 30A contactors	Yes	Yes	4X
		CR460 contactors	No	Yes	
ENCX4W107C4	1SQA012823R0001	AF40-65/AF..N, DP75-90, CR360 60A, CR460 30 A contactors	Yes	Yes	4X
ENCX4W109C1	1SQA012831R0001	AF80-96, AF..N3 contactors, starters, reversers	Yes	Yes	4X
ENCX4W109C2	1SQA012832R0001	AF80-96, AF..N3 contactors, starters, reversers	No	No	4X
ENCX4W109C5	1SQA012835R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	Yes	4X
ENCX4W109C6	1SQA012836R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	No	4X
ENCX4W104C1	1SQA012806R0001	AF09-30, AF..N00-1, DP-60, CR360 30 A contactors	No	No	4X
ENCX4W106C1	1SQA012816R0001	AF38-65, AF..N2, DP75-90, CR360L 60A starters	No	No	4X
ENCX1W113C4	1SQA012851R0001	AF09-38, AF..N00-1 starters and reversers	Yes	Yes	12/3R
ENCX1W115C2	1SQA012859R0001	AF40-65, AF..N2 starters and reversers	Yes	Yes	12/3R
ENCX1W112C2	1SQA012845R0001	AF09-30, AF..N00-1 starters	No	No	12/3R
ENCX1W114C2	1SQA012855R0001	AF38-65, AF..N2 starters	No	No	12/3R
ENCX2W114C3	1SQA012781R0001	AF38-65, AF..N2 reversers with TF42, 65, EF45 overload	No	No	12/3R
ENCX2W114C4	1SQA012782R0001	AF38-65, AF..N2 Reverser with EF65 overload	No	No	12/3R
ENCX2W115C2	1SQA012784R0001	AF40-65, AF..N2 starters and reversers	Yes	Yes	12/3R
ENCX2W115C4	1SQA012786R0001	AF40-65/AF..N, DP75-90, CR360 60 A, CR460 30 Amps contactors	Yes	Yes	12/3R
ENCX4W105C4	1SQA012813R0001	AF09-38, AF..N00-1 starters and reversers	Yes	Yes	4X
ENCX4W107C2	1SQA012821R0001	AF40-65, AF..N2 starters and reversers	Yes	Yes	4X
ENCX4W104C3	1SQA012808R0001	AF09-30, AF..N00-1 starters	No	No	4X
ENCX4W106C2	1SQA012817R0001	AF38-65, AF..N2 starters	No	No	4X
ENCX1W112C4	1SQA012847R0001	AF09-30, AF..N00-1 reversers with Thermal overload	No	No	1
ENCX1W112C3	1SQA012846R0001	AF09-30, AF..N00-1 reversers with Electronic overloads	No	No	1
ENCX1W114C3	1SQA012856R0001	AF38-65, AF..N2 reversers with TF42, 65, EF45 overloads	No	No	1
ENCX1W114C4	1SQA012857R0001	AF38-65, AF..N2 reversers with EF65 overloads	No	No	1
ENCX2W117C1	1SQA012793R0001	AF80-96, AF..N3 contactors, starters, reversers	Yes	Yes	12/3R
ENCX2W117C2	1SQA012794R0001	AF80-96, AF..N3 contactors, starters, reversers	No	No	12/3R
ENCX2W117C5	1SQA012797R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	Yes	12/3R
ENCX2W117C6	1SQA012798R0001	AF116-146, AF..N4 contactors, starters, reversers	Yes	No	12/3R
ENCX4W104C4	1SQA012809R0001	AF09-30, AF..N00-1 reversers with Electronic/Thermal overload	No	No	4X
ENCX4W106C3	1SQA012818R0001	AF38-65, AF..N2 reversers with TF42, 65, EF45 overload	No	No	4X
ENCX4W106C4	1SQA012819R0001	AF38-65, AF..N2 reversers with EF65 overload	No	No	4X

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Overload relays

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Thermal overload relays

CR324 product overview

600 V AC/250 V DC, 3-pole
135 maximum amperes continuous

The panel-mount block overload relay provides overload protection for motors having full-load currents up to 135 amperes. The relays are furnished complete for use on control panels. When an overload condition occurs in any of the three legs in which heaters are inserted, it will cause the relay to trip, opening a normally closed contact, and, as an option, closing a normally open contact.

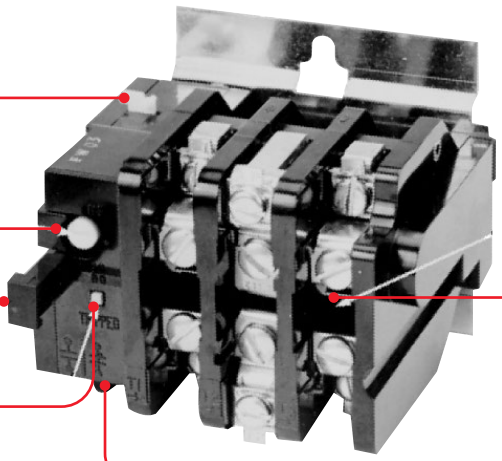
Standard and ambient compensated forms with various contact arrangements are available. A normally open circuit may be connected to a signal light, an alarm bell or input circuit of a programmable controller, e.g., to provide indication of an overload relay trip.

Features

- Flexibility of operation — trip rating can be easily changed by replacing the front-accessible heaters.
- Dual bimetal current monitoring — additional bimetal strip "anticipates" the rate of temperature rise in the motor winding, effectively reducing trip time in locked rotor conditions. It prevents dangerous temperature overshoot in the motor windings.

Ordering code selection instructions

1. Order required relay by complete ordering code as shown in table.
   Example: An open block-type relay with one normally closed contact is to be mounted in a control panel. Three-leg overload protection is needed and the full-load current of the motor being controlled is 40.5 amperes. Order: CR324D310A and three CR123C400B heaters.



Typical 300-line overload relay with heater shown in center pole only

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Thermal overload relays

CR324 thermal overload relays

Block overload relays

Current rating (amps)	NEMA size	Contact configuration	Manual reset		Automatic reset	
			Standard panel-mount	Ambient-compensated panel-mount	Standard panel-mount	Ambient-compensated panel-mount
			Ordering code	Ordering code	Ordering code	Ordering code
27	1	1NC	CR324C310A	CR324C610A	CR324C310A1[1]	CR324C610A1[1]
27	1	1NO–1NC	CR324C360A	CR324C660A	–	–
45	2	1NC	CR324D310A	CR324D610A	CR324D310A1[1]	CR324D610A1[1]
45	2	1NO–1NC	CR324D360A	CR324D660A	–	–
90	3	1NC	CR324E310A	CR324E610A	CR324E310A1[1]	CR324E610A1[1]
90	3	1NO–1NC	CR324E360A	CR324E660A	–	–
135	4	1NC	CR324F310A	CR324F610A	CR324F310A1[1]	CR324F610A[1]
135	4	1NO–1NC	CR324F360A	CR324F660A	–	–

[1]For NO/NC (SPDT) contact forms, contact nearest ABB Representative.

Contact ratings

Continuous rating amperes	Make amperes	Recommended maximum interrupting capacity, amperes					
		DC circuits		AC circuits			
AC or DC		125 V	250 V	115 V	230 V	460 V	575 V
10	30	0.35	0.17	3	1.5	0.75	0.6

Accessories

External reset kit

Enclosure type	NEMA size	Reset distance (in.) behind panel	Ordering code
NEMA Type 1 NEMA Type 12	00–5	1–6	CR124X100C
NEMA Type 4/4X	00–5	1–6	CR124X100D

For single or block overload relays and 200-, 300- and 400-line starters.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Solid-state overload relays

CR324X product overview

3-pole, 600 V AC



CR324CXCS

Features

- 2:1 Adjustable full load amps with tactile feedback dial
- Selectable 10/20/30 protection class
- Ambient insensitive within the stated operating temperature range of –20 °C to +70 °C
- Built-in thermal memory to prevent hot motor restarts
- Protection against complete phase current loss
- Manual reset (standard) and remote reset (optional) 120 V AC
- Accuracy: ± 2%
- Repeatability: ± 2%
- Self-powered at 50% of minimum current range
- Size: 1–6 (0.40 A–540 A, 600 V, 50/60 Hz)
- Unbalance trip signal for PLC operation
- Manual trip
- Visual trip indication
- Standard isolated 1 NO and 1 NC auxiliary contact (A600, Q600)
- Built-in line/load straps
- Fits with existing 300-line starters
- Power factor correction terminals (sizes 1–4)
- DIN rail mountable sizes 1 and 2

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Solid-state overload relays

CR324X solid-state overload relays

Solid-state overload relays

Setting range amps	NEMA size	Fuse max. amps	Breaker max amps	Continuous amp rating	Panel mount Ordering code	MRO and replacement Ordering code
0.4–0.85	00–1	3	15	27	CR324CXCP	CR324CXCS
0.8–1.7	00–1	6	15	27	CR324CXDP	CR324CXDS
1.6–3.4	00–1	12	15	27	CR324CXEP	CR324CXES
3.2–6.8	00–1	25	25	27	CR324CXFP	CR324CXFS
6.5–13.5	00–1	50	50	27	CR324CXGP	CR324CXGS
13–27	00–1	100	100	27	CR324CXHP	CR324CXHS
6.5–13.5	2	50	50	45	CR324DXGP	CR324DXGS
13–27	2	100	100	45	CR324DXHP	CR324DXHS
25–50	2	200	200	45	CR324DXJP	CR324DXJS
17–35	3	125	125	90	CR324FXKP	CR324FXKS[1]
35–70	3	250	250	90	CR324FXLP	CR324FXLS[1]
65–135	3	500	400	90	CR324FXMP	CR324FXMS[1]
17–35	4	125	125	135	CR324FXKP	CR324FXKS[1]
35–70	4	250	250	135	CR324FXLP	CR324FXLS[1]
65–135	4	500	400	135	CR324FXMP	CR324FXMS[1]
35–70	5	–	–		–	CR324GXNS[2]
65–135	5	500	400		–	CR324GXPS[2]
130–270	5	600	800		–	CR324GXQS[2]
130–270	6	1200	800		–	CR324HXSK[3]
260–540	6	1200	800		–	CR324HXTK[3]
130–270	6	1200	800		–	CR324HXSS[4]
260–540	6	1200	800		–	CR324HXTS[4]

[1]Reset is approximately 1" longer than on equivalent bimetal overloads. For ABB 300-line enclosures, perform the actions noted in the enclosure reset extension type table
[2]May be used as replacement for bimetal overload on size 5 starters. Use existing CTs.
[3]Must be used as solid-state replacement for bimetal overloads on size 6; since CT ratio changes, CTs are included.
[4]May be used as a replacement for existing solid-state overload on size 6. Use existing CTs.

Enclosure reset extension type	Adjustment required
Threaded rod (standard)	Cut threaded shaft 1" and adjust for ⅛" gap
"U" style, 2⅛" long	Replace extension with ordering code 55-512811G005
"U" style, 1½" long	Replace extension with ordering code 55-512811G002

Solid-state overload relay options

Item	NEMA size	Voltage	Ordering code
Remote reset	1–6	120 V AC	CR324XRRM02
Panel-mount adapter	1	–	CR324CXPMA
	2	–	CR324DXPMA

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Heaters

Product overview and selection

Magnetic starters — full voltage

Heater selection information

To prevent overloading the starter, do not select heater(s) for a motor of larger rating than the maximum given on the nameplate for the starter.

For continuous rated motors with a service factor of 1.15 to 1.25, select the heater with maximum motor amperes equal to or immediately greater than the motor full-load current (provides a maximum of 125% protection). For continuous rated motors with no service factor, multiply the full-load current of the motor by 0.90 and use this value to select the heater.

To protect the heater and starter during a short circuit, provide motor-branch-circuit protection in accordance with Table 430–152 in Article 430 of the National Electrical Code. In no case should the fuse rating exceed 4 times the motor full-load current for single-element fuses, or 2.25 times for dual-element fuses, or the fuse size listed in heater table under maximum fuse rating.

Caution: Overload relays, when furnished with automatic reset, should not be used with two-wire, maintained contact pilot devices such as pressure, float and limit switches, because inadvertent restarting of the motor can occur.

How to select heaters

The table below should be used to determine which column of motor full-load amperes applies for heater selection. Select in order, the basic device — including ordering code and description, the NEMA type of enclosure and the column to be used in the proper table by NEMA size.

If full-load amperes of the motor falls between two ratings, select heaters for the higher rating.

Ordering information

CR123F heaters being ordered for either customer's stock or any other purpose are to be specified in multiples of three (such as 3, 6, 9, 12, 15, etc.). Minimum order quantity is three.

Base ordering code starter/overload relay	Description	NEMA type enclosure	Quantity heaters required		Heater table column
CR306	Single-phase, 2-pole, size 00–2	Open	1		A
	Single-phase, 2-pole, size 00–2	1, 3R, 4/4X, 12	1		B
	Single-phase, 2-pole, size 3	Open	2		A
	Single-phase, 2-pole, size 6	1, 3R, 4/4X, 12	2		B
CR306	3-Phase, 3-pole, 3-leg protection	Open	3		C
	Standard, size 00–5				
	Ambient compensated, size 00, 0, 1, 2 and 5	Open	3		C
	Ambient compensated, size 3	Open	3		D
	Ambient compensated, size 8	Open	3		E
CR306, CR307, CR308, CR387, CR407, CR408, CR487	3-Phase, 3-pole, 3-leg protection				
	Standard, size 00–5	1, 3R, 4/4X, 12	3		D
	Ambient compensated, size 00, 0, 1, 2 and 5	1, 3R, 4/4X, 12	3		C
	Ambient compensated, size 3	1, 3R, 4/4X, 12	3		D
	Ambient compensated, size 8	1, 3R, 4/4X, 12	3		E
CR309	3-Phase, 3 3-pole, 3-leg protection				
	Standard, size 00–5	Open	3-Reverser	6-Two-speed	C
	Ambient compensated, size 00, 0, 1, 2 and 5	Open	3-Reverser	6-Two-speed	C
	Ambient compensated, size 3	Open	3-Reverser	6-Two-speed	D
	Ambient compensated, size 8	Open	3-Reverser	6-Two-speed	E
CR309, CR410, CR411, CR490	3-Phase, 3 3-pole, 3-leg protection				
	Standard, size 00–5	1, 3R, 4/4X, 12	3-Reverser	6-Two-speed	D
	Ambient compensated, size 00, 0, 1, 2 and 5	1, 3R, 4/4X, 12	3-Reverser	6-Two-speed	C
	Ambient compensated, size 3	1, 3R, 4/4X, 12	3-Reverser	6-Two-speed	D
	Ambient compensated, size 8	1, 3R, 4/4X, 12	3-Reverser	6-Two-speed	E
CR324	Panel-mounted				See tables
All NEMA sizes 6–9	3-Phase, 3-leg protection, standard				See tables

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Heaters

CR123 heaters NEMA size 00–2

All CR123C and CR123F heaters are packaged three to a carton. Items of these heaters, being ordered for either customer's stock or any other purpose, are to be specified in multiples of three (such as 3, 6, 9, 12, 15, etc.). Minimum order quantity is three.

NEMA sizes 00, 0 and 1

Max. motor full-load amperes				
A	B	C	D	Heater ordering code
0.48	0.46	0.45	0.43	CR123C054A
0.55	0.50	0.49	0.48	CR123C060A
0.57	0.57	0.53	0.53	CR123C066A
0.65	0.62	0.59	0.58	CR123C071A
0.69	0.68	0.65	0.64	CR123C078A
0.83	0.80	0.76	0.74	CR123C087A
0.97	0.91	0.84	0.84	CR123C097A
1.03	0.99	0.93	0.92	CR123C109A
1.12	1.09	1.04	1.02	CR123C118A
1.26	1.22	1.15	1.10	CR123C131A
1.40	1.31	1.27	1.23	CR123C148A
1.46	1.46	1.39	1.38	CR123C163A
1.63	1.59	1.55	1.49	CR123C184A
1.79	1.74	1.73	1.67	CR123C196A
1.97	1.93	1.89	1.79	CR123C220A
2.25	2.13	2.05	1.98	CR123C239A
2.43	2.37	2.28	2.24	CR123C268A
2.60	2.52	2.47	2.43	CR123C301A
2.96	2.87	2.79	2.75	CR123C326A
3.57	3.39	3.31	3.25	CR123C356A
3.86	3.59	3.70	3.43	CR123C379A
4.43	4.31	4.06	4.03	CR123C419A
4.87	4.57	4.47	4.43	CR123C466A
5.37	5.31	4.95	4.94	CR123C526A
5.99	5.86	5.49	5.36	CR123C592A
6.39	6.19	5.91	5.77	CR123C630A
6.87	6.61	6.47	6.35	CR123C695A
7.71	7.61	7.20	6.92	CR123C778A
8.72	8.46	8.22	7.99	CR123C867A
9.50	9.35	8.72	8.47	CR123C955A
10.5	10.4	9.67	9.19	CR123C104B
11.7	11.3	10.4	10.0	CR123C113B
12.2	11.9	11.0	10.7	CR123C125B
13.5	13.0	12.4	12.0	CR123C137B
15.1	14.5	13.2	12.9	CR123C151B
17.5	17.4	15.4	15.1	CR123C163B
18.9	18.6	17.1	16.3	CR123C180B
20.8	20.5	18.1	17.9	CR123C198B
22.4	22.3	20.0	19.7	CR123C214B
25.5	24.7	21.5	21.2	CR123C228B
26.2	25.7	22.5	22.3	CR123C250B
27.0	27.0	23.9	23.5	CR123C273B
–	–	26.3	25.5	CR123C303B
–	–	27.0	27.0	CR123C330B

NEMA size 1P

Max. motor full-load amperes		
A	B	Heater ordering code
14.2	14.2	CR123C151B
17.3	17.3	CR123C163B
18.7	18.7	CR123C180B
20.6	20.6	CR123C198B
22.5	22.5	CR123C214B
24.7	24.7	CR123C228B
25.5	25.5	CR123C250B
26.7	26.7	CR123C273B
27.9	27.9	CR123C303B
32.1	32.1	CR123C330B
36.0	36.0	CR123C366B

NEMA size 2

Max. motor full-load amperes				
A	B	C	D	Heater ordering code
5.92	5.79	5.85	5.72	CR123C592A
6.23	6.12	6.47	6.30	CR123C630A
6.63	6.49	7.35	7.04	CR123C695A
7.72	7.59	8.06	7.91	CR123C778A
8.96	8.71	9.03	8.80	CR123C867A
9.92	9.19	9.61	9.27	CR123C955A
10.4	10.1	10.5	9.99	CR123C104B
11.7	11.2	11.6	11.1	CR123C113B
12.1	11.9	12.5	12.1	CR123C125B
13.5	12.6	13.6	13.1	CR123C137B
14.7	14.5	16.7	15.5	CR123C151B
18.3	17.7	17.9	16.8	CR123C163B
20.1	19.1	18.7	18.0	CR123C180B
22.3	21.4	20.4	19.7	CR123C198B
25.0	22.9	22.7	21.6	CR123C214B
27.7	24.7	24.7	23.9	CR123C228B
29.3	25.9	26.3	25.5	CR123C250B
30.7	27.1	29.5	28.2	CR123C273B
32.7	30.2	32.5	31.6	CR123C303B
35.6	34.8	36.7	34.7	CR123C330B
39.4	38.7	41.9	37.8	CR123C366B
45.0	45.0	43.2	40.6	CR123C400B
–	–	45.0	45.0	CR123C440B
–	–	–	–	CR123C460B

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Heaters

CR123 heaters NEMA size 3–5

All CR123C and CR123F heaters are packaged three to a carton. Items of these heaters, being ordered for either customer's stock or any other purpose, are to be specified in multiples of three (such as 3, 6, 9, 12, 15, etc.). Minimum order quantity is three.

NEMA size 3

Max. motor full-load amperes				
A	B	C	D	Heater ordering code
20.2	19.4	–	–	CR123F199B
21.0	20.1	–	–	CR123F218B
21.8	21.1	19.3	18.4	CR123F233B
24.5	24.6	22.1	21.1	CR123F243B
25.7	25.2	23.4	22.1	CR123F270B
29.2	29.2	27.0	26.1	CR123F300B
33.5	32.8	29.1	28.0	CR123F327B
37.0	35.1	31.8	31.3	CR123F357B
39.2	38.4	33.9	33.3	CR123F395B
42.7	40.4	37.6	34.3	CR123F430B
45.7	45.7	41.9	40.9	CR123F487B
48.4	48.9	47.7	44.7	CR123F567B
54.9	54.7	52.1	51.0	CR123F614B
62.7	58.6	55.8	52.0	CR123F658B
67.5	63.4	59.7	55.4	CR123F719B
77.1	72.3	68.1	63.3	CR123F772B
81.5	76.6	71.5	66.1	CR123F848B
86.3	83.8	78.2	73.5	CR123F914B
90.0	90.0	87.5	82.2	CR123F104C
–	–	90.0	90.0	CR123F114C

NEMA size 4

Max. motor full-load amperes			
C	D	E	Heater ordering code
32.2	32.0	32.0	CR123F357B
34.0	34.2	34.2	CR123F395B
36.8	36.7	36.7	CR123F430B
44.6	43.9	43.9	CR123F487B
48.4	46.6	46.6	CR123F567B
53.9	52.6	52.6	CR123F614B
57.4	55.6	55.6	CR123F658B
60.0	58.7	58.7	CR123F719B
69.5	67.1	67.1	CR123F772B
71.7	70.6	70.6	CR123F848B
79.9	76.3	76.3	CR123F914B
92.3	88.7	88.7	CR123F104C
97.0	93.4	93.4	CR123F114C
108.0	102.0	105.0	CR123F118C
118.0	110.0	114.0	CR123F133C
131.0	122.0	128.0	CR123F149C
135.0	131.0	131.0	CR123F161C
–	135.0	135.0	CR123F174C

NEMA size 5

Max. motor full-load amperes		
C	D	Heater ordering code
118	115	CR123C592A
128	125	CR123C630A
138	135	CR123C695A
155	151	CR123C778A
168	164	CR123C867A
184	179	CR123C955A
200	195	CR123C104B
221	215	CR123C113B
237	231	CR123C125B
262	255	CR123C137B
270	270	CR123C151B

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Heaters

CR123 heaters for CR324 overload relays

Overload relays

For CR324 standard and ambient compensated block overloads — panel-mounted.

All CR123C and 123F heaters are packaged three to a carton. Items of these heaters, being ordered for either customer's stock or any other purpose, are to be specified in multiples of three (such as 3, 6, 9, 12, 15, etc.). Minimum order quantity is three.

Three heaters

Max. motor full-load amperes	Heater ordering code	Max. fuse rating	Max. motor full-load amperes	Heater ordering code	Max. fuse rating
CR324C (Size 0, 1)					
0.39	CR123C054A	3	3.89	CR123C466A	15
0.42	CR123C060A	3	4.30	CR123C526A	15
0.45	CR123C066A	3	4.77	CR123C592A	15
0.51	CR123C071A	3	5.14	CR123C630A	20
0.56	CR123C078A	3	5.63	CR123C695A	20
0.65	CR123C087A	3	6.26	CR123C778A	25
0.73	CR123C097A	3	7.15	CR123C867A	25
0.81	CR123C109A	3	7.58	CR123C955A	30
0.90	CR123C118A	3	8.39	CR123C104B	30
1.00	CR123C131A	3	9.11	CR123C113B	35
1.10	CR123C148A	3	9.67	CR123C125B	35
1.21	CR123C163A	3	11.0	CR123C137B	40
1.35	CR123C184A	3	11.9	CR123C151B	45
1.50	CR123C196A	6	14.3	CR123C163B	50
1.64	CR123C220A	6	16.1	CR123C180B	60
1.78	CR123C239A	6	17.2	CR123C198B	60
1.98	CR123C268A	6	19.2	CR123C214B[1]	70
2.15	CR123C301A	6	20.6	CR123C228B[1]	80
2.42	CR123C326A	6	21.8	CR123C250B[1]	80
2.88	CR123C356A	10	23.4	CR123C273B[1]	80
3.22	CR123C379A	12	26.1	CR123C303B[1]	90
3.53	CR123C419A	12	27.0	CR123C330B[1]	90
CR324D (Size 2)					
5.14	CR123C630A	20	8.39	CR123C104B	30
5.63	CR123C695A	20	9.11	CR123C113B	35
6.26	CR123C778A	20	9.67	CR123C125B	35
7.15	CR123C867A	25	11.0	CR123C137B	40
7.58	CR123C955A	30	12.0	CR123C151B	45
14.4	CR123C163B	60	28.0	CR123C303B	100
16.3	CR123C180B	60	32.1	CR123C330B	110
17.3	CR123C198B	60	35.9	CR123C366B	125
19.3	CR123C214B	70	41.5	CR123C400B	150
20.9	CR123C228B	80	43.4	CR123C440B	150
22.9	CR123C250B	90	45.0	CR123C460B	150
24.7	CR123C273B	90	–	–	–

[1]Size 1 only.

Three heaters

Max. motor full-load amperes	Heater ordering code	Max. fuse rating	Max. motor full-load amperes	Heater ordering code	Max. fuse rating
CR324E (Size 3)					
18.0	CR123F233B	70	44.4	CR123F567B	175
20.5	CR123F243B	80	48.4	CR123F614B	175
21.7	CR123F270B	80	52.4	CR123F658B	200
25.1	CR123F300B	90	57.0	CR123F719B	225
27.0	CR123F327B	100	64.5	CR123F772B	225
30.5	CR123F357B	110	68.8	CR123F848B	250
32.5	CR123F395B	125	75.7	CR123F914B	275
33.9	CR123F430B	125	86.2	CR123F104C	275
38.9	CR123F487B	150	90.0	CR123F114C	300
CR324F (Size 4)					
30.5	CR123F357B	100	68.6	CR123F848B	250
32.5	CR123F395B	125	75.7	CR123F914B	275
33.9	CR123F430B	125	86.2	CR123F104C	275
38.9	CR123F487B	150	93.0	CR123F114C	300
44.4	CR123F567B	175	109.0	CR123F118C	350
48.4	CR123F614B	175	123.0	CR123F133C	400
52.4	CR123F658B	200	131.0	CR123F149C	400
57.0	CR123F719B	225	135.0	CR123F161C	400
64.5	CR123F772B	225	–	–	–

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

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Manual motor starters

CR101 product overview

1 hp maximum at 115 V or 230 V
¾ hp maximum at 277 V for 2-pole forms
25–60 Hz



CR101H



CR101H1



CR101H400H

The CR101 manual motor starters provide dependable overload protection for single-phase motors up to one horsepower (115 or 230 volts), and are an economical choice when undervoltage protection is not required.

Designed for starting and stopping single-phase motors up to 1 hp, these manual starters have provision for overload protection, and their low cost provides economical starter selection for applications where no undervoltage protection is required. This line of starters may be used on such equipment as grinders, conveyors, fans, mixers and blowers.

Features

- Terminal design — box terminals provide easy access for wiring.
- Molded plastic switch housing — protects starter mechanism.

Ordering code selection instructions
Order starter by complete ordering code and specify overload heater as a separate item by complete ordering code.

Examples:

1. A general-purpose enclosed starter for surface wall mounting is desired. The starter is to break both lines. Motor to be started with this device has a full-load current of 0.6 ampere.
   Order:
   (1) CR101H1 manual motor starter
   (1) CR123H074A heater
2. The complete combination surface-mounted station, CR101H12, may also be ordered by components, e.g., order (1) CR101X10 flush plate; (1) CR101X14 box; and (1) CR101H manual starter. The other complete general-purpose manual starters may also be broken down in this manner.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

CR101 single-phase manual motor starters



CR101H



CR101H1



CR101H400H

Open starters include an unmounted nameplate. Heaters can be selected from the table on the following pages and ordered as a separate item. One heater is required per starter (two for 2-speed forms and for combination starter CR101H13).

Toggle-operated non-reversing open

No. of poles	Ordering code
1	CR101Y[1]
2	CR101H[1]

Toggle-operated non-reversing enclosed NEMA type 1

No. of poles	Indicating light	Ordering code
1	No	CR101Y1[1]
2	No	CR101H1[1]
1	Yes	CR101Y11[2]
2	Yes	CR101H11[2]

Lever-operated non-reversing enclosed NEMA type 3/4/12

No. of poles	Hubs	Ordering code
1	¾-Inch hub on one end	CR101Y400H
2	¾-Inch hub on one end	CR101H400H
1	¾-Inch hub on both ends	CR101Y400J
2	¾-Inch hub on both ends	CR101H400J

Multi-speed enclosed NEMA type 1 surface mount

No. of poles	Indicating light	Ordering code
1	None	CR101Y600B
1	Two	CR101Y610B[2]
2	None	CR101H600B
2	Two	CR101H610B[2]

Multi-speed enclosed NEMA type 1 gray flush-plate

No. of poles	Indicating light	Ordering code
1	None	CR101Y600A
1	Two	CR101Y610A[2]
2	None	CR101H600A
2	Two	CR101H610A[2]

[1]Units are individually boxed and "poly-packed" 10 per carton as standard.
[2]Includes a 115/230-volt neon lamp(s). Not available at 277 volts.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

CR101 single-phase manual motor starters

Multi-speed enclosed NEMA type 1 stainless-steel flush-plate

No. of poles	Indicating light	Ordering code
1	None	CR101Y608A
1	Two	CR101Y618A[1]
2	None	CR101H608A
2	Two	CR101H618A[1]

[1]Includes a 115/230-volt neon lamp(s). Not available at 277 volts.

Combination device enclosed NEMA type 1

No. of poles	Description	Ordering code
2	CR101H + base unit HOA	CR101H12
2	2 (CR101H)	CR101H13

Maximum horsepower ratings — AC or DC continuous carry — 16 amperes

Ordering code	No. of poles	Horsepower at 32 V AC	Horsepower at 115 V AC	Horsepower at 230 V AC	Horsepower at 277 V AC	Horsepower at 115 V DC	Horsepower at 230 V DC
CR101Y	1	¼	1	1	—	1	¼
CR101H	2	¼	1	1	¾	1	1

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

CR101 single-phase manual motor starters



CR101JA1A



CR101BE1C

Pushbutton-operated non-reversing flush plate only

No. of poles	Pushbutton text	Ordering code
2	Start/Stop	CR101JA0A
2	On/Off	CR101JA0B
3	Start/Stop	CR101BA0A
3	On/Off	CR101BA0B

Pushbutton-operated non-reversing enclosed NEMA type 1

No. of poles	Pushbutton text	Ordering code
2	Start/Stop	CR101JA1A
2	On/Off	CR101JA1B
3	Start/Stop	CR101BA1A
3	On/Off	CR101BA1B

Pushbutton-operated multi-speed flush plate only

No. of poles	Pushbutton text	Ordering code
3	Fast/Stop/Slow	CR101BB0B

Pushbutton-operated multi-speed enclosed NEMA type 1

No. of poles	Pushbutton text	Ordering code
3	Fast/Stop/Slow	CR101BB1B

Pushbutton-operated reversing enclosed flush plate only

No. of poles	Pushbutton text	Ordering code
3	FWD/OFF/REV	CR101BE0A
3	FWD/STOP/REV	CR101BE0B
3	UP/STOP/DOWN	CR101BE0C

Pushbutton-operated reversing enclosed NEMA type 1

No. of poles	Pushbutton text	Ordering code
3	FWD/OFF/REV	CR101BE1A
3	FWD/STOP/REV	CR101BE1B
3	UP/STOP/DOWN	CR101BE1C

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

CR123 heaters for CR101 manual motor starters

Overload heater units for CR101H, CR101Y

All CR123H heaters are packaged as single units.

The table below gives a proper size heater to trip the switch on approximately 125% motor current. Listed values are for motors with 1.15–1.25 service factor. For motors with 1.0 service factor continuously, multiply full-load current of motor by 0.9 and use this value to select heater. Contact nearest ABB Representative for recommendation on heaters to be used with definite-purpose motors. If motor full-load amperes falls between two ratings, select heater for the highest of those two. For 1.35 service factor motors, multiply full-load current of motor by 1.15 and use this value to select heater(s).

Maximum motor full-load amperes	Heater ordering code
.48	CR123H055A
.53	CR123H061A
.58	CR123H067A
.65	CR123H074A
.71	CR123H082A
.78	CR123H090A
.86	CR123H099A
.95	CR123H108A
1.04	CR123H120A
1.14	CR123H132A
1.25	CR123H144A
1.37	CR123H158A
1.49	CR123H172A
1.63	CR123H188A
1.78	CR123H205A
1.95	CR123H224A
2.13	CR123H245A
2.32	CR123H267A
2.53	CR123H291A
2.76	CR123H317A
3.01	CR123H346A
3.27	CR123H377A
3.56	CR123H410A
3.88	CR123H446A
4.22	CR123H486A
4.60	CR123H529A
5.00	CR123H575A
5.43	CR123H625A
5.90	CR123H680A
6.41	CR123H739A
6.98	CR123H802A
7.60	CR123H873A
8.25	CR123H950A
8.95	CR123H103B
9.75	CR123H112B
10.6	CR123H122B
11.4	CR123H132B
12.5	CR123H144B
13.6	CR123H157B
14.8	CR123H171B
16.0	CR123H186B

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Manual motor starters

CR101 enclosure components



CR101X3



CR101X3



CR101X11



CR101X14

Enclosure components — single units

Description	Ordering code
Flush plate with 115/230-volt indicating light and screws	CR101X1
Standard flush plate with screws	CR101X2
Locking attachment (lock not included)	CR101X3
Cover (front with 115/230-volt neon indicating light and screws)	CR101X4
Standard cover (front with screws)	CR101X5
Enclosure back with screws (surface-mounting)	CR101X6
Stainless-steel flush plate with 115/230-volt indicating light and screws	CR101X7
Stainless-steel flush plate with screws	CR101X8

Combination plates and box

Description	Ordering code
Combination flush plate with hand-auto switch	CR101X10
Combination flush plate with hand-auto switch and 115/230-volt neon indicating light	CR101X11
Combination flush plate for (2) CR101 open starters	CR101X12
Combination flush plate for (2) CR101 open starters with (2) 115/230-volt neon indicating lights	CR101X13
Box (back) for combination forms	CR101X14

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

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Pumping panels

CR340, CR341 product overview

100 hp max. at 240 V, 600 hp max. at 600 V



CR340 pump panel

Specifically designed for outdoor installation, these pumping panels provide full voltage control of squirrel-cage pump motors. They offer protection from motor burnouts due to overloading, protection against untimely restarts after power failure and protection of motor circuit against damage from short circuits. Enclosure provides additional space for customer to mount desired modifications and accessories. Custom panel designs available upon request. Contact nearest ABB representative or authorized distributor for additional information.

Ordering code selection instructions

1. ABB pumping panels are specifically designed for outdoor installation. They provide full-voltage control of squirrel-cage pump motors. Overload, undervoltage, and short-circuit protection are included as standard.
2. ABB pumping panels are available with traditional NEMA Class 20 bimetal thermal overloads, Class 10/20/30 selectable and adjustable electronic overloads with phase loss protection and Class 10 adjustable thermal overloads with differential protection.
3. In addition, pump panels can be provided with no overload relay, Class 10 overloads with fixed heaters, adjustable trip and differential trip, standard NEMA Class 20 overload relays or the Class 10/20/30 electronic overload relay.
4. Product notes
   Fuse clips are sized for dual element time-delay fuses. Order heaters by complete ordering code.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR340 thermal magnetic breaker and instantaneous trip circuit breaker with thermal overload relay

Thermal magnetic circuit breaker type

Coil voltage (60 Hz)[1]	NEMA size	Max. horsepower (3-phase)	CB rating (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
230–240	1	2	15	CR340K013AAA1AA	CR340C013AAA1AA
230–240	1	3	20	CR340K013BAA1AA	CR340C013BAA1AA
230–240	1	5	40	CR340K013FAA1AA	CR340C013FAA1AA
230–240	1	7½	50	CR340K013HAA1AA	CR340C013HAA1AA
230–240	2	10	50	CR340L013HAA1AA	CR340D013HAA1AA
230–240	2	15	70	CR340L013KAA1AA	CR340D013KAA1AA

[1]50 Hz forms are available. Contact nearest ABB Representative for proper selection.
For pump panel without overload, change 8th digit in ordering code from "1" to "4."

Instantaneous trip circuit breaker type

Coil voltage (60 Hz)[1]	NEMA size	Max. horsepower (3-phase)	CB rating (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
230–240	1	3	15	CR340K213CAC1AA	CR340C213CAC1AA
230–240	1	7½	30	CR340K213DAC1AA	CR340C213DAC1AA
230–240	2	15	50	CR340L213EAC1AA	CR340D213EAC1AA
230–240	3	30	100	–	CR340E213FAC1AA
230–240	4	50	150	–	CR340F213GAC1AA
230–240	5	100	400	–	CR340G213HAC1AA
460–480	1	7½	15	CR340K214CAC1AA	CR340C214CAC1AA
460–480	1	10	30	CR340K214DAC1AA	CR340C214DAC1AA[2]
460–480	2	25	50	CR340L214EAC1AA	CR340D214EAC1AA[2]
460–480	3	50	100	–	CR340E214FAC1AA[2]
460–480	4	100	150	–	CR340F214GAC1AA[2]
460–480	5	200	400	–	CR340G214HAC1AA
460–480	6	400	600	–	CR340H214KAD1AA

For pump panel without overload, change 8th digit in ordering code from "1" to "4."
Example: CR340K013AAA1AA becomes CR340K043AAA1AA.
[1]50 Hz forms are available. Contact nearest ABB Representative for proper selection.
[2]Available with CL-type current limiter and UL listed 100 kA/C short-circuit rating; contact an ABB Representative for availability.
The 7th digit in the ordering code changes to "3."

General note:
Control circuit fusing included for instantaneous trip circuit breaker type.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR340 instantaneous trip circuit breaker with solid-state electronic overload relay

Solid-state Class 10-20-30 electronic overload with adjustable setting

Instantaneous trip circuit breaker type solid-state Class 10-20-30 electronic overload

NEMA size	Max. horsepower (3-phase) at 230–240 V	Max. horsepower (3-phase) at 440–480 V	Max. CB rating (amps)	Overload range (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
1	–	–	3	0.4–0.85	CR340K2X*CAC1AAC	CR340C2X*AAC1AAC
1	–	0.75	3	0.8–1.7	CR340K2X*CAC1AAD	CR340C2X*AAC1AAD
1	0.75	2	7	1.6–3.4	CR340K2X*CAC1AAE	CR340C2X*BAC1AAE
1	2	3	7	3.2–6.8	CR340K2X*CAC1AAF	CR340C2X*BAC1AAF
1	3	7.5	7	6.5–13.5	CR340K2X*CAC1AAG	CR340C2X*BAC1AAG
1	7.5	10	30	13–27	CR340K2X*DAC1AAH	CR340C2X*DAC1AAH
2	3	7.5	30	6.5–13.5	CR340L2X*DAC1AAG	CR340D2X*DAC1AAG
2	7.5	20	50	13–27	CR340L2X*EAC1AAH	CR340D2X*EAC1AAH
2	15	25	50	25–50	CR340L2X*EAC1AAJ	CR340D2X*EAC1AAJ
3	10	25	50	17–35	–	CR340E2X*EAC1AAK
3	25	50	100	35–70	–	CR340E2X*FAC1AAL
3	30	–	100	65–90	–	CR340E2X*FAC1AAM
4	10	25	100	17–35	–	CR340F2X*FAC1AAK
4	25	50	100	35–70	–	CR340F2X*FAC1AAL
4	50	100	150	65–135	–	CR340F2X*GAC1AAM
5	50	100	150	65–135	–	CR340G2X*GAC1AAP
5	100	200	400	130–270	–	CR340G2X*HAC1AAQ
6	100	200	400	130–270	–	CR340H2X*FAD1AAS
6	200	400	600	260–540	–	CR340H2X*GAD1AAT

*Insert number from coil table below in place of asterisk in ordering code for voltage/frequency desired.

***Coil table**
(To complete ordering code)

Coil number	Voltage	Frequency
1	200–208 V	60 Hz
3	230–240 V	60 Hz
4	460–480 V	60 Hz
5	575–600 V	60 Hz
6	380–415 V	50 Hz

- NEMA sizes 1–3 rated 5,000 rms symmetrical amperes maximum.
- NEMA sizes 4 and 5 rated 10,000 rms symmetrical amperes maximum.

General note:
Control circuit fusing included for instantaneous trip circuit breaker type.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR341 fusible disconnect with thermal overload relay

Thermal class 20 (fuses not included except where footnoted)

Class H fuse clips

Coil voltage (60 Hz)	NEMA size	Horsepower	Fuse clip rating (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
230–240	1	7½	30	CR341K013BAA1AA	CR341C013BAA1AA
230–240	2	15	60	CR341L013CAA1AA	CR341D013CAA1AA
230–240	3	20	60	–	CR341E013CAA1AA
230–240	3	30	100	–	CR341E013DAA1AA
230–240	4	50	200	–	CR341F013EAC1AA
230–240	5	60	200	–	CR341G013EAC1AA
230–240	5	100	400	–	CR341G013FAC1AA
460–480	2	10	30	CR341K014BAA1AA	CR341C014BAA1AA
460–480	2	15	30	CR341L014BAA1AA	CR341D014BAA1AA
460–480	2	25	60	CR341L014CAA1AA	CR341D014CAA1AA
460–480	3	30	60	–	CR341E014CAA1AA
460–480	3	50	100	–	CR341E014DAA1AA
460–480	4	60	100	–	CR341F014DAA1AA
460–480	4	100	200	–	CR341F014EAC1AA
460–480	5	125	200	–	CR341G014EAC1AA
460–480	5	200	400	–	CR341G014FAC1AA
460–480	6	400	600	–	CR341H014GAD1AA

For pump panel without overload, change 8th digit in ordering code from “1” to “4.”

Class R fuse clips

Coil voltage (60 Hz)	NEMA size	Horsepower	Fuse clip rating (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
230–240	1	7½	30	CR341K113BAA1AA	CR341C113BAA1AA
230–240	2	15	60	CR341L113CAA1AA	CR341D113CAA1AA
230–240	3	20	60	–	CR341E113CAA1AA
230–240	3	30	100	–	CR341E113DAA1AA
230–240	4	50	200	–	CR341F113EAC1AA[1]
230–240	5	60	200	–	CR341G113EAC1AA[1]
230–240	5	100	400	–	CR341G113FAC1AA[1]
460–480	1	10	30	CR341K114BAA1AA	CR341C114BAA1AA
460–480	2	15	30	CR341L114BAA1AA	CR341D114BAA1AA
460–480	2	25	60	CR341L114CAA1AA	CR341D114CAA1AA
460–480	3	30	60	–	CR341E114CAA1AA
460–480	3	50	100	–	CR341E114DAA1AA
460–480	4	60	100	–	CR341F114DAA1AA
460–480	4	100	200	–	CR341F114EAC1AA[1]
460–480	5	125	200	–	CR341G114EAC1AA[1]
460–480	5	200	400	–	CR341G114FAC1AA[1]

For pump panel without overload, change 8th digit in ordering code from “1” to “4.”
[1]Control circuit fusing included.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR341 fusible disconnect with solid-state electronic overload relay

Solid-state Class 10-20-30 electronic overload with adjustable setting

Class H fuse clips

NEMA size	Max. horsepower (3-phase) at 230–240 V	Max. horsepower (3-phase) at 440–480 V	Fuse clip rating (amps)	Max. fuse rating (amps)	Overload range (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
1	–	–	30	3	0.4–0.85	CR341K0X*BAA1AAC	CR306341C0X*BAA1AAC
1	–	0.75	30	6	0.8–1.7	CR341K0X*BAA1AAD	CR306341C0X*BAA1AAD
1	0.75	2	30	10	1.6–3.4	CR341K0X*BAA1AAE	CR306341C0X*BAA1AAE
1	2	3	30	25	3.2–6.8	CR341K0X*BAA1AAF	CR306341C0X*BAA1AAF
1	3	7.5	30	30	6.5–13.5	CR341K0X*BAA1AAG	CR306341C0X*BAA1AAG
1	7.5	10	30	30	13–27	CR341K0X*BAA1AAH	CR306341C0X*BAA1AAH
2	3	7.5	30	30	6.5–13.5	CR341L0X*BAA1AAG	CR306341D0X*BAA1AAG
2	7.5	20	60	60	13–27	CR341L0X*CAA1AAH	CR306341D0X*CAA1AAH
2	15	25	60	60	25–50	CR341L0X*CAA1AAJ	CR306341D0X*CAA1AAJ
3	10	25	60	50	17–35	–	CR306341E0X*CAC1AAK[1]
3	25	50	60	60	35–70	–	CR306341E0X*CAC1AAL[1]
3	30	–	60	60	65–90	–	CR306341E0X*CAC1AAM[1]
4	10	25	200	200	17–35	–	CR306341F0X*EAC1AAK[1]
4	25	50	200	200	35–70	–	CR306341F0X*EAC1AAL[1]
4	50	100	200	200	65–135	–	CR306341F0X*EAC1AAM[1]
5	50	100	200	200	65–135	–	CR306341G0X*EAC1AAP[1]
5	100	200	400	400	130–270	–	CR306341G0X*FAC1AAQ[1]
6	100	200	600	600	130–270	–	CR306341H0X*GAD1AAS[1]
6	200	400	1200	1200	260–540	–	CR306341H0X*LAD1AAT[1]

* Insert number from coil table on next page in place of asterisk in ordering code for voltage/frequency desired.
• NEMA sizes 1–3 rated 5,000 rms symmetrical amperes maximum.
• NEMA sizes 4 and 5 rated 10,000 rms symmetrical amperes maximum.
[1]Control circuit fusing included.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR341 fusible disconnect with solid-state electronic overload relay

Solid-state Class 10-20-30 electronic overload with adjustable setting

Class R fuse clips

NEMA size	Max. horsepower (3-phase) at 230–240 V	Max. horsepower (3-phase) at 440–480 V	Fuse clip rating (amps)	Max. fuse rating (amps)	Overload range (amps)	NEMA type 3R narrow Ordering code	NEMA type 3R wide Ordering code
1	–	–	30	3	0.4–0.85	CR341K1X*BAA1AAC	CR341C1X*BAA1AAC
1	–	0.75	30	6	0.8–1.7	CR341K1X*BAA1AAD	CR341C1X*BAA1AAD
1	0.75	2	30	10	1.6–3.4	CR341K1X*BAA1AAE	CR341C1X*BAA1AAE
1	2	3	30	25	3.2–6.8	CR341K1X*BAA1AAF	CR341C1X*BAA1AAF
1	3	7.5	30	30	6.5–13.5	CR341K1X*BAA1AAG	CR341C1X*BAA1AAG
1	7.5	10	30	30	13–27	CR341K1X*BAA1AAH	CR341C1X*BAA1AAH
2	3	7.5	30	30	6.5–13.5	CR341L1X*BAA1AAG	CR341D1X*BAA1AAG
2	7.5	20	60	60	13–27	CR341L1X*CAA1AAH	CR341D1X*CAA1AAH
2	15	25	60	60	25–50	CR341L1X*CAA1AAJ	CR341D1X*CAA1AAJ
3	10	25	60	50	17–35	–	CR341E1X*CAC1AAK
3	25	50	60	60	35–70	–	CR341E1X*CAC1AAL
3	30	–	60	60	65–90	–	CR341E1X*CAC1AAM
4	10	25	200	200	17–35	–	CR341F1X*EAC1AAK
4	25	50	200	200	35–70	–	CR341F1X*EAC1AAL
4	50	100	200	200	65–135	–	CR341F1X*EAC1AAM
5	50	100	200	200	65–135	–	CR341G1X*EAC1AAP
5	100	200	400	400	130–270	–	CR341G1X*FAC1AAQ

* Insert number from coil table below in place of asterisk in ordering code for voltage/frequency desired.

***Coil table**
(To complete ordering code)

Coil number[1]	Voltage	Frequency
1	200–208 V	60 Hz
3	230–240 V	60 Hz
4	460–480 V	60 Hz
5	575–600 V	60 Hz
6	380–415 V	50 Hz

• NEMA sizes 1–3 rated 5,000 rms symmetrical amperes maximum.
• NEMA sizes 4 and 5 rated 10,000 rms symmetrical amperes maximum.
[1]Horsepower ratings are based on standard NEC motor data and normal service conditions.

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR340, CR341 pump panel nomenclature

Ordering code configuration
Valid for NEMA sizes 1–5

Digits:			1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C	R				A				A	A	A		A	A	A
Steps:	Step 1						Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 1 (digits 1–3) select product line code

Code	Option
340	Pump panel circuit breaker and instantaneous trip circuit breaker forms
341	Pump panel fused and non-fused disconnect forms

Step 1 (digit 4) select NEMA size

Code	Option
C	Size 1, wide
D	Size 2, wide
E	Size 3, wide
F	Size 4, wide
G[1]	Size 5, wide
H[1,2]	Size 6, standard
K[3]	Size 1, narrow
L[3]	Size 2, narrow

Step 2 (digit 5) select disconnect means

Code	Option
0	Standard IC rating (class H fuse clips / thermal CB)
1	Higher IC rating (class R fuse clips / hi-break thermal CB)
2[4]	instantaneous trip circuit breaker standard IC rating (CR340 only)
3[4]	instantaneous trip circuit breaker higher IC rating (CR340 only)

Step 3 (digit 6) select overloads

Code	Option
1	Class 20 NEMA ambient compensated [thermal overload]
4[4]	No overloads
X	Class 10-20-30 solid-state overload (not available for NEMA size 6 and 7)
Y[3]	Panel-mount class 10-20-30 solid-state (not available for NEMA size 5 and above)

Step 4 (digit 7) select line voltage

Code	Option
1	200–208 V
3	230–240 V
4	460–480 V
5	575–600 V

[1]Class L fuses will be provided for disconnects above 600 amps
[2]Instantaneous trip circuit breaker options 2 and 3 under digit 5 disconnect means is not available with no overload option 4 under digit 6 overloads selection
[3]Panel-mount EOL (option Y under overloads: digit 6) is not available for narrow size pump panels (options K and L under NEMA size - digit 4)
[4]Higher IC ratings [digit 5] option 1 is not valid when protector rating [digit 8] equals option A Disconnect switch less fuse clips

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR340, CR341 pump panel nomenclature

Ordering code configuration
Valid for NEMA sizes 1–5

Digits:			1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C	R				A				A	A	A		A	A	A
Steps:			Step 1				Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 8) select disconnect

Table A: Thermal circuit breaker trips (CR340 only)

	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V
Trip	**NEMA size – 1**				**NEMA size – 2**				**NEMA size – 3**				**NEMA size – 4**				**NEMA size – 5**				**NEMA size – 6**			
A			15	15													200	200	200	200	300	300	300	300
C	25	25	25	25													250	250	250	250	400	400	400	400
D																	300	300	300	300				
F	40	40			40	40	40	40					200	200	200	200	400	400	400	400	600	600	600	600
H																					800	800	800	800
J					60	60	60	60			60	60												
N									100	100	100	100			100	100								
R									125	125			125	125										

Table B: Tmax® XT instantaneous trip circuit breaker trips (CR340 only)

																						Amperage ratings				
	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	200–208 V	230–240 V	460–480 V	575–600 V	Trip range
Code	**NEMA size – 1**				**NEMA size – 2**				**NEMA size – 3**				**NEMA size – 4**				**NEMA size – 5**				**NEMA size – 6**				
A	3	3	3	3																					
B	7	7	7	7																					
C	15	15	15	15	15	15	15	15																	
D	30	30	30	30	30	30	30	30	30	30	30	30													
E					50	50	50	50	50	50	50	50	50	50	50	50									
F									100	100	100	100	100	100	100	100									
G													150	150	150	150									
H																	200	200	200	200					550-1670
J																	250	250	250	250					1000-3300
K																	300	300	300	300	300	300	300	300	1800-6000
M																	350	350	350	350	350	350	350	350	3000-6000
N																	400	400	400	400	400	400	400	400	5000-10000
P																					600	600	600	600	
Q																					800	800	800	800	

Please reference the NEMA full voltage power devices catalog for additional technical data and dimensional drawings.

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Pumping panels

CR340, CR341 pump panel nomenclature

Ordering code configuration
Valid for NEMA sizes 1–5

Digits:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C	R			A				A	A	A		A	A	A
Steps:	Step 1				Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 5 (digit 8) select disconnect (continued)

Table C: Fusible disconnect switch fuse clip sizes (CR341 only)

	Size					
Code	**1**	**2**	**3**	**4**	**5**	**6**
A[5]						Disconnect switch less fuse clips
B	30	30				
C	60	60	60			
D		100	100	100		
E				200	200	
F					400	
G						600
H						800
J						1000
L						1200
M						
N						

Table D: Class 10-20-30 electronic overload

	Size						
Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**
C	0.4–0.85						Not available for NEMA size 7
D	0.8–1.7						
E	1.6–3.4						
F	3.2–6.8						
G	6.5–13.5	6.5–13.5					
H	13–27	13–27					
J		25–50					
K			17–35	17–35			
L			35–70	35–70			
M			65–90	65–135			
P					65–135		
Q					130–270	130–270	
T						260–540	

[5]NEMA Size 5 and 6 are labeled under UL 508A

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Pumping panels

CR340, CR341 pump panel nomenclature

Ordering code configuration
Valid for NEMA sizes 1–5

Digits:			1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C	R				A				A	A	A		A	A	A
Steps:			Step 1				Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 6 (digit 9) select timer options

Code	Option
A[6]	Hand-off-auto (HOA), start (black) pushbutton (standard)
B	Hand-off-auto (HOA)
C[7,8,9]	Program timer with mini door
D[7,8]	Program timer
E[7,8]	Back spin timer
K	Start (black) - stop (red) pushbutton
L[7,8,10]	Program timer, no added features

Step 7 (digit 10) select control circuit fusing

Code	Option
A[11]	None (standard)
B[12]	Separate control 120 V
C	Control circuit fusing (CCF)
D	CCF, separate control 120 V
E[8]	CCF, control power transformer (CPT)
F[8]	CCF, CPT 100 VA extra

Step 8 (digit 11) select relay protection

Code	Option
1	None (standard)
3[8]	Light arrestor
5[8]	Light arrestor, surge capacitor
7[8]	Surge capacitor

Step 9 (digit 12) select accessories

Code	Option
A	None (standard)
B	Unwired control circuit
D[13]	Elapsed time meter (wired across coil) — mounted on door
E[8]	Space heater (wired through NC contact)
F	1 NO auxiliary (extra)
G	2 NO auxiliary (extra)
H	1 NC auxiliary (extra)
J	2 NC auxiliary (extra)
K	1 NO and 1 NC auxiliary (extra)
L[8]	Red and green indicating light (motor on and off)
N[8]	Red indicating light (motor on)
P[8]	Auxiliary relay (2 NO, 2 NC)
S[8,13]	Elapsed time meter with NO contact — mounted on door

[6]HOA and start pushbuttons are offered as standard with options C, D, E and L
[7]Extra capacity CPT required
[8]Not available with NEMA size options K and L
[9]Not available with line voltages options 6 and 9
[10]Not available with line voltages options 5, 6 and 9
[11]CCF is included when
a. Fuse clip size is more than 100 amps (option E and above)
b. Mag. only circuit breaker is more than 7 amps (option C and above)
c. Thermal magnetic circuit breaker is more than 100 amps (option P through S and A through K for size 4 through 7)
[12]CCF is not included with this option
[13]Not available with line voltages options 4, 5, 6 and 9

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Pumping panels

CR340, CR341 pump panel nomenclature

Ordering code configuration
Valid for NEMA sizes 1–5

Digits:			1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C	R				A				A	A	A		A	A	A
Steps:			Step 1				Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11

To configure the ordering code, use the tables below to fill in the digit boxes with the appropriate code.

Step 10 (digit 13) select relay type

Code	Option
A	None (standard)
B[8]	Under-voltage relay
C[8]	Under-voltage relay and phase failure relay
D[8]	Phase failure relay

Step 11 (digit 14) select overload range

	Size						
Code	1	2	3	4	5	6	7
C	0.4–0.85						Not available for NEMA size 7
D	0.8–1.7						
E	1.6–3.4						
F	3.2–6.8						
G	6.5–13.5	6.5–13.5					
H	13–27	13–27					
J		25–50					
K			17–35	17–35			
L			35–70	35–70			
M			65–90	65–135			
P					65–135		
Q					130–270	130–270	
T						260–540	

[8]Not available with NEMA size options K and L

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Pumping panels

CR123 heaters for CR340/CR341 pump panels

Class 20 overload heaters

For use with polyphase motors. For continuous rated motors with a service factor of 1.15 to 1.25, select heaters from the heater table for the motor full-load amperes. This provides a maximum of 125% protection. For continuous rated motors with 1.0 service factor, multiply the full-load amperes of the motor by 0.90 and use this value to select heaters.

Ordering information

All heaters listed are packaged in multiples of three. Items of these heaters should be ordered in quantities of three-unit multiples (such as 3, 6, 9, 12, etc.). The minimum order quantity is three.

Example: (For motors with FLA of 9.28)

Item 1: (2) CR341D013C for 2 motors.

Item 1A: (6) CR123C104B for starters.

Size 1 — Class 20 overload relay heaters

Motor full-load amps				
3-phase 3 heaters	Heater ordering code	Max. fuse rating (A)	Max. breaker rating (A)	TEC/TECL rating
0.41–0.45	CR123C054A	3	–	–
0.46–0.49	CR123C060A	3	15	–
0.50–0.53	CR123C066A	3	15	–
0.54–0.59	CR123C071A	3	15	–
0.60–0.65	CR123C078A	3	15	–
0.66–0.76	CR123C087A	3	15	3
0.77–0.84	CR123C097A	3	15	3
0.85–0.93	CR123C109A	3	15	3
0.94–1.04	CR123C118A	3	15	3
1.05–1.15	CR123C131A	3	15	3
1.16–1.27	CR123C148A	3	15	3
1.28–1.39	CR123C163A	3	15	3
1.40–1.55	CR123C184A	6	15	3
1.56–1.73	CR123C196A	6	15	3
1.74–1.89	CR123C220A	6	15	3
1.90–2.05	CR123C239A	6	15	3
2.06–2.28	CR123C268A	6	15	3
2.29–2.47	CR123C301A	6	15	3
2.48–2.79	CR123C326A	10	15	7
2.80–3.31	CR123C356A	10	15	7
3.32–3.70	CR123C379A	10	15	7
3.71–4.06	CR123C419A	15	15	7
4.07–4.47	CR123C466A	15	15	7
4.48–4.95	CR123C526A	15	15	7
4.96–5.49	CR123C592A	20	20	7
5.50–5.91	CR123C630A	20	20	7
5.92–6.47	CR123C695A	25	20	15
6.48–7.20	CR123C778A	25	20	15
7.21–8.22	CR123C867A	30	30	15
8.23–8.72	CR123C955A	30	30	15
8.73–9.67	CR123C104B	35	30	15
9.68–10.4	CR123C113B	35	30	15
10.5–11.0	CR123C125B	40	40	15
11.1–12.4	CR123C137B	45	40	15
12.5–13.2	CR123C151B	50	50	15, 30
13.3–15.4	CR123C163B	60	50	30
15.5–17.1	CR123C180B	60	50	30
17.2–18.1	CR123C198B	70	50	30
18.2–20.0	CR123C214B	70	50	30
20.1–21.5	CR123C228B	80	50	30
21.6–22.5	CR123C250B	80	70	30
22.6–23.9	CR123C273B	80	70	30
24.0–26.3	CR123C303B	90	70	30, 50
26.4–27.0	CR123C330B	90	70	50

Size 2 — Class 20 overload relay heaters

Motor full-load amps				
3-phase 3 heaters	Heater ordering code	Max. fuse rating (A)	Max. breaker rating (A)	TEC/TECL rating
5.48–5.85	CR123C630A	20	–	–
5.86–6.47	CR123C695A	20	–	–
6.48–7.35	CR123C778A	25	–	–
7.36–8.06	CR123C867A	30	–	–
8.07–9.03	CR123C955A	30	–	–
9.04–9.61	CR123C104B	35	30	15
9.62–10.5	CR123C113B	35	30	15
10.6–11.6	CR123C125B	40	40	15
11.7–12.5	CR123C137B	45	40	15
12.6–13.6	CR123C151B	50	50	15
13.7–16.7	CR123C163B	60	50	30
16.8–17.9	CR123C180B	60	50	30
18.0–18.7	CR123C198B	70	70	30
18.8–20.4	CR123C214B	80	70	30
20.5–22.7	CR123C228B	80	70	30
22.8–24.7	CR123C250B	90	70	30
24.8–26.3	CR123C273B	90	70	30
26.4–29.5	CR123C303B	100	100	30, 50
29.6–32.5	CR123C330B	100	100	50
32.6–36.7	CR123C366B	100	100	50
36.8–41.9	CR123C400B	100	100	50
42.0–43.2	CR123C440B	100	100	50
43.3–45.0	CR123C460B	100	100	–

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Pumping panels

CR123 heaters for CR340/CR341 pump panels

Class 20 overload heaters (continued)

Size 3 — standard or ambient compensated Class 20 overload relay heaters

Motor full-load amps				
3-phase 3 heaters	Heater ordering code	Max. fuse rating (A)	Max. breaker rating (A)	TEC/TECL rating (A)
17.4–18.4	CR123F233B	70	70	30
18.5–21.1	CR123F243B	80	70	30
21.2–22.1	CR123F270B	80	70	30
22.2–26.1	CR123F300B	90	70	30
26.2–28.0	CR123F327B	100	100	50
28.1–31.3	CR123F357B	100	100	50
31.4–33.3	CR123F395B	100	100	50
33.4–34.3	CR123F430B	100	100	50
34.4–40.9	CR123F487B	100	100	50
41.0–44.7	CR123F567B	100	100	50, 100
44.8–51.0	CR123F614B	100	125	100
51.1–52.0	CR123F658B	100	125	100
52.1–55.4	CR123F719B	100	125	100
55.5–63.3	CR123F772B	100	150	100
63.4–66.1	CR123F848B	100	150	100
66.2–73.5	CR123F914B	100	150	100
73.6–82.2	CR123F104C	100	150	100
82.3–90.0	CR123F114C	100	150	100

Size 4 — Class 20 overload relay heaters

Motor full-load amps				
3-phase 3 heaters	Heater ordering code	Max. fuse rating (A)	Max. breaker rating (A)	TEC/TECL rating (A)
28.8–31.1	CR123F357B	110	100	50
31.2–33.3	CR123F395B	125	100	50
33.4–35.6	CR123F430B	125	100	50
35.7–42.6	CR123F487B	150	100	50, 100
42.7–45.2	CR123F567B	175	125	50, 100
45.3–51.1	CR123F614B	175	150	100
51.2–53.9	CR123F658B	200	150	100
54.0–56.9	CR123F719B	200	150	100
57.0–65.2	CR123F772B	200	175	100
65.3–68.6	CR123F848B	200	200	100
68.7–74.0	CR123F914B	200	200	100
74.1–86.0	CR123F104C	200	200	100, 150
86.1–90.7	CR123F114C	200	225	150
90.8–103	CR123F118C	200	225	150
104–109	CR123F133C	200	225	150
110–119	CR123F149C	200	225	150
120–131	CR123F161C	200	225	150
132–135	CR123F174C	200	225	150

Size 5 — Class 20 overload relay heaters

Motor full-load amps			
3-phase 3 heaters	Heater ordering code	Max. fuse rating (A)	Max. circuit rating (A)
109–118	CR123C592A	400	600
119–128	CR123C630A	400	600
129–138	CR123C695A	400	600
139–155	CR123C778A	400	600
156–168	CR123C867A	400	600
169–184	CR123C955A	400	600
185–200	CR123C104B	400	600
201–221	CR123C113B	400	600
222–237	CR123C125B	400	600
238–262	CR123C137B	400	600
263–270	CR123C151B	400	600

Size 6 — Class 20 overload relay heaters

Motor full-load amps	
3-phase 3 heaters	Heater ordering code
181–197	CR123C220A
198–214	CR123C239A
215–238	CR123C268A
239–258	CR123C301A
259–290	CR123C326A
291–346	CR123C356A
347–387	CR123C379A
388–424	CR123C419A
425–467	CR123C466A
468–516	CR123C526A
517–540	CR123C592A

Size 7 — Class 20 overload relay heaters

Motor full-load amps	
3-phase 3 heaters	Heater ordering code
346–387	CR123C326A
388–461	CR123C356A
462–515	CR123C379A
516–565	CR123C419A
566–622	CR123C466A
623–688	CR123C526A
689–763	CR123C592A
764–810	CR123C630A

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CONTROL SECTION 2

Contactors and overload relays

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Section Updated 07/2024

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3-pole contactors

For motor control and power switching






AC / DC Control supply				Type	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96
IEC	AC-3	Rated operational power θ ≤ 60 °C for AF09 ... AF370 θ ≤ 55 °C for AF400 ... AF2650	220 - 230 - 240 V	kW	2.2	3	4	6.5	9	11	11	15	18.5	22	25
			380 - 400 V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
			415 V	kW	4	5.5	9	11	15	18.5	22	30	37	45	55
			440 V	kW	4	5.5	9	15	18.5	22	22	30	37	45	55
			500 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55
			690 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55
			1000 V	kW	—	—	—	—	—	—	—	—	—	35	40
		Rated operational current	380 - 400 V	A	9	12	18	26	32	38	40	53	65	80	96
	AC-1	Rated operational current	θ ≤ 40 °C, 690 V	A	25	28	30	45	50	50	70	100	105	125	130
UL / CSA	1-phase motor rating		120 V	hp	0.75	1	1.5	2	2	2	3	3	5	7.5	7.5
			240 V	hp	1.5	2	3	3	5	5	7.5	10	15	15	20
	3-phase motor rating		200 - 208 V	hp	2	3	5	7.5	10	10	10	15	20	25	30
			220 - 240 V	hp	2	3	5	7.5	10	10	15	20	25	30	30
			440 - 480 V	hp	5	7.5	10	15	20	25	30	40	50	60	60
			550 - 600 V	hp	7.5	10	15	20	25	30	40	50	60	75	75
	General use rating		600 V	A	25	28	30	45	50	50	60	80	90	105	115
NEMA	NEMA Size				00	0	—	1	—	—	2	—	—	3	—

Main accessories

Auxiliary contact blocks	Front mounting	CA4-10 (1 x N.O.) CA4-01 (1 x N.C.)			
	Side mounting	CAL4-11 (1 x N.O. + 1 x N.C.)			
Timers	Electronic	TEF4-ON TEF4-OFF			
Interlocking units	Mechanical	VM4		VM96-4	
	Mechanical / Electrical	VEM4			
Connection sets	For reversing contactors	BER16-4	BER38-4	BER65-4	BER96-4
Surge suppressors		Built-in surge protection			

Overload relays



Thermal relays	Class 10 (Class 10A for TF140, TA200DU)	TF42 (0.10…38 A)		TF65 (22…67 A)	TF96 (40…96 A)
Electronic relays	Class 10E, 20E, 30E	EF19 (0.10…18.9 A)	EF19 (0.10…18.9 A) EF45 (9…45 A)	EF65 (20…70 A)	EF96 (36…100 A)

Manual motor starters



Thermal / magnetic protection Class 10	MS116 (0.10…32 A) Ics up to 50 kA for class 10 A		MS165 (10…80 A) Ics up to 100 kA[1]	
	MS132 (0.10…32 A) Ics up to 100 kA			
Magnetic only types	MO132 (0.16…32 A) Ics up to 100 kA		MO165 (16…80 A) Ics up to 100 kA[1]	
Accessories	For contactor mounting	BEA16-4	BEA38-4	BEA65-4[2]

[1]MS165/MO165 are suitable for use with AF09 … AF30 for North American applications.
[2]BEA65-4 suitable for MS165 and MO165 only.

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3-pole contactors

For motor control and power switching






AC / DC Control supply				Type	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370	AF400	AF460
IEC	AC-3	Rated operational power θ ≤ 60 °C for AF09 ... AF370 θ ≤ 55 °C for AF400 ... AF2650	220 - 230 - 240 V	kW	30	37	45	55	55	75	90	110	110	132
			380 - 400 V	kW	55	75	75	90	110	132	160	200	200	250
			415 V	kW	55	75	75	90	110	132	160	200	220	250
			440 V	kW	75	90	90	110	132	160	160	200	220	250
			500 V	kW	75	90	90	110	132	160	200	250	250	315
			690 V	kW	55	75	90	132	160	200	250	315	315	355
			1000 V	kW	—	—	75	110	132	160	185	200	220	280
		Rated operational current	380 - 400 V	A	116	140	146	190	205	265	305	370	400	460
	AC-1	Rated operational current	θ ≤ 40 °C, 690 V	A	160	200	225	275	350	400	500	600	600	700
UL / CSA	1-phase motor rating		120 V	hp	—	—	—	—	—	—	—	—	—	—
			240 V	hp	—	—	—	—	—	—	—	—	—	—
	3-phase motor rating		200 - 208 V	hp	30	40	40	50	60	75	100	125	125	150
			220 - 240 V	hp	40	50	50	60	75	100	125	150	150	200
			440 - 480 V	hp	75	100	100	125	150	200	250	300	350	400
			550 - 600 V	hp	100	125	125	150	200	250	300	350	400	500
	General use rating		600 V	A	160	200	200	250	300	350	400	520	550	650
NEMA	NEMA Size				—	4	—	—	—	5	—	—	—	6

Main accessories

Auxiliary contact blocks	Front mounting					
	Side mounting	CAL19-11 (1 x N.O. + 1 x N.C.)				CAL18-11 (1 x N.O. + 1 x N.C.)
Timers	Electronic					
Interlocking units	Mechanical	VM19 (for same size contactors)				VM750H VM750V
	Mechanical / Electrical					
Connection sets	For reversing contactors	BER140-4	BER205-4	BER370-4		BEM460-30
Surge suppressors						

Overload relays



Thermal relays	Class 10 (Class 10A for TF140, TA200DU)	TF140DU (66...142 A) θ ≤ 55 °C	TA200DU (66...200 A) θ ≤ 55 °C		
Electronic relays	Class 10E, 20E, 30E	EF146 (54...150 A)	EF205 (63...210 A)	EF370 (115...380 A)	EF460 (150...500 A)

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3-pole contactors

For motor control and power switching





AC / DC Control supply				Type	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650	AF2850
IEC	AC-3	Rated operational power θ ≤ 60 °C for AF09 ... AF370 θ ≤ 55 °C for AF400 ... AF2650	220 - 230 - 240 V	kW	160	220	—	257	315	—	—	—
			380 - 400 V	kW	315	400	—	475	560	—	—	—
			415 V	kW	355	425	—	500	630	—	—	—
			440 V	kW	355	450	—	560	710	—	—	—
			500 V	kW	400	520	—	560	710	—	—	—
			690 V	kW	500	600	—	800	1000	—	—	—
			1000 V	kW	355	400	—	—	—	—	—	—
		Rated operational current	380 - 400 V	A	580	750	—	860	1060	—	—	—
	AC-1	Rated operational current	θ ≤ 40 °C, 690 V	A	800	1050	1260	1350	1650	2050	2650	2850
UL / CSA	1-phase motor rating		120 V	hp	—	—	—	—	—	—	—	—
			240 V	hp	—	—	—	—	—	—	—	—
	3-phase motor rating		200 - 208 V	hp	200	250	—	—	—	—	—	—
			220 - 240 V	hp	250	300	—	400	450	—	—	—
			440 - 480 V	hp	500	600	—	800	900	—	—	—
			550 - 600 V	hp	600	700	—	1000	1150	—	—	—
	General use rating		600 V	A	750	900	1210	1350	1650	2100	2700	2850
NEMA	NEMA Size				—	7	—	—	8	—	—	—

Main accessories

Auxiliary contact blocks	Front mounting		
	Side mounting	CA18-11 (1 x N.O. + 1 x N.C.)	
Timers	Electronic		
Interlocking units	Mechanical	VM750H	VM1650H
	Mechanical / Electrical	VM750V	
Connection sets	For reversing contactors	BEM750-30	
Surge suppressors			

Overload relays



Thermal relays	Class 10 (Class 10A for TF140, TA200DU)		
Electronic relays	Class 10E, 20E, 30E	EF750 (250...800 A)	EF1250DU (350...1250 A)

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3-pole contactors

AF09 ... AF38



AF09-30-10



AF26-30-00

4 to 18.5 kW - AC / DC operated

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	24...60	20...60[1]	1	0	AF09-30-10-11	1SBL137001R1110	0.270
						0	1	AF09-30-01-11	1SBL137001R1101	0.270
				48...130	48...130	1	0	AF09-30-10-12	1SBL137001R1210	0.270
						0	1	AF09-30-01-12	1SBL137001R1201	0.270
				100...250	100...250	1	0	AF09-30-10-13	1SBL137001R1310	0.270
						0	1	AF09-30-01-13	1SBL137001R1301	0.270
				250...500	250...500	1	0	AF09-30-10-14	1SBL137001R1410	0.310
						0	1	AF09-30-01-14	1SBL137001R1401	0.310
5.5	28	7.5	28	24...60	20...60[1]	1	0	AF12-30-10-11	1SBL157001R1110	0.270
						0	1	AF12-30-01-11	1SBL157001R1101	0.270
				48...130	48...130	1	0	AF12-30-10-12	1SBL157001R1210	0.270
						0	1	AF12-30-01-12	1SBL157001R1201	0.270
				100...250	100...250	1	0	AF12-30-10-13	1SBL157001R1310	0.270
						0	1	AF12-30-01-13	1SBL157001R1301	0.270
				250...500	250...500	1	0	AF12-30-10-14	1SBL157001R1410	0.310
						0	1	AF12-30-01-14	1SBL157001R1401	0.310
7.5	30	10	30	24...60	20...60[1]	1	0	AF16-30-10-11	1SBL177001R1110	0.270
						0	1	AF16-30-01-11	1SBL177001R1101	0.270
				48...130	48...130	1	0	AF16-30-10-12	1SBL177001R1210	0.270
						0	1	AF16-30-01-12	1SBL177001R1201	0.270
				100...250	100...250	1	0	AF16-30-10-13	1SBL177001R1310	0.270
						0	1	AF16-30-01-13	1SBL177001R1301	0.270
				250...500	250...500	1	0	AF16-30-10-14	1SBL177001R1410	0.310
						0	1	AF16-30-01-14	1SBL177001R1401	0.310
11	45	15	45	24...60	20...60[1]	0	0	AF26-30-00-11	1SBL237001R1100	0.310
				48...130	48...130	0	0	AF26-30-00-12	1SBL237001R1200	0.310
				100...250	100...250	0	0	AF26-30-00-13	1SBL237001R1300	0.310
				250...500	250...500	0	0	AF26-30-00-14	1SBL237001R1400	0.350
15	50	20	50	24...60	20...60[1]	0	0	AF30-30-00-11	1SBL277001R1100	0.310
				48...130	48...130	0	0	AF30-30-00-12	1SBL277001R1200	0.310
				100...250	100...250	0	0	AF30-30-00-13	1SBL277001R1300	0.310
				250...500	250...500	0	0	AF30-30-00-14	1SBL277001R1400	0.350
18.5	50	25	50	24...60	20...60[1]	0	0	AF38-30-00-11	1SBL297001R1100	0.310
				48...130	48...130	0	0	AF38-30-00-12	1SBL297001R1200	0.310
				100...250	100...250	0	0	AF38-30-00-13	1SBL297001R1300	0.310
				250...500	250...500	0	0	AF38-30-00-14	1SBL297001R1400	0.350

[1]AF..-30-..-11 not suitable for direct control by PLC-output.

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3-pole contactors

AF09Z ... AF38Z



AF09Z-30-10



AF26Z-30-00



AF09Z-30-10



AF26Z-30-00

4 to 18.5 kW - 24 V DC operated designed for PLC

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 40 °C AC-1								
kW	A	hp	A	V DC					kg
4	25	5	25	24	1	0	AF09Z-30-10-30	1SBL136001R3010	0.430
					0	1	AF09Z-30-01-30	1SBL136001R3001	0.430
5.5	28	7.5	28	24	1	0	AF12Z-30-10-30	1SBL156001R3010	0.430
					0	1	AF12Z-30-01-30	1SBL156001R3001	0.430
7.5	30	10	30	24	1	0	AF16Z-30-10-30	1SBL176001R3010	0.430
					0	1	AF16Z-30-01-30	1SBL176001R3001	0.430
11	45	15	45	24	0	0	AF26Z-30-00-30	1SBL236001R3000	0.480
15	50	20	50	24	0	0	AF30Z-30-00-30	1SBL276001R3000	0.480
18.5	50	25	50	24	0	0	AF38Z-30-00-30	1SBL296001R3000	0.480

Note: AF..Z contactors with DC control voltage 24 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

4 to 18.5 kW - AC / DC operated for specific applications

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	-	12...20	1	0	AF09Z-30-10-20	1SBL136001R2010	0.310
						0	1	AF09Z-30-01-20	1SBL136001R2001	0.310
				24...60	20...60	1	0	AF09Z-30-10-21	1SBL136001R2110	0.310
						0	1	AF09Z-30-01-21	1SBL136001R2101	0.310
				48...130	48...130	1	0	AF09Z-30-10-22	1SBL136001R2210	0.310
						0	1	AF09Z-30-01-22	1SBL136001R2201	0.310
				100...250	100...250	1	0	AF09Z-30-10-23	1SBL136001R2310	0.310
						0	1	AF09Z-30-01-23	1SBL136001R2301	0.310
5.5	28	7.5	28	-	12...20	1	0	AF12Z-30-10-20	1SBL156001R2010	0.310
						0	1	AF12Z-30-01-20	1SBL156001R2001	0.310
				24...60	20...60	1	0	AF12Z-30-10-21	1SBL156001R2110	0.310
						0	1	AF12Z-30-01-21	1SBL156001R2101	0.310
				48...130	48...130	1	0	AF12Z-30-10-22	1SBL156001R2210	0.310
						0	1	AF12Z-30-01-22	1SBL156001R2201	0.310
				100...250	100...250	1	0	AF12Z-30-10-23	1SBL156001R2310	0.310
						0	1	AF12Z-30-01-23	1SBL156001R2301	0.310
7.5	30	10	30	-	12...20	1	0	AF16Z-30-10-20	1SBL176001R2010	0.310
						0	1	AF16Z-30-01-20	1SBL176001R2001	0.310
				24...60	20...60	1	0	AF16Z-30-10-21	1SBL176001R2110	0.310
						0	1	AF16Z-30-01-21	1SBL176001R2101	0.310
				48...130	48...130	1	0	AF16Z-30-10-22	1SBL176001R2210	0.310
						0	1	AF16Z-30-01-22	1SBL176001R2201	0.310
				100...250	100...250	1	0	AF16Z-30-10-23	1SBL176001R2310	0.310
						0	1	AF16Z-30-01-23	1SBL176001R2301	0.310
11	45	15	45	-	12...20	0	0	AF26Z-30-00-20	1SBL236001R2000	0.350
				24...60	20...60	0	0	AF26Z-30-00-21	1SBL236001R2100	0.350
				48...130	48...130	0	0	AF26Z-30-00-22	1SBL236001R2200	0.350
				100...250	100...250	0	0	AF26Z-30-00-23	1SBL236001R2300	0.350
15	50	20	50	-	12...20	0	0	AF30Z-30-00-20	1SBL276001R2000	0.350
				24...60	20...60	0	0	AF30Z-30-00-21	1SBL276001R2100	0.350
				48...130	48...130	0	0	AF30Z-30-00-22	1SBL276001R2200	0.350
				100...250	100...250	0	0	AF30Z-30-00-23	1SBL276001R2300	0.350
18.5	50	25	50	-	12...20	0	0	AF38Z-30-00-20	1SBL296001R2000	0.350
				24...60	20...60	0	0	AF38Z-30-00-21	1SBL296001R2100	0.350
				48...130	48...130	0	0	AF38Z-30-00-22	1SBL296001R2200	0.350
				100...250	100...250	0	0	AF38Z-30-00-23	1SBL296001R2300	0.350

Note: Only AF..Z contactors with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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3-pole contactors

AF40 ... AF96



AF40-30-00



AF80-30-00

18.5 to 45 kW - AC / DC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
18.5	70	30	60	24...60	20...60[1]	0	0	AF40-30-00-11	1SBL347001R1100	0.970
				48...130	48...130	0	0	AF40-30-00-12	1SBL347001R1200	0.970
				100...250	100...250	0	0	AF40-30-00-13	1SBL347001R1300	0.950
				250...500	250...500	0	0	AF40-30-00-14	1SBL347001R1400	0.950
22	100	40	80	24...60	20...60[1]	0	0	AF52-30-00-11	1SBL367001R1100	0.970
				48...130	48...130	0	0	AF52-30-00-12	1SBL367001R1200	0.970
				100...250	100...250	0	0	AF52-30-00-13	1SBL367001R1300	0.950
				250...500	250...500	0	0	AF52-30-00-14	1SBL367001R1400	0.950
30	105	50	90	24...60	20...60[1]	0	0	AF65-30-00-11	1SBL387001R1100	0.970
				48...130	48...130	0	0	AF65-30-00-12	1SBL387001R1200	0.970
				100...250	100...250	0	0	AF65-30-00-13	1SBL387001R1300	0.950
				250...500	250...500	0	0	AF65-30-00-14	1SBL387001R1400	0.950
37	125	60	105	24...60	20...60[1]	0	0	AF80-30-00-11	1SBL397001R1100	1.220
				48...130	48...130	0	0	AF80-30-00-12	1SBL397001R1200	1.220
				100...250	100...250	0	0	AF80-30-00-13	1SBL397001R1300	1.170
				250...500	250...500	0	0	AF80-30-00-14	1SBL397001R1400	1.170
45	130	60	115	24...60	20...60[1]	0	0	AF96-30-00-11	1SBL407001R1100	1.220
				48...130	48...130	0	0	AF96-30-00-12	1SBL407001R1200	1.220
				100...250	100...250	0	0	AF96-30-00-13	1SBL407001R1300	1.170
				250...500	250...500	0	0	AF96-30-00-14	1SBL407001R1400	1.170

[1]For control by PLC-output, use RA4 interface relay.

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3-pole contactors

AF116 ... AF146



AF146-30-00



AF146-30-00B

55 to 75 kW - AC / DC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	24...60	20...60	0	0	AF116-30-00-11	1SFL427001R1100	1.750
				48...130	48...130	0	0	AF116-30-00-12	1SFL427001R1200	1.750
				100...250	100...250	0	0	AF116-30-00-13	1SFL427001R1300	1.750
				250...500	250...500	0	0	AF116-30-00-14	1SFL427001R1400	1.750
75	200	100	200	24...60	20...60	0	0	AF140-30-00-11	1SFL447001R1100	1.750
				48...130	48...130	0	0	AF140-30-00-12	1SFL447001R1200	1.750
				100...250	100...250	0	0	AF140-30-00-13	1SFL447001R1300	1.750
				250...500	250...500	0	0	AF140-30-00-14	1SFL447001R1400	1.750
75	225	100	200	24...60	20...60	0	0	AF146-30-00-11	1SFL467001R1100	1.750
				48...130	48...130	0	0	AF146-30-00-12	1SFL467001R1200	1.750
				100...250	100...250	0	0	AF146-30-00-13	1SFL467001R1300	1.750
				250...500	250...500	0	0	AF146-30-00-14	1SFL467001R1400	1.750
With bar connections										
55	160	75	160	24...60	20...60	0	0	AF116-30-00B-11	1SFL427002R1100	1.500
				48...130	48...130	0	0	AF116-30-00B-12	1SFL427002R1200	1.500
				100...250	100...250	0	0	AF116-30-00B-13	1SFL427002R1300	1.500
				250...500	250...500	0	0	AF116-30-00B-14	1SFL427002R1400	1.500
75	200	100	200	24...60	20...60	0	0	AF140-30-00B-11	1SFL447002R1100	1.500
				48...130	48...130	0	0	AF140-30-00B-12	1SFL447002R1200	1.500
				100...250	100...250	0	0	AF140-30-00B-13	1SFL447002R1300	1.500
				250...500	250...500	0	0	AF140-30-00B-14	1SFL447002R1400	1.500
75	225	100	200	24...60	20...60	0	0	AF146-30-00B-11	1SFL467002R1100	1.500
				48...130	48...130	0	0	AF146-30-00B-12	1SFL467002R1200	1.500
				100...250	100...250	0	0	AF146-30-00B-13	1SFL467002R1300	1.500
				250...500	250...500	0	0	AF146-30-00B-14	1SFL467002R1400	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF146-30-00



AF146-30-00B

55 to 75 kW - AC / DC operated for faster opening utilization

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	100...250	100...250	0	0	AF116-30-00-33	1SFL427001R3300	1.750
				250...500	250...500	0	0	AF116-30-00-34	1SFL427001R3400	1.750
75	200	100	200	100...250	100...250	0	0	AF140-30-00-33	1SFL447001R3300	1.750
				250...500	250...500	0	0	AF140-30-00-34	1SFL447001R3400	1.750
75	225	100	200	100...250	100...250	0	0	AF146-30-00-33	1SFL467001R3300	1.750
				250...500	250...500	0	0	AF146-30-00-34	1SFL467001R3400	1.750
With bar connections										
55	160	75	160	100...250	100...250	0	0	AF116-30-00B-33	1SFL427002R3300	1.500
				250...500	250...500	0	0	AF116-30-00B-34	1SFL427002R3400	1.500
75	200	100	200	100...250	100...250	0	0	AF140-30-00B-33	1SFL447002R3300	1.500
				250...500	250...500	0	0	AF140-30-00B-34	1SFL447002R3400	1.500
75	225	100	200	100...250	100...250	0	0	AF146-30-00B-33	1SFL467002R3300	1.500
				250...500	250...500	0	0	AF146-30-00B-34	1SFL467002R3400	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF190 ... AF370



AF205-30-00



AF370-30-00

90 to 200 kW - AC / DC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	24...60	20...60	0	0	AF190-30-00-11	1SFL487002R1100	3.000
				48...130	48...130	0	0	AF190-30-00-12	1SFL487002R1200	3.000
				100...250	100...250	0	0	AF190-30-00-13	1SFL487002R1300	3.000
				250...500	250...500	0	0	AF190-30-00-14	1SFL487002R1400	3.000
110	350	150	300	24...60	20...60	0	0	AF205-30-00-11	1SFL527002R1100	3.000
				48...130	48...130	0	0	AF205-30-00-12	1SFL527002R1200	3.000
				100...250	100...250	0	0	AF205-30-00-13	1SFL527002R1300	3.000
				250...500	250...500	0	0	AF205-30-00-14	1SFL527002R1400	3.000
132	400	200	350	24...60	20...60	0	0	AF265-30-00-11	1SFL547002R1100	4.605
				48...130	48...130	0	0	AF265-30-00-12	1SFL547002R1200	4.605
				100...250	100...250	0	0	AF265-30-00-13	1SFL547002R1300	4.605
				250...500	250...500	0	0	AF265-30-00-14	1SFL547002R1400	4.605
160	500	250	400	24...60	20...60	0	0	AF305-30-00-11	1SFL587002R1100	4.605
				48...130	48...130	0	0	AF305-30-00-12	1SFL587002R1200	4.605
				100...250	100...250	0	0	AF305-30-00-13	1SFL587002R1300	4.605
				250...500	250...500	0	0	AF305-30-00-14	1SFL587002R1400	4.605
200	600	300	520	24...60	20...60	0	0	AF370-30-00-11	1SFL607002R1100	4.605
				48...130	48...130	0	0	AF370-30-00-12	1SFL607002R1200	4.605
				100...250	100...250	0	0	AF370-30-00-13	1SFL607002R1300	4.605
				250...500	250...500	0	0	AF370-30-00-14	1SFL607002R1400	4.605

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF205-30-00



AF370-30-00

90 to 200 kW - AC / DC operated for faster utilization - with built-in PLC interface

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	100...250	100...250	0	0	AF190-30-00-33	1SFL487002R3300	3.000
				250...500	250...500	0	0	AF190-30-00-34	1SFL487002R3400	3.000
110	350	150	300	100...250	100...250	0	0	AF205-30-00-33	1SFL527002R3300	3.000
				250...500	250...500	0	0	AF205-30-00-34	1SFL527002R3400	3.000
132	400	200	350	100...250	100...250	0	0	AF265-30-00-33	1SFL547002R3300	4.605
				250...500	250...500	0	0	AF265-30-00-34	1SFL547002R3400	4.605
160	500	250	400	100...250	100...250	0	0	AF305-30-00-33	1SFL587002R3300	4.605
				250...500	250...500	0	0	AF305-30-00-34	1SFL587002R3400	4.605
200	600	300	520	100...250	100...250	0	0	AF370-30-00-33	1SFL607002R3300	4.605
				250...500	250...500	0	0	AF370-30-00-34	1SFL607002R3400	4.605

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF26 ... AF38, AF26Z ... AF38Z



AF26-30-11

4 to 18.5 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
11	45	15	45	24...60	20...60[1]	1	1	AF26-30-11-11	1SBL237001R1111	0.350
				48...130	48...130	1	1	AF26-30-11-12	1SBL237001R1211	0.350
				100...250	100...250	1	1	AF26-30-11-13	1SBL237001R1311	0.350
				250...500	250...500	1	1	AF26-30-11-14	1SBL237001R1411	0.390
15	50	20	50	24...60	20...60[1]	1	1	AF30-30-11-11	1SBL277001R1111	0.350
				48...130	48...130	1	1	AF30-30-11-12	1SBL277001R1211	0.350
				100...250	100...250	1	1	AF30-30-11-13	1SBL277001R1311	0.350
				250...500	250...500	1	1	AF30-30-11-14	1SBL277001R1411	0.390
18.5	50	25	50	24...60	20...60[1]	1	1	AF38-30-11-11	1SBL297001R1111	0.350
				48...130	48...130	1	1	AF38-30-11-12	1SBL297001R1211	0.350
				100...250	100...250	1	1	AF38-30-11-13	1SBL297001R1311	0.350
				250...500	250...500	1	1	AF38-30-11-14	1SBL297001R1411	0.390

[1]AF..-30-..-11 not suitable for direct control by PLC-output.



AF26Z-30-11

4 to 18.5 kW - AC / DC operated for specific applications with 1 N.O. + 1 N.C. contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
11	45	15	45	-	12...20	1	1	AF26Z-30-11-20	1SBL236001R2011	0.390
				24...60	20...60	1	1	AF26Z-30-11-21	1SBL236001R2111	0.390
				48...130	48...130	1	1	AF26Z-30-11-22	1SBL236001R2211	0.390
				100...250	100...250	1	1	AF26Z-30-11-23	1SBL236001R2311	0.390
15	50	20	50	-	12...20	1	1	AF30Z-30-11-20	1SBL276001R2011	0.390
				24...60	20...60	1	1	AF30Z-30-11-21	1SBL276001R2111	0.390
				48...130	48...130	1	1	AF30Z-30-11-22	1SBL276001R2211	0.390
				100...250	100...250	1	1	AF30Z-30-11-23	1SBL276001R2311	0.390
18.5	50	25	50	-	12...20	1	1	AF38Z-30-11-20	1SBL296001R2011	0.390
				24...60	20...60	1	1	AF38Z-30-11-21	1SBL296001R2111	0.390
				48...130	48...130	1	1	AF38Z-30-11-22	1SBL296001R2211	0.390
				100...250	100...250	1	1	AF38Z-30-11-23	1SBL296001R2311	0.390

Note: Only AF..Z contactors with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole

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3-pole contactors

AF40 ... AF96



AF40-30-11



AF80-30-11

18.5 to 30 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
185	70	30	60	24...60	20...60[1]	1	1	AF40-30-11-11	1SBL347001R1111	1.010
				48...130	48...130	1	1	AF40-30-11-12	1SBL347001R1211	1.010
				100...250	100...250	1	1	AF40-30-11-13	1SBL347001R1311	0.990
				250...500	250...500	1	1	AF40-30-11-14	1SBL347001R1411	0.990
22	100	40	80	24...60	20...60[1]	1	1	AF52-30-11-11	1SBL367001R1111	1.010
				48...130	48...130	1	1	AF52-30-11-12	1SBL367001R1211	1.010
				100...250	100...250	1	1	AF52-30-11-13	1SBL367001R1311	0.990
				250...500	250...500	1	1	AF52-30-11-14	1SBL367001R1411	0.990
30	105	50	90	24...60	20...60[1]	1	1	AF65-30-11-11	1SBL387001R1111	1.010
				48...130	48...130	1	1	AF65-30-11-12	1SBL387001R1211	1.010
				100...250	100...250	1	1	AF65-30-11-13	1SBL387001R1311	0.990
				250...500	250...500	1	1	AF65-30-11-14	1SBL387001R1411	0.990
37	125	60	105	24...60	20...60[1]	1	1	AF80-30-11-11	1SBL397001R1111	1.260
				48...130	48...130	1	1	AF80-30-11-12	1SBL397001R1211	1.260
				100...250	100...250	1	1	AF80-30-11-13	1SBL397001R1311	1.210
				250...500	250...500	1	1	AF80-30-11-14	1SBL397001R1411	1.210
45	130	60	115	24...60	20...60[1]	1	1	AF96-30-11-11	1SBL407001R1111	1.260
				48...130	48...130	1	1	AF96-30-11-12	1SBL407001R1211	1.260
				100...250	100...250	1	1	AF96-30-11-13	1SBL407001R1311	1.210
				250...500	250...500	1	1	AF96-30-11-14	1SBL407001R1411	1.210

[1]For control by PLC-output, use RA4 interface relay.

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3-pole contactors

AF116 ... AF146



AF146-30-11



AF146-30-11B

55 to 75 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	24...60	20...60	1	1	AF116-30-11-11	1SFL427001R1111	1.750
				48...130	48...130	1	1	AF116-30-11-12	1SFL427001R1211	1.750
				100...250	100...250	1	1	AF116-30-11-13	1SFL427001R1311	1.750
				250...500	250...500	1	1	AF116-30-11-14	1SFL427001R1411	1.750
75	200	100	200	24...60	20...60	1	1	AF140-30-11-11	1SFL447001R1111	1.750
				48...130	48...130	1	1	AF140-30-11-12	1SFL447001R1211	1.750
				100...250	100...250	1	1	AF140-30-11-13	1SFL447001R1311	1.750
				250...500	250...500	1	1	AF140-30-11-14	1SFL447001R1411	1.750
75	225	100	200	24...60	20...60	1	1	AF146-30-11-11	1SFL467001R1111	1.750
				48...130	48...130	1	1	AF146-30-11-12	1SFL467001R1211	1.750
				100...250	100...250	1	1	AF146-30-11-13	1SFL467001R1311	1.750
				250...500	250...500	1	1	AF146-30-11-14	1SFL467001R1411	1.750
With bar connections										
55	160	75	160	24...60	20...60	1	1	AF116-30-11B-11	1SFL427002R1111	1.500
				48...130	48...130	1	1	AF116-30-11B-12	1SFL427002R1211	1.500
				100...250	100...250	1	1	AF116-30-11B-13	1SFL427002R1311	1.500
				250...500	250...500	1	1	AF116-30-11B-14	1SFL427002R1411	1.500
75	200	100	200	24...60	20...60	1	1	AF140-30-11B-11	1SFL447002R1111	1.500
				48...130	48...130	1	1	AF140-30-11B-12	1SFL447002R1211	1.500
				100...250	100...250	1	1	AF140-30-11B-13	1SFL447002R1311	1.500
				250...500	250...500	1	1	AF140-30-11B-14	1SFL447002R1411	1.500
75	225	100	200	24...60	20...60	1	1	AF146-30-11B-11	1SFL467002R1111	1.500
				48...130	48...130	1	1	AF146-30-11B-12	1SFL467002R1211	1.500
				100...250	100...250	1	1	AF146-30-11B-13	1SFL467002R1311	1.500
				250...500	250...500	1	1	AF146-30-11B-14	1SFL467002R1411	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF146-30-11



AF146-30-11B

55 to 75 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts for faster opening utilization - with built-in PLC interface

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	100...250	100...250	1	1	AF116-30-11-33	1SFL427001R3311	1.750
				250...500	250...500	1	1	AF116-30-11-34	1SFL427001R3411	1.750
75	200	100	200	100...250	100...250	1	1	AF140-30-11-33	1SFL447001R3311	1.750
				250...500	250...500	1	1	AF140-30-11-34	1SFL447001R3411	1.750
75	225	100	200	100...250	100...250	1	1	AF146-30-11-33	1SFL467001R3311	1.750
				250...500	250...500	1	1	AF146-30-11-34	1SFL467001R3411	1.750
With bar connections										
55	160	75	160	100...250	100...250	1	1	AF116-30-11B-33	1SFL427002R3311	1.500
				250...500	250...500	1	1	AF116-30-11B-34	1SFL427002R3411	1.500
75	200	100	200	100...250	100...250	1	1	AF140-30-11B-33	1SFL447002R3311	1.500
				250...500	250...500	1	1	AF140-30-11B-34	1SFL447002R3411	1.500
75	225	100	200	100...250	100...250	1	1	AF146-30-11B-33	1SFL467002R3311	1.500
				250...500	250...500	1	1	AF146-30-11B-34	1SFL467002R3411	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF190 ... AF370



AF205-30-11



AF370-30-11

90 to 200 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	24...60	20...60	1	1	AF190-30-11-11	1SFL487002R1111	3.000
				48...130	48...130	1	1	AF190-30-11-12	1SFL487002R1211	3.000
				100...250	100...250	1	1	AF190-30-11-13	1SFL487002R1311	3.000
				250...500	250...500	1	1	AF190-30-11-14	1SFL487002R1411	3.000
110	350	150	300	24...60	20...60	1	1	AF205-30-11-11	1SFL527002R1111	3.000
				48...130	48...130	1	1	AF205-30-11-12	1SFL527002R1211	3.000
				100...250	100...250	1	1	AF205-30-11-13	1SFL527002R1311	3.000
				250...500	250...500	1	1	AF205-30-11-14	1SFL527002R1411	3.000
132	400	200	350	24...60	20...60	1	1	AF265-30-11-11	1SFL547002R1111	4.640
				48...130	48...130	1	1	AF265-30-11-12	1SFL547002R1211	4.640
				100...250	100...250	1	1	AF265-30-11-13	1SFL547002R1311	4.640
				250...500	250...500	1	1	AF265-30-11-14	1SFL547002R1411	4.640
160	500	250	400	24...60	20...60	1	1	AF305-30-11-11	1SFL587002R1111	4.640
				48...130	48...130	1	1	AF305-30-11-12	1SFL587002R1211	4.640
				100...250	100...250	1	1	AF305-30-11-13	1SFL587002R1311	4.640
				250...500	250...500	1	1	AF305-30-11-14	1SFL587002R1411	4.640
200	600	300	520	24...60	20...60	1	1	AF370-30-11-11	1SFL607002R1111	4.640
				48...130	48...130	1	1	AF370-30-11-12	1SFL607002R1211	4.640
				100...250	100...250	1	1	AF370-30-11-13	1SFL607002R1311	4.640
				250...500	250...500	1	1	AF370-30-11-14	1SFL607002R1411	4.640

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF205-30-11



AF370-30-11

90 to 200 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts for faster opening utilization - with built-in PLC interface

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	100...250	100...250	1	1	AF190-30-11-33	1SFL487002R3311	3.000
				250...500	250...500	1	1	AF190-30-11-34	1SFL487002R3411	3.000
110	350	150	300	100...250	100...250	1	1	AF205-30-11-33	1SFL527002R3311	3.000
				250...500	250...500	1	1	AF205-30-11-34	1SFL527002R3411	3.000
132	400	200	350	100...250	100...250	1	1	AF265-30-11-33	1SFL547002R3311	4.640
				250...500	250...500	1	1	AF265-30-11-34	1SFL547002R3411	4.640
160	500	250	400	100...250	100...250	1	1	AF305-30-11-33	1SFL587002R3311	4.640
				250...500	250...500	1	1	AF305-30-11-34	1SFL587002R3411	4.640
200	600	300	520	100...250	100...250	1	1	AF370-30-11-33	1SFL607002R3311	4.640
				250...500	250...500	1	1	AF370-30-11-34	1SFL607002R3411	4.640

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF400 ... AF750



AF460-30-11



AF750-30-11

200 to 400 kW - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
200	600	350	550	-	24...60	1	1	AF400-30-11-68	1SFL577001R6811[1]	12.000
				48...130	48...130	1	1	AF400-30-11-69	1SFL577001R6911	12.000
				100...250	100...250	1	1	AF400-30-11-70	1SFL577001R7011	12.000
				250...500	250...500	1	1	AF400-30-11-71	1SFL577001R7111	12.000
250	700	400	650	-	24...60	1	1	AF460-30-11-68	1SFL597001R6811[1]	12.000
				48...130	48...130	1	1	AF460-30-11-69	1SFL597001R6911	12.000
				100...250	100...250	1	1	AF460-30-11-70	1SFL597001R7011	12.000
				250...500	250...500	1	1	AF460-30-11-71	1SFL597001R7111	12.000
315	800	500	750	-	24...60	1	1	AF580-30-11-68	1SFL617001R6811[1]	15.000
				48...130	48...130	1	1	AF580-30-11-69	1SFL617001R6911	15.000
				100...250	100...250	1	1	AF580-30-11-70	1SFL617001R7011	15.000
				250...500	250...500	1	1	AF580-30-11-71	1SFL617001R7111	15.000
400	1050	600	900	-	24...60	1	1	AF750-30-11-68	1SFL637001R6811[1]	15.000
				48...130	48...130	1	1	AF750-30-11-69	1SFL637001R6911	15.000
				100...250	100...250	1	1	AF750-30-11-70	1SFL637001R7011	15.000
				250...500	250...500	1	1	AF750-30-11-71	1SFL637001R7111	15.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
[2]Up to 850 V DC for AF580, AF750.

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3-pole contactors

AF1250 ... AF2850, AF1350T ... AF2850T



AF1250-30-11



AF2650-30-11

475 to 560 kW and 1260 to 2850 A AC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC[2]							
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
-	1260	-	1210	-	24...60	1	1	AF1250-30-11-68	1SFL647001R6811[1]	16.000
				48...130	48...130	1	1	AF1250-30-11-69	1SFL647001R6911	16.000
				100...250	100...250	1	1	AF1250-30-11-70	1SFL647001R7011	16.000
				250...500	250...500	1	1	AF1250-30-11-71	1SFL647001R7111	16.000
475	1350	800	1350	100...250	100...250	1	1	AF1350-30-11-70	1SFL657001R7011	34.000
560	1650	900	1650	100...250	100...250	1	1	AF1650-30-11-70	1SFL677001R7011	35.000
-	2050	-	2100	100...250	100...250	1	1	AF2050-30-11-70	1SFL707001R7011	35.000
-	2650	-	2700	100...250	100...250	1	1	AF2650-30-11-70	1SFL667001R7011	45.000
-	2850	-	2850	100...250	100...250	1	1	AF2850-30-11-70	1SFL687001R7011	45.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
[2]AF2650: Maximum operational voltage = 1000 V according to UL / CSA.



AF2650-30T-11

475 to 560 kW and 1350 to 2850 A AC-1 - AC operated with 1 N.O. + 1 N.C. auxiliary contacts - with built-in LVRT

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1								
kW	A	hp	A	V 50/60 Hz					kg
475	1350	800	1350	220 ... 240	1	1	AF1350T-30-11-91[1]	1SFL657001R9101	34.000
560	1650	900	1650	220 ... 240	1	1	AF1650T-30-11-91[1]	1SFL677001R9101	35.000
-	2050	-	2100	220 ... 240	1	1	AF2050T-30-11-91[1]	1SFL707001R9101	35.000
-	2650	-	2700	220 ... 240	1	1	AF2650T-30-11-91[1]	1SFL667001R9101	45.000
-	2850	-	2850	220 ... 240	1	1	AF2850T-30-11-91[1]	1SFL687001R9101	45.000

[1]Types -00 and -22 on request.

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3-pole contactors

AF09 ... AF38



AF09-30-22



AF26-30-22

4 to 18.5 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	24...60	20...60 [1]	2	2	AF09-30-22-11	1SBL137001R1122	0.320
				48...130	48...130	2	2	AF09-30-22-12	1SBL137001R1222	0.320
				100...250	100...250	2	2	AF09-30-22-13	1SBL137001R1322	0.320
				250...500	250...500	2	2	AF09-30-22-14	1SBL137001R1422	0.360
5.5	28	7.5	28	24...60	20...60 [1]	2	2	AF12-30-22-11	1SBL157001R1122	0.320
				48...130	48...130	2	2	AF12-30-22-12	1SBL157001R1222	0.320
				100...250	100...250	2	2	AF12-30-22-13	1SBL157001R1322	0.320
				250...500	250...500	2	2	AF12-30-22-14	1SBL157001R1422	0.360
7.5	30	10	30	24...60	20...60 [1]	2	2	AF16-30-22-11	1SBL177001R1122	0.320
				48...130	48...130	2	2	AF16-30-22-12	1SBL177001R1222	0.320
				100...250	100...250	2	2	AF16-30-22-13	1SBL177001R1322	0.320
				250...500	250...500	2	2	AF16-30-22-14	1SBL177001R1422	0.360
11	45	15	45	24...60	20...60	2	2	AF26-30-22-11	1SBL237001R1122	0.360
				48...130	48...130 [1]	2	2	AF26-30-22-12	1SBL237001R1222	0.360
				100...250	100...250	2	2	AF26-30-22-13	1SBL237001R1322	0.360
				250...500	250...500	2	2	AF26-30-22-14	1SBL237001R1422	0.400
15	50	20	50	24...60	20...60 [1]	2	2	AF30-30-22-11	1SBL277001R1122	0.360
				48...130	48...130	2	2	AF30-30-22-12	1SBL277001R1222	0.360
				100...250	100...250	2	2	AF30-30-22-13	1SBL277001R1322	0.360
				250...500	250...500	2	2	AF30-30-22-14	1SBL277001R1422	0.400
18.5	50	25	50	24...60	20...60 [1]	2	2	AF38-30-22-11	1SBL297001R1122	0.360
				48...130	48...130	2	2	AF38-30-22-12	1SBL297001R1222	0.360
				100...250	100...250	2	2	AF38-30-22-13	1SBL297001R1322	0.360
				250...500	250...500	2	2	AF38-30-22-14	1SBL297001R1422	0.400

[1] AF..-30-..-11 not suitable for direct control by PLC-output.

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3-pole contactors

AF09Z ... AF38Z



AF09Z-30-22



AF26Z-30-22

4 to 18.5 kW - AC / DC operated for specific applications with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	-	12...20	2	2	AF09Z-30-22-20	1SBL136001R2022	0.360
				24...60	20...60	2	2	AF09Z-30-22-21	1SBL136001R2122	0.360
				48...130	48...130	2	2	AF09Z-30-22-22	1SBL136001R2222	0.360
				100...250	100...250	2	2	AF09Z-30-22-23	1SBL136001R2322	0.360
5.5	28	7.5	28	-	12...20	2	2	AF12Z-30-22-20	1SBL156001R2022	0.360
				24...60	20...60	2	2	AF12Z-30-22-21	1SBL156001R2122	0.360
				48...130	48...130	2	2	AF12Z-30-22-22	1SBL156001R2222	0.360
				100...250	100...250	2	2	AF12Z-30-22-23	1SBL156001R2322	0.360
7.5	30	10	30	-	12...20	2	2	AF16Z-30-22-20	1SBL176001R2022	0.360
				24...60	20...60	2	2	AF16Z-30-22-21	1SBL176001R2122	0.360
				48...130	48...130	2	2	AF16Z-30-22-22	1SBL176001R2222	0.360
				100...250	100...250	2	2	AF16Z-30-22-23	1SBL176001R2322	0.360
11	45	15	45	-	12...20	2	2	AF26Z-30-22-20	1SBL236001R2022	0.400
				24...60	20...60	2	2	AF26Z-30-22-21	1SBL236001R2122	0.400
				48...130	48...130	2	2	AF26Z-30-22-22	1SBL236001R2222	0.400
				100...250	100...250	2	2	AF26Z-30-22-23	1SBL236001R2322	0.400
15	50	20	50	-	12...20	2	2	AF30Z-30-22-20	1SBL276001R2022	0.400
				24...60	20...60	2	2	AF30Z-30-22-21	1SBL276001R2122	0.400
				48...130	48...130	2	2	AF30Z-30-22-22	1SBL276001R2222	0.400
				100...250	100...250	2	2	AF30Z-30-22-23	1SBL276001R2322	0.400
18.5	50	25	50	-	12...20	2	2	AF38Z-30-22-20	1SBL296001R2022	0.400
				24...60	20...60	2	2	AF38Z-30-22-21	1SBL296001R2122	0.400
				48...130	48...130	2	2	AF38Z-30-22-22	1SBL296001R2222	0.400
				100...250	100...250	2	2	AF38Z-30-22-23	1SBL296001R2322	0.400

Note: Only AF..Z contactors with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole

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3-pole contactors

AF40 ... AF96



AF40-30-22



AF80-30-22

18.5 to 30 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
18.5	70	30	60	24...60	20...60[1]	2	2	AF40-30-22-11	1SBL347001R1122	1.020
				48...130	48...130	2	2	AF40-30-22-12	1SBL347001R1222	1.020
				100...250	100...250	2	2	AF40-30-22-13	1SBL347001R1322	1.000
				250...500	250...500	2	2	AF40-30-22-14	1SBL347001R1422	1.000
22	100	40	80	24...60	20...60[1]	2	2	AF52-30-22-11	1SBL367001R1122	1.020
				48...130	48...130	2	2	AF52-30-22-12	1SBL367001R1222	1.020
				100...250	100...250	2	2	AF52-30-22-13	1SBL367001R1322	1.000
				250...500	250...500	2	2	AF52-30-22-14	1SBL367001R1422	1.000
30	105	50	90	24...60	20...60[1]	2	2	AF65-30-22-11	1SBL387001R1122	1.020
				48...130	48...130	2	2	AF65-30-22-12	1SBL387001R1222	1.020
				100...250	100...250	2	2	AF65-30-22-13	1SBL387001R1322	1.000
				250...500	250...500	2	2	AF65-30-22-14	1SBL387001R1422	1.000
37	125	60	105	24...60	20...60[1]	2	2	AF80-30-22-11	1SBL397001R1122	1.270
				48...130	48...130	2	2	AF80-30-22-12	1SBL397001R1222	1.270
				100...250	100...250	2	2	AF80-30-22-13	1SBL397001R1322	1.220
				250...500	250...500	2	2	AF80-30-22-14	1SBL397001R1422	1.220
45	130	60	115	24...60	20...60[1]	2	2	AF96-30-22-11	1SBL407001R1122	1.270
				48...130	48...130	2	2	AF96-30-22-12	1SBL407001R1222	1.270
				100...250	100...250	2	2	AF96-30-22-13	1SBL407001R1322	1.220
				250...500	250...500	2	2	AF96-30-22-14	1SBL407001R1422	1.220

[1]For control by PLC-output, use RA4 interface relay.

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3-pole contactors

AF116 ... AF146



AF146-30-22



AF146-30-22B

55 to 75 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	24...60	20...60	2	2	AF116-30-22-11	1SFL427001R1122	1.750
				48...130	48...130	2	2	AF116-30-22-12	1SFL427001R1222	1.750
				100...250	100...250	2	2	AF116-30-22-13	1SFL427001R1322	1.750
				250...500	250...500	2	2	AF116-30-22-14	1SFL427001R1422	1.750
75	200	100	200	24...60	20...60	2	2	AF140-30-22-11	1SFL447001R1122	1.750
				48...130	48...130	2	2	AF140-30-22-12	1SFL447001R1222	1.750
				100...250	100...250	2	2	AF140-30-22-13	1SFL447001R1322	1.750
				250...500	250...500	2	2	AF140-30-22-13	1SFL447001R1422	1.750
75	225	100	200	24...60	20...60	2	2	AF146-30-22-11	1SFL467001R1122	1.750
				48...130	48...130	2	2	AF146-30-22-12	1SFL467001R1222	1.750
				100...250	100...250	2	2	AF146-30-22-13	1SFL467001R1322	1.750
				250...500	250...500	2	2	AF146-30-22-14	1SFL467001R1422	1.750
With bar connections										
55	160	75	160	24...60	20...60	2	2	AF116-30-22B-11	1SFL427002R1122	1.500
				48...130	48...130	2	2	AF116-30-22B-12	1SFL427002R1222	1.500
				100...250	100...250	2	2	AF116-30-22B-13	1SFL427002R1322	1.500
				250...500	250...500	2	2	AF116-30-22B-14	1SFL427002R1422	1.500
75	200	100	200	24...60	20...60	2	2	AF140-30-22B-11	1SFL447002R1122	1.500
				48...130	48...130	2	2	AF140-30-22B-12	1SFL447002R1222	1.500
				100...250	100...250	2	2	AF140-30-22B-13	1SFL447002R1322	1.500
				250...500	250...500	2	2	AF140-30-22B-14	1SFL447002R1422	1.500
75	225	100	200	24...60	20...60	2	2	AF146-30-22B-11	1SFL467002R1122	1.500
				48...130	48...130	2	2	AF146-30-22B-12	1SFL467002R1222	1.500
				100...250	100...250	2	2	AF146-30-22B-13	1SFL467002R1322	1.500
				250...500	250...500	2	2	AF146-30-22B-14	1SFL467002R1422	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF146-30-22



AF146-30-22B

55 to 75 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts for faster opening utilization - with built-in PLC interface

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	100...250	100...250	2	2	AF116-30-22-33	1SFL427001R3322	1.750
				250...500	250...500	2	2	AF116-30-22-34	1SFL427001R3422	1.750
75	200	100	200	100...250	100...250	2	2	AF140-30-22-33	1SFL447001R3322	1.750
				250...500	250...500	2	2	AF140-30-22-34	1SFL447001R3422	1.750
75	225	100	200	100...250	100...250	2	2	AF146-30-22-33	1SFL467001R3322	1.750
				250...500	250...500	2	2	AF146-30-22-34	1SFL467001R3422	1.750
With bar connections										
55	160	75	160	100...250	100...250	2	2	AF116-30-22B-33	1SFL427002R3322	1.500
				250...500	250...500	2	2	AF116-30-22B-34	1SFL427002R3422	1.500
75	200	100	200	100...250	100...250	2	2	AF140-30-22B-33	1SFL447002R3322	1.500
				250...500	250...500	2	2	AF140-30-22B-34	1SFL447002R3422	1.500
75	225	100	200	100...250	100...250	2	2	AF146-30-22B-33	1SFL467002R3322	1.500
				250...500	250...500	2	2	AF146-30-22B-34	1SFL467002R3422	1.500

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF190 ... AF370



AF205-30-22



AF370-30-22

90 to 200 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	24...60	20...60	2	2	AF190-30-22-11	1SFL487002R1122	3.000
				48...130	48...130	2	2	AF190-30-22-12	1SFL487002R1222	3.000
				100...250	100...250	2	2	AF190-30-22-13	1SFL487002R1322	3.000
				250...500	250...500	2	2	AF190-30-22-14	1SFL487002R1422	3.000
110	350	150	300	24...60	20...60	2	2	AF205-30-22-11	1SFL527002R1122	3.000
				48...130	48...130	2	2	AF205-30-22-12	1SFL527002R1222	3.000
				100...250	100...250	2	2	AF205-30-22-13	1SFL527002R1322	3.000
				250...500	250...500	2	2	AF205-30-22-14	1SFL527002R1422	3.000
132	400	200	350	24...60	20...60	2	2	AF265-30-22-11	1SFL547002R1122	4.675
				48...130	48...130	2	2	AF265-30-22-12	1SFL547002R1222	4.675
				100...250	100...250	2	2	AF265-30-22-13	1SFL547002R1322	4.675
				250...500	250...500	2	2	AF265-30-22-14	1SFL547002R1422	4.675
160	500	250	400	24...60	20...60	2	2	AF305-30-22-11	1SFL587002R1122	4.675
				48...130	48...130	2	2	AF305-30-22-12	1SFL587002R1222	4.675
				100...250	100...250	2	2	AF305-30-22-13	1SFL587002R1322	4.675
				250...500	250...500	2	2	AF305-30-22-14	1SFL587002R1422	4.675
200	600	300	520	24...60	20...60	2	2	AF370-30-22-11	1SFL607002R1122	4.675
				48...130	48...130	2	2	AF370-30-22-12	1SFL607002R1222	4.675
				100...250	100...250	2	2	AF370-30-22-13	1SFL607002R1322	4.675
				250...500	250...500	2	2	AF370-30-22-14	1SFL607002R1422	4.675

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.



AF205-30-22



AF370-30-22

90 to 200 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts for faster opening utilization, with built-in PLC interface

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	100...250	100...250	2	2	AF190-30-22-33	1SFL487002R3322	3.000
				250...500	250...500	2	2	AF190-30-22-34	1SFL487002R3422	3.000
110	350	150	300	100...250	100...250	2	2	AF205-30-22-33	1SFL527002R3322	3.000
				250...500	250...500	2	2	AF205-30-22-34	1SFL527002R3422	3.000
132	400	200	350	100...250	100...250	2	2	AF265-30-22-33	1SFL547002R3322	4.675
				250...500	250...500	2	2	AF265-30-22-34	1SFL547002R3422	4.675
160	500	250	400	100...250	100...250	2	2	AF305-30-22-33	1SFL587002R3322	4.675
				250...500	250...500	2	2	AF305-30-22-34	1SFL587002R3422	4.675
200	600	300	520	100...250	100...250	2	2	AF370-30-22-33	1SFL607002R3322	4.675
				250...500	250...500	2	2	AF370-30-22-34	1SFL607002R3422	4.675

[1]For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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3-pole contactors

AF400 ... AF750



AF460-30-22



AF750-30-22

200 to 400 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
200	600	350	550	-	24...60	2	2	AF400-30-22-68	1SFL577001R6822[1]	12.000
				48...130	48...130	2	2	AF400-30-22-69	1SFL577001R6922	12.000
				100...250	100...250	2	2	AF400-30-22-70	1SFL577001R7022	12.000
				250...500	250...500	2	2	AF400-30-22-71	1SFL577001R7122	12.000
250	700	400	650	-	24...60	2	2	AF460-30-22-68	1SFL597001R6822[1]	12.000
				48...130	48...130	2	2	AF460-30-22-69	1SFL597001R6922	12.000
				100...250	100...250	2	2	AF460-30-22-70	1SFL597001R7022	12.000
				250...500	250...500	2	2	AF460-30-22-71	1SFL597001R7122	12.000
315	800	500	750	-	24...60	2	2	AF580-30-22-68	1SFL617001R6822[1]	15.000
				48...130	48...130	2	2	AF580-30-22-69	1SFL617001R6922	15.000
				100...250	100...250	2	2	AF580-30-22-70	1SFL617001R7022	15.000
				250...500	250...500	2	2	AF580-30-22-71	1SFL617001R7122	15.000
400	1050	600	900	-	24...60	2	2	AF750-30-22-68	1SFL637001R6822[1]	15.000
				48...130	48...130	2	2	AF750-30-22-69	1SFL637001R6922	15.000
				100...250	100...250	2	2	AF750-30-22-70	1SFL637001R7022	15.000
				250...500	250...500	2	2	AF750-30-22-71	1SFL637001R7122	15.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.

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3-pole contactors

AF1250 ... AF2850



AF1250-30-22



AF2650-30-22

475 to 560 kW and 1260 to 2850 A AC-1 - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC[2]							
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
-	1260	-	1210	-	24...60	2	2	AF1250-30-22-68	1SFL647001R6822[1]	16.000
				48...130	48...130	2	2	AF1250-30-22-69	1SFL647001R6922	16.000
				100...250	100...250	2	2	AF1250-30-22-70	1SFL647001R7022	16.000
				250...500	250...500	2	2	AF1250-30-22-71	1SFL647001R7122	16.000
475	1350	800	1350	100...250	100...250	2	2	AF1350-30-22-70	1SFL657001R7022	34.000
560	1650	900	1650	100...250	100...250	2	2	AF1650-30-22-70	1SFL677001R7022	35.000
-	2050	-	2100	100...250	100...250	2	2	AF2050-30-22-70	1SFL707001R7022	35.000
-	2650	-	2700	100...250	100...250	2	2	AF2650-30-22-70	1SFL667001R7022	45.000
-	2850	-	2850	100...250	100...250	2	2	AF2850-30-22-70	1SFL687001R7022	45.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
[2]AF2650 : Maximum operational voltage = 1000 V according to UL / CSA.

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3-pole contactors - with Push-in Spring terminals

AF09..K ... AF38..K



AF09-30-10K



AF26-30-00K

4 to 18.5 kW - AC / DC operated

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	24 ... 60	20 ... 60	1	0	AF09-30-10K-11	1SBL137005R1110	0.285
						0	1	AF09-30-01K-11	1SBL137005R1101	0.285
				48 ... 130	48 ... 130	1	0	AF09-30-10K-12	1SBL137005R1210	0.285
						0	1	AF09-30-01K-12	1SBL137005R1201	0.285
				100 ... 250	100 ...250	1	0	AF09-30-10K-13	1SBL137005R1310	0.285
						0	1	AF09-30-01K-13	1SBL137005R1301	0.285
				250 ... 500	250 ...500	1	0	AF09-30-10K-14	1SBL137005R1410	0.325
						0	1	AF09-30-01K-14	1SBL137005R1401	0.325
5.5	28	7.5	28	24 ... 60	20 ... 60	1	0	AF12-30-10K-11	1SBL157005R1110	0.285
						0	1	AF12-30-01K-11	1SBL157005R1101	0.285
				48 ... 130	48 ... 130	1	0	AF12-30-10K-12	1SBL157005R1210	0.285
						0	1	AF12-30-01K-12	1SBL157005R1201	0.285
				100 ... 250	100 ...250	1	0	AF12-30-10K-13	1SBL157005R1310	0.285
						0	1	AF12-30-01K-13	1SBL157005R1301	0.285
				250 ... 500	250 ...500	1	0	AF12-30-10K-14	1SBL157005R1410	0.325
						0	1	AF12-30-01K-14	1SBL157005R1401	0.325
7.5	30	10	30	24 ... 60	20 ... 60	1	0	AF16-30-10K-11	1SBL177005R1110	0.285
						0	1	AF16-30-01K-11	1SBL177005R1101	0.285
				48 ... 130	48 ... 130	1	0	AF16-30-10K-12	1SBL177005R1210	0.285
						0	1	AF16-30-01K-12	1SBL177005R1201	0.285
				100 ... 250	100 ...250	1	0	AF16-30-10K-13	1SBL177005R1310	0.285
						0	1	AF16-30-01K-13	1SBL177005R1301	0.285
				250 ... 500	250 ...500	1	0	AF16-30-10K-14	1SBL177005R1410	0.325
						0	1	AF16-30-01K-14	1SBL177005R1401	0.325
11	45	15	42	24 ... 60	20 ... 60	0	0	AF26-30-00K-11	1SBL237005R1100	0.325
				48 ... 130	48 ... 130	0	0	AF26-30-00K-12	1SBL237005R1200	0.325
				100 ... 250	100 ...250	0	0	AF26-30-00K-13	1SBL237005R1300	0.325
				250 ... 500	250 ...500	0	0	AF26-30-00K-14	1SBL237005R1400	0.365
15	50	20	45	24 ... 60	20 ... 60	0	0	AF30-30-00K-11	1SBL277005R1100	0.330
				48 ... 130	48 ... 130	0	0	AF30-30-00K-12	1SBL277005R1200	0.330
				100 ... 250	100 ...250	0	0	AF30-30-00K-13	1SBL277005R1300	0.330
				250 ... 500	250 ...500	0	0	AF30-30-00K-14	1SBL277005R1400	0.370
18.5	50	25	45	24 ... 60	20 ... 60	0	0	AF38-30-00K-11	1SBL297005R1100	0.330
				48 ... 130	48 ... 130	0	0	AF38-30-00K-12	1SBL297005R1200	0.330
				100 ... 250	100 ...250	0	0	AF38-30-00K-13	1SBL297005R1300	0.330
				250 ... 500	250 ...500	0	0	AF38-30-00K-14	1SBL297005R1400	0.370

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3-pole contactors - with Push-in Spring terminals

AF09Z..K ... AF38Z..K



AF09Z-30-10K



AF26Z-30-00K



AF09Z-30-10K



AF26Z-30-00K

4 to 18.5 kW - 24 V DC operated - designed for PLC

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 40 °C AC-1								
kW	A	hp	A	V DC					kg
4	25	5	25	24	1	0	AF09Z-30-10K-30	1SBL136005R3010	0.435
					0	1	AF09Z-30-01K-30	1SBL136005R3001	0.435
5.5	28	7.5	28	24	1	0	AF12Z-30-10K-30	1SBL156005R3010	0.435
					0	1	AF12Z-30-01K-30	1SBL156005R3001	0.435
7.5	30	10	30	24	1	0	AF16Z-30-10K-30	1SBL176005R3010	0.435
					0	1	AF16Z-30-01K-30	1SBL176005R3001	0.435
11	45	15	42	24	0	0	AF26Z-30-00K-30	1SBL236005R3000	0.440
15	50	20	45	24	0	0	AF30Z-30-00K-30	1SBL276005R3000	0.440
18.5	50	25	45	24	0	0	AF38Z-30-00K-30	1SBL296005R3000	0.440

Note: AF..Z contactors with 24V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.
For product availability, please consult your ABB local sales organization.

4 to 18.5 kW - AC / DC operated - for specific applications

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	–	12 ... 20	1	0	AF09Z-30-10K-20	1SBL136005R2010	0.315
						0	1	AF09Z-30-01K-20	1SBL136005R2001	0.315
				24 ... 60	20 ... 60	1	0	AF09Z-30-10K-21	1SBL136005R2110	0.315
						0	1	AF09Z-30-01K-21	1SBL136005R2101	0.315
				48 ... 130	48 ... 130	1	0	AF09Z-30-10K-22	1SBL136005R2210	0.315
						0	1	AF09Z-30-01K-22	1SBL136005R2201	0.315
				100 ... 250	100 ... 250	1	0	AF09Z-30-10K-23	1SBL136005R2310	0.315
						0	1	AF09Z-30-01K-23	1SBL136005R2301	0.315
5.5	28	7.5	28	–	12 ... 20	1	0	AF12Z-30-10K-20	1SBL156005R2010	0.315
						0	1	AF12Z-30-01K-20	1SBL156005R2001	0.315
				24 ... 60	20 ... 60	1	0	AF12Z-30-10K-21	1SBL156005R2110	0.315
						0	1	AF12Z-30-01K-21	1SBL156005R2101	0.315
				48 ... 130	48 ... 130	1	0	AF12Z-30-10K-22	1SBL156005R2210	0.315
						0	1	AF12Z-30-01K-22	1SBL156005R2201	0.315
				100 ... 250	100 ... 250	1	0	AF12Z-30-10K-23	1SBL156005R2310	0.315
						0	1	AF12Z-30-01K-23	1SBL156005R2301	0.315
7.5	30	10	30	–	12 ... 20	1	0	AF16Z-30-10K-20	1SBL176005R2010	0.315
						0	1	AF16Z-30-01K-20	1SBL176005R2001	0.315
				24 ... 60	20 ... 60	1	0	AF16Z-30-10K-21	1SBL176005R2110	0.315
						0	1	AF16Z-30-01K-21	1SBL176005R2101	0.315
				48 ... 130	48 ... 130	1	0	AF16Z-30-10K-22	1SBL176005R2210	0.315
						0	1	AF16Z-30-01K-22	1SBL176005R2201	0.315
				100 ... 250	100 ... 250	1	0	AF16Z-30-10K-23	1SBL176005R2310	0.315
						0	1	AF16Z-30-01K-23	1SBL176005R2301	0.315
11	45	15	42	–	12 ... 20	0	0	AF26Z-30-00K-20	1SBL236005R2000	0.355
				24 ... 60	20 ... 60	0	0	AF26Z-30-00K-21	1SBL236005R2100	0.355
				48 ... 130	48 ... 130	0	0	AF26Z-30-00K-22	1SBL236005R2200	0.355
				100 ... 250	100 ... 250	0	0	AF26Z-30-00K-23	1SBL236005R2300	0.355
15	50	20	45	–	12 ... 20	0	0	AF30Z-30-00K-20	1SBL276005R2000	0.360
				24 ... 60	20 ... 60	0	0	AF30Z-30-00K-21	1SBL276005R2100	0.360
				48 ... 130	48 ... 130	0	0	AF30Z-30-00K-22	1SBL276005R2200	0.360
				100 ... 250	100 ... 250	0	0	AF30Z-30-00K-23	1SBL276005R2300	0.360
18.5	50	25	45	–	12 ... 20	0	0	AF38Z-30-00K-20	1SBL296005R2000	0.360
				24 ... 60	20 ... 60	0	0	AF38Z-30-00K-21	1SBL296005R2100	0.360
				48 ... 130	48 ... 130	0	0	AF38Z-30-00K-22	1SBL296005R2200	0.360
				100 ... 250	100 ... 250	0	0	AF38Z-30-00K-23	1SBL296005R2300	0.360

Note: Only AF..Z contactors with 12...20 V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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3-pole contactors for safety applications

AFS09 ... AFS38, AFS40 . . . AFS96



AFS16-30-22



AFS38-30-22

4 to 18.5 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated Operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3, AC3-e	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
4	25	5	25	-	24	2	2	AFS09Z-30-22-30	1SBL136082R3022	0.490
				24 ... 60	20 ... 60[1]	2	2	AFS09-30-22-11	1SBL137082R1122	0.320
				100 ... 250	100 ...250	2	2	AFS09-30-22-13	1SBL137082R1322	0.320
5.5	28	7-1/2	28	-	24	2	2	AFS12Z-30-22-30	1SBL156082R3022	0.490
				24 ... 60	20 ... 60[1]	2	2	AFS12-30-22-11	1SBL157082R1122	0.320
				100 ... 250	100 ... 250	2	2	AFS12-30-22-13	1SBL157082R1322	0.320
7.5	30	10	30	-	24	2	2	AFS16Z-30-22-30	1SBL176082R3022	0.490
				24 ... 60	20 ... 60[1]	2	2	AFS16-30-22-11	1SBL177082R1122	0.320
				100 ... 250	100 ... 250	2	2	AFS16-30-22-13	1SBL177082R1322	0.320
11	45	15	45	-	24	2	2	AFS26Z-30-22-30	1SBL236082R3022	0.540
				24 ... 60	20 ... 60[1]	2	2	AFS26-30-22-11	1SBL237082R1122	0.360
				100 ... 250	100 ... 250	2	2	AFS26-30-22-13	1SBL237082R1322	0.360
15	50	20	50	-	24	2	2	AFS30Z-30-22-30	1SBL276082R3022	0.540
				24 ... 60	20 ... 60	2	2	AFS30-30-22-11	1SBL277082R1122	0.360
				100 ... 250	100 ... 250[1]	2	2	AFS30-30-22-13	1SBL277082R1322	0.360
18.5	50	25	50	-	24	2	2	AFS38Z-30-22-30	1SBL296082R3022	0.540
				24 ... 60	20 ... 60[1]	2	2	AFS38-30-22-11	1SBL297082R1122	0.360
				100 ... 250	100 ... 250	2	2	AFS38-30-22-13	1SBL297082R1322	0.360

[1]AFS..-30-..-11 for control by transistor outputs of safety PLCs and safety relays use interface relay RA4 1SBN060100R1000.



AFS65-30-22



AFS96-30-22

18.5 to 45 kW - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3, AC3-e	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
18.5	70	30	60	24 ... 60	20 ... 60[1]	2	2	AFS40-30-22-11	1SBL347082R1122	1.020
				100 ... 250	100 ... 250	2	2	AFS40-30-22-13	1SBL347082R1322	1.000
22	100	40	80	24 ... 60	20 ... 60[1]	2	2	AFS52-30-22-11	1SBL367082R1122	1.020
				100 ... 250	100 ... 250	2	2	AFS52-30-22-13	1SBL367082R1322	1.000
30	105	50	90	24 ... 60	20 ... 60[1]	2	2	AFS65-30-22-11	1SBL387082R1122	1.020
				100 ... 250	100 ... 250	2	2	AFS65-30-22-13	1SBL387082R1322	1.000
37	125	60	105	24 ... 60	20 ... 60[1]	2	2	AFS80-30-22-11	1SBL397082R1122	1.270
				100 ... 250	100 ... 250	2	2	AFS80-30-22-13	1SBL397082R1322	1.220
45	130	60	115	24 ... 60	20 ... 60[1]	2	2	AFS96-30-22-11	1SBL407082R1122	1.270
				100 ... 250	100 ... 250	2	2	AFS96-30-22-13	1SBL407082R1322	1.220

[1]AFS..-30-..-11 for control by transistor outputs of safety PLCs and safety relays use interface relay RA4 1SBN060100R1000.

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3-pole contactors for safety applications

AFS116 ... AFS146



AFS146-30-12

55 to 75 kW - AC / DC operated with 1 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	24...60	20...60	1	2	AFS116-30-12-11	1SFL427081R1112	1.750
				48...130	48...130	1	2	AFS116-30-12-12	1SFL427081R1212	1.750
				100...250	100...250	1	2	AFS116-30-12-13	1SFL427081R1312	1.750
				250...500	250...500	1	2	AFS116-30-12-14	1SFL427081R1412	1.750
75	225	100	200	24...60	20...60	1	2	AFS146-30-12-11	1SFL467081R1112	1.750
				48...130	48...130	1	2	AFS146-30-12-12	1SFL467081R1212	1.750
				100...250	100...250	1	2	AFS146-30-12-13	1SFL467081R1312	1.750
				250...500	250...500	1	2	AFS146-30-12-14	1SFL467081R1412	1.750
With bar connections										
55	160	75	160	24...60	20...60	1	2	AFS116-30-12B-11	1SFL427082R1112	1.500
				48...130	48...130	1	2	AFS116-30-12B-12	1SFL427082R1212	1.500
				100...250	100...250	1	2	AFS116-30-12B-13	1SFL427082R1312	1.500
				250...500	250...500	1	2	AFS116-30-12B-14	1SFL427082R1412	1.500
75	225	100	200	24...60	20...60	1	2	AFS146-30-12B-11	1SFL467082R1112	1.500
				48...130	48...130	1	2	AFS146-30-12B-12	1SFL467082R1212	1.500
				100...250	100...250	1	2	AFS146-30-12B-13	1SFL467082R1312	1.500
				250...500	250...500	1	2	AFS146-30-12B-14	1SFL467082R1412	1.500



AFS146-30-12B



AFS146-30-12

With built-in PLC interface - 55 to 75 kW - AC / DC operated with 1 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50/60 Hz	V DC					kg
For connection with built-in cable clamps										
55	160	75	160	100...250	100...250	1	2	AFS116-30-12-33	1SFL427081R3312	1.750
				250...500	250...500	1	2	AFS116-30-12-34	1SFL427081R3412	1.750
75	225	100	200	100...250	100...250	1	2	AFS146-30-12-33	1SFL467081R3312	1.750
				250...500	250...500	1	2	AFS146-30-12-34	1SFL467081R3412	1.750
With bar connections										
55	160	75	160	100...250	100...250	1	2	AFS116-30-12B-33	1SFL427082R3312	1.500
				250...500	250...500	1	2	AFS116-30-12B-34	1SFL427082R3412	1.500
75	225	100	200	100...250	100...250	1	2	AFS146-30-12B-33	1SFL467082R3312	1.500
				250...500	250...500	1	2	AFS146-30-12B-34	1SFL467082R3412	1.500



AFS146-30-12B

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3-pole contactors for safety applications

AFS190 ... AFS370



AFS205-30-12



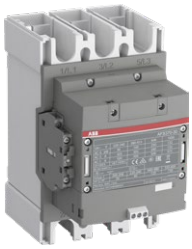
AFS370-30-12

90 to 200 kW - AC / DC operated with 1 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	24...60	20...60	1	2	AFS190-30-12-11	1SFL487082R1112	3.000
				48...130	48...130	1	2	AFS190-30-12-12	1SFL487082R1212	3.000
				100...250	100...250	1	2	AFS190-30-12-13	1SFL487082R1312	3.000
				250...500	250...500	1	2	AFS190-30-12-14	1SFL487082R1412	3.000
110	350	150	300	24...60	20...60	1	2	AFS205-30-12-11	1SFL527082R1112	3.000
				48...130	48...130	1	2	AFS205-30-12-12	1SFL527082R1212	3.000
				100...250	100...250	1	2	AFS205-30-12-13	1SFL527082R1312	3.000
				250...500	250...500	1	2	AFS205-30-12-14	1SFL527082R1412	3.000
132	400	200	350	24...60	20...60	1	2	AFS265-30-12-11	1SFL547082R1112	4.675
				48...130	48...130	1	2	AFS265-30-12-12	1SFL547082R1212	4.675
				100...250	100...250	1	2	AFS265-30-12-13	1SFL547082R1312	4.675
				250...500	250...500	1	2	AFS265-30-12-14	1SFL547082R1412	4.675
160	500	250	400	24...60	20...60	1	2	AFS305-30-12-11	1SFL587082R1112	4.675
				48...130	48...130	1	2	AFS305-30-12-12	1SFL587082R1212	4.675
				100...250	100...250	1	2	AFS305-30-12-13	1SFL587082R1312	4.675
				250...500	250...500	1	2	AFS305-30-12-14	1SFL587082R1412	4.675
200	600	300	520	24...60	20...60	1	2	AFS370-30-12-11	1SFL607082R1112	4.675
				48...130	48...130	1	2	AFS370-30-12-12	1SFL607082R1212	4.675
				100...250	100...250	1	2	AFS370-30-12-13	1SFL607082R1312	4.675
				250...500	250...500	1	2	AFS370-30-12-14	1SFL607082R1412	4.675



AFS205-30-12



AFS370-30-12

With built-in PLC interface - 90 to 200 kW - AC / DC operated with 1 N.O. + 2 N.C. auxiliary contacts

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
90	275	125	250	100...250	100...250	1	2	AFS190-30-12-33	1SFL487082R3312	3.000
				250...500	250...500	1	2	AFS190-30-12-34	1SFL487082R3412	3.000
110	350	150	300	100...250	100...250	1	2	AFS205-30-12-33	1SFL527082R3312	3.000
				250...500	250...500	1	2	AFS205-30-12-34	1SFL527082R3412	3.000
132	400	200	350	100...250	100...250	1	2	AFS265-30-12-33	1SFL547082R3312	4.675
				250...500	250...500	1	2	AFS265-30-12-34	1SFL547082R3412	4.675
160	500	250	400	100...250	100...250	1	2	AFS305-30-12-33	1SFL587082R3312	4.675
				250...500	250...500	1	2	AFS305-30-12-34	1SFL587082R3412	4.675
200	600	300	520	100...250	100...250	1	2	AFS370-30-12-33	1SFL607082R3312	4.675
				250...500	250...500	1	2	AFS370-30-12-34	1SFL607082R3412	4.675

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3-pole contactors for safety applications

AFS400 ... AFS750



AFS460-30-12



AFS750-30-12

200 to 400 kW - AC / DC operated with 1 N.O. + 2 N.C. auxiliary contacts

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C 690 V AC-1									
kW	A	hp	A	V 50/60 Hz	V DC					kg
200	600	350	550	-	24...60	1	2	AFS400-30-12-68	1SFL577081R6812[1]	12.000
				48...130	48...130	1	2	AFS400-30-12-69	1SFL577081R6912	12.000
				100...250	100...250	1	2	AFS400-30-12-70	1SFL577081R7012	12.000
				250...500	250...500	1	2	AFS400-30-12-71	1SFL577081R7112	12.000
250	700	400	650	-	24...60	1	2	AFS460-30-12-68	1SFL597081R6812[1]	12.000
				48...130	48...130	1	2	AFS460-30-12-69	1SFL597081R6912	12.000
				100...250	100...250	1	2	AFS460-30-12-70	1SFL597081R7012	12.000
				250...500	250...500	1	2	AFS460-30-12-71	1SFL597081R7112	12.000
315	800	500	750	-	24...60	1	2	AFS580-30-12-68	1SFL617081R6812[1]	15.000
				48...130	48...130	1	2	AFS580-30-12-69	1SFL617081R6912	15.000
				100...250	100...250	1	2	AFS580-30-12-70	1SFL617081R7012	15.000
				250...500	250...500	1	2	AFS580-30-12-71	1SFL617081R7112	15.000
400	1050	600	900	-	24...60	1	2	AFS750-30-12-68	1SFL637081R6812[1]	15.000
				48...130	48...130	1	2	AFS750-30-12-69	1SFL637081R6912	15.000
				100...250	100...250	1	2	AFS750-30-12-70	1SFL637081R7012	15.000
				250...500	250...500	1	2	AFS750-30-12-71	1SFL637081R7112	15.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.

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3-pole contactors

AFC09 ... AFC25



AFC09-30-10

4 to 11 kW - AC operated

IEC		UL / CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1			V 50 Hz	V 60 Hz					
kW	A	hp	A							kg
4	25	5	25	24	24	1	0	AFC09-30-10-81	1SBL131001R8110	0.331
						0	1	AFC09-30-01-81	1SBL131001R8101	0.331
				110	110 ... 120	1	0	AFC09-30-10-84	1SBL131001R8410	0.328
						0	1	AFC09-30-01-84	1SBL131001R8401	0.328
				220 ... 230	230 ... 240	1	0	AFC09-30-10-80	1SBL131001R8010	0.322
						0	1	AFC09-30-01-80	1SBL131001R8001	0.322
				230 ... 240	240 ... 260	1	0	AFC09-30-10-88	1SBL131001R8810	0.324
						0	1	AFC09-30-01-88	1SBL131001R8801	0.324
				380 ... 400	400 ... 415	1	0	AFC09-30-10-85	1SBL131001R8510	0.318
						0	1	AFC09-30-01-85	1SBL131001R8501	0.318
				400 ... 415	415 ... 440	1	0	AFC09-30-10-86	1SBL131001R8610	0.321
						0	1	AFC09-30-01-86	1SBL131001R8601	0.321
5.5	28	7.5	28	24	24	1	0	AFC12-30-10-81	1SBL151001R8110	0.331
						0	1	AFC12-30-01-81	1SBL151001R8101	0.331
				110	110 ... 120	1	0	AFC12-30-10-84	1SBL151001R8410	0.328
						0	1	AFC12-30-01-84	1SBL151001R8401	0.328
				220 ... 230	230 ... 240	1	0	AFC12-30-10-80	1SBL151001R8010	0.322
						0	1	AFC12-30-01-80	1SBL151001R8001	0.322
				230 ... 240	240 ... 260	1	0	AFC12-30-10-88	1SBL151001R8810	0.324
						0	1	AFC12-30-01-88	1SBL151001R8801	0.324
				380 ... 400	400 ... 415	1	0	AFC12-30-10-85	1SBL151001R8510	0.318
						0	1	AFC12-30-01-85	1SBL151001R8501	0.318
				400 ... 415	415 ... 440	1	0	AFC12-30-10-86	1SBL151001R8610	0.321
						0	1	AFC12-30-01-86	1SBL151001R8601	0.321
7.5	30	10	30	24	24	1	0	AFC16-30-10-81	1SBL171001R8110	0.331
						0	1	AFC16-30-01-81	1SBL171001R8101	0.331
				110	110 ... 120	1	0	AFC16-30-10-84	1SBL171001R8410	0.328
						0	1	AFC16-30-01-84	1SBL171001R8401	0.328
				220 ... 230	230 ... 240	1	0	AFC16-30-10-80	1SBL171001R8010	0.322
						0	1	AFC16-30-01-80	1SBL171001R8001	0.322
				230 ... 240	240 ... 260	1	0	AFC16-30-10-88	1SBL171001R8810	0.324
						0	1	AFC16-30-01-88	1SBL171001R8801	0.324
				380 ... 400	400 ... 415	1	0	AFC16-30-10-85	1SBL171001R8510	0.318
						0	1	AFC16-30-01-85	1SBL171001R8501	0.318
				400 ... 415	415 ... 440	1	0	AFC16-30-10-86	1SBL171001R8610	0.321
						0	1	AFC16-30-01-86	1SBL171001R8601	0.321
11	30	15	30	24	24	1	0	AFC25-30-10-81	1SBL211001R8110	0.333
						0	1	AFC25-30-01-81	1SBL211001R8101	0.333
				110	110 ... 120	1	0	AFC25-30-10-84	1SBL211001R8410	0.330
						0	1	AFC25-30-01-84	1SBL211001R8401	0.330
				220 ... 230	230 ... 240	1	0	AFC25-30-10-80	1SBL211001R8010	0.324
						0	1	AFC25-30-01-80	1SBL211001R8001	0.324
				230 ... 240	240 ... 260	1	0	AFC25-30-10-88	1SBL211001R8810	0.326
						0	1	AFC25-30-01-88	1SBL211001R8801	0.326
				380 ... 400	400 ... 415	1	0	AFC25-30-10-85	1SBL211001R8510	0.320
						0	1	AFC25-30-01-85	1SBL211001R8501	0.320
				400 ... 415	415 ... 440	1	0	AFC25-30-10-86	1SBL211001R8610	0.323
						0	1	AFC25-30-01-86	1SBL211001R8601	0.323

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3-pole contactors

AFC26 ... AFC38



AFC26-30-10

11 to 18.5 kW - AC operated

IEC		UL / CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating 600 V AC							
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
11	45	15	45	24	24	0	0	AFC26-30-00-81	1SBL231001R8100	0.383
				110	110 ... 120	0	0	AFC26-30-00-84	1SBL231001R8400	0.380
				220 ... 230	230 ... 240	0	0	AFC26-30-00-80	1SBL231001R8000	0.374
				230 ... 240	240 ... 260	0	0	AFC26-30-00-88	1SBL231001R8800	0.376
				380 ... 400	400 ... 415	0	0	AFC26-30-00-85	1SBL231001R8500	0.370
				400 ... 415	415 ... 440	0	0	AFC26-30-00-86	1SBL231001R8600	0.373
15	50	20	50	24	24	0	0	AFC30-30-00-81	1SBL271001R8100	0.383
				110	110 ... 120	0	0	AFC30-30-00-84	1SBL271001R8400	0.380
				220 ... 230	230 ... 240	0	0	AFC30-30-00-80	1SBL271001R8000	0.374
				230 ... 240	240 ... 260	0	0	AFC30-30-00-88	1SBL271001R8800	0.376
				380 ... 400	400 ... 415	0	0	AFC30-30-00-85	1SBL271001R8500	0.370
				400 ... 415	415 ... 440	0	0	AFC30-30-00-86	1SBL271001R8600	0.373
18.5	50	25	50	24	24	0	0	AFC38-30-00-81	1SBL291001R8100	0.383
				110	110 ... 120	0	0	AFC38-30-00-84	1SBL291001R8400	0.380
				220 ... 230	230 ... 240	0	0	AFC38-30-00-80	1SBL291001R8000	0.374
				230 ... 240	240 ... 260	0	0	AFC38-30-00-88	1SBL291001R8800	0.376
				380 ... 400	400 ... 415	0	0	AFC38-30-00-85	1SBL291001R8500	0.370
				400 ... 415	415 ... 440	0	0	AFC38-30-00-86	1SBL291001R8600	0.373

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3-pole contactors

AFC40 ... AFC96



AFC40-30-00



AFC80-30-00

18.5 to 45 kW - AC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50 Hz	60 Hz					kg
18.5	70	30	60	24	24	0	0	AFC40-30-00-81	1SBL341001R8100	0.972
				110	110 ... 120	0	0	AFC40-30-00-84	1SBL341001R8400	0.969
				220 ... 230	230 ... 240	0	0	AFC40-30-00-80	1SBL341001R8000	0.963
				230 ... 240	240 ... 260	0	0	AFC40-30-00-88	1SBL341001R8800	0.965
				380 ... 400	400 ... 415	0	0	AFC40-30-00-85	1SBL341001R8500	0.959
				400 ... 415	415 ... 440	0	0	AFC40-30-00-86	1SBL341001R8600	0.962
22	100	40	80	24	24	0	0	AFC52-30-00-81	1SBL361001R8100	0.972
				110	110 ... 120	0	0	AFC52-30-00-84	1SBL361001R8400	0.969
				220 ... 230	230 ... 240	0	0	AFC52-30-00-80	1SBL361001R8000	0.963
				230 ... 240	240 ... 260	0	0	AFC52-30-00-88	1SBL361001R8800	0.965
				380 ... 400	400 ... 415	0	0	AFC52-30-00-85	1SBL361001R8500	0.959
				400 ... 415	415 ... 440	0	0	AFC52-30-00-86	1SBL361001R8600	0.962
30	105	50	90	24	24	0	0	AFC65-30-00-81	1SBL381001R8100	0.972
				110	110 ... 120	0	0	AFC65-30-00-84	1SBL381001R8400	0.969
				220 ... 230	230 ... 240	0	0	AFC65-30-00-80	1SBL381001R8000	0.963
				230 ... 240	240 ... 260	0	0	AFC65-30-00-88	1SBL381001R8800	0.965
				380 ... 400	400 ... 415	0	0	AFC65-30-00-85	1SBL381001R8500	0.959
				400 ... 415	415 ... 440	0	0	AFC65-30-00-86	1SBL381001R8600	0.962
37	105	60	90	24	24	0	0	AFC78-30-00-81	1SBL301001R8100	0.972
				110	110 ... 120	0	0	AFC78-30-00-84	1SBL301001R8400	0.969
				220 ... 230	230 ... 240	0	0	AFC78-30-00-80	1SBL301001R8000	0.963
				230 ... 240	240 ... 260	0	0	AFC78-30-00-88	1SBL301001R8800	0.965
				380 ... 400	400 ... 415	0	0	AFC78-30-00-85	1SBL301001R8500	0.959
				400 ... 415	415 ... 440	0	0	AFC78-30-00-86	1SBL301001R8600	0.962
37	125	60	105	24	24	0	0	AFC80-30-00-81	1SBL391001R8100	1.193
				110	110 ... 120	0	0	AFC80-30-00-84	1SBL391001R8400	1.199
				220 ... 230	230 ... 240	0	0	AFC80-30-00-80	1SBL391001R8000	1.204
				230 ... 240	240 ... 260	0	0	AFC80-30-00-88	1SBL391001R8800	1.196
				380 ... 400	400 ... 415	0	0	AFC80-30-00-85	1SBL391001R8500	1.194
				400 ... 415	415 ... 440	0	0	AFC80-30-00-86	1SBL391001R8600	1.198
45	130	60	115	24	24	0	0	AFC96-30-00-81	1SBL401001R8100	1.193
				110	110 ... 120	0	0	AFC96-30-00-84	1SBL401001R8400	1.199
				220 ... 230	230 ... 240	0	0	AFC96-30-00-80	1SBL401001R8000	1.204
				230 ... 240	240 ... 260	0	0	AFC96-30-00-88	1SBL401001R8800	1.196
				380 ... 400	400 ... 415	0	0	AFC96-30-00-85	1SBL401001R8500	1.194
				400 ... 415	415 ... 440	0	0	AFC96-30-00-86	1SBL401001R8600	1.198

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3-pole contactors

AFC40 ... AFC96



AFC40-30-00



AFC80-30-00

18.5 to 45 kW - AC operated - With specific 60 Hz voltage

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50 Hz	60 Hz					kg
18.5	70	30	60	175	208	0	0	AFC40-30-00-34	1SBL341001R3400	0.969
				230 ... 240	277	0	0	AFC40-30-00-42	1SBL341001R4200	0.964
				400 ... 415	480	0	0	AFC40-30-00-51	1SBL341001R5100	0.962
22	100	40	80	175	208	0	0	AFC52-30-00-34	1SBL361001R3400	0.969
				230 ... 240	277	0	0	AFC52-30-00-42	1SBL361001R4200	0.964
				400 ... 415	480	0	0	AFC52-30-00-51	1SBL361001R5100	0.962
30	105	50	90	175	208	0	0	AFC65-30-00-34	1SBL381001R3400	0.969
				230 ... 240	277	0	0	AFC65-30-00-42	1SBL381001R4200	0.964
				400 ... 415	480	0	0	AFC65-30-00-51	1SBL381001R5100	0.962
37	105	60	90	175	208	0	0	AFC78-30-00-34	1SBL301001R3400	0.969
				230 ... 240	277	0	0	AFC78-30-00-42	1SBL301001R4200	0.964
				400 ... 415	480	0	0	AFC78-30-00-51	1SBL301001R5100	0.962
37	125	60	105	175	208	0	0	AFC80-30-00-34	1SBL391001R3400	1.197
				230 ... 240	277	0	0	AFC80-30-00-42	1SBL391001R4200	1.196
				400 ... 415	480	0	0	AFC80-30-00-51	1SBL391001R5100	1.198
45	130	60	115	175	208	0	0	AFC96-30-00-34	1SBL401001R3400	1.197
				230 ... 240	277	0	0	AFC96-30-00-42	1SBL401001R4200	1.196
				400 ... 415	480	0	0	AFC96-30-00-51	1SBL401001R5100	1.198

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3-pole contactors with Push-in Spring terminals

AFC09..K … AFC16..K, AFC26..K … AFC38..K



AFC09-30-10K

4 to 7.5 kW - AC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. … Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
4	25	5	25	24	24	1	0	AFC09-30-10K-81	1SBL131005R8110	0.317
						0	1	AFC09-30-01K-81	1SBL131005R8101	0.317
				110	110 … 120	1	0	AFC09-30-10K-84	1SBL131005R8410	0.314
						0	1	AFC09-30-01K-84	1SBL131005R8401	0.314
				220 … 230	230 … 240	1	0	AFC09-30-10K-80	1SBL131005R8010	0.306
						0	1	AFC09-30-01K-80	1SBL131005R8001	0.306
				230 … 240	240 … 260	1	0	AFC09-30-10K-88	1SBL131005R8810	0.311
						0	1	AFC09-30-01K-88	1SBL131005R8801	0.311
5.5	28	7.5	28	24	24	1	0	AFC12-30-10K-81	1SBL151005R8100	0.317
						0	1	AFC12-30-01K-81	1SBL151005R8101	0.317
				110	110 … 120	1	0	AFC12-30-10K-84	1SBL151005R8410	0.314
						0	1	AFC12-30-01K-84	1SBL151005R8401	0.314
				220 … 230	230 … 240	1	0	AFC12-30-10K-80	1SBL151005R8010	0.306
						0	1	AFC12-30-01K-80	1SBL151005R8001	0.306
				230 … 240	240 … 260	1	0	AFC12-30-10K-88	1SBL151005R8810	0.311
						0	1	AFC12-30-01K-88	1SBL151005R8801	0.311
7.5	30	10	30	24	24	1	0	AFC16-30-10K-81	1SBL171005R8110	0.317
						0	1	AFC16-30-01K-81	1SBL171005R8101	0.317
				110	110 … 120	1	0	AFC16-30-10K-84	1SBL171005R8410	0.314
						0	1	AFC16-30-01K-84	1SBL171005R8401	0.314
				220 … 230	230 … 240	1	0	AFC16-30-10K-80	1SBL171005R8010	0.306
						0	1	AFC16-30-01K-80	1SBL171005R8001	0.306
				230 … 240	240 … 260	1	0	AFC16-30-10K-88	1SBL171005R8810	0.311
						0	1	AFC16-30-01K-88	1SBL171005R8801	0.311



AFC26-30-10-K

11 to 18.5 kW - AC operated

IEC		UL / CSA		Rated control circuit voltage Uc min. … Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
11	45	15	42	24	24	0	0	AFC26-30-00K-81	1SBL231005R8100	0.359
				110	110 … 120	0	0	AFC26-30-00K-84	1SBL231005R8400	0.356
				220 … 230	230 … 240	0	0	AFC26-30-00K-80	1SBL231005R8000	0.350
				230 … 240	240 … 260	0	0	AFC26-30-00K-88	1SBL231005R8800	0.351
15	50	20	45	24	24	0	0	AFC30-30-00K-81	1SBL271005R8100	0.359
				110	110 … 120	0	0	AFC30-30-00K-84	1SBL271005R8400	0.356
				220 … 230	230 … 240	0	0	AFC30-30-00K-80	1SBL271005R8000	0.350
				230 … 240	240 … 260	0	0	AFC30-30-00K-88	1SBL271005R8800	0.351
18.5	50	25	45	24	24	0	0	AFC38-30-00K-81	1SBL291005R8100	0.359
				110	110 … 120	0	0	AFC38-30-00K-84	1SBL291005R8400	0.356
				220 … 230	230 … 240	0	0	AFC38-30-00K-80	1SBL291005R8000	0.350
				230 … 240	240 … 260	0	0	AFC38-30-00K-88	1SBL291005R8800	0.351

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NEMA 3-pole contactors

AF09N00, AF12N0, AF26N1 ... AF80N3



AF09N00-30-10

AC / DC operated

NEMA ratings

NEMA sizes	Continuous current	Rated control circuit maximum motor horsepower rating			Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
		200 V	230 V	460 V / 575 V	V 50/60 Hz	V DC					kg
00	9	0.5	0.5	2	24...60	20...60[1]	1	0	AF09N00-30-10-11	1SBL137001N1110	0.270
							0	1	AF09N00-30-01-11	1SBL137001N1101	0.270
					48...130	48...130	1	0	AF09N00-30-10-12	1SBL137001N1210	0.270
							0	1	AF09N00-30-01-12	1SBL137001N1201	0.270
					100...250	100...250	1	0	AF09N00-30-10-13	1SBL137001N1310	0.270
							0	1	AF09N00-30-01-13	1SBL137001N1301	0.270
					250...500	250...500	1	0	AF09N00-30-10-14	1SBL137001N1410	0.310
							0	1	AF09N00-30-01-14	1SBL137001N1401	0.310
0	18	3	3	5	24...60	20...60[1]	1	0	AF12N0-30-10-11	1SBL157001N1110	0.270
							0	1	AF12N0-30-01-11	1SBL157001N1101	0.270
					48...130	48...130	1	0	AF12N0-30-10-12	1SBL157001N1210	0.270
							0	1	AF12N0-30-01-12	1SBL157001N1201	0.270
					100...250	100...250	1	0	AF12N0-30-10-13	1SBL157001N1310	0.270
							0	1	AF12N0-30-01-13	1SBL157001N1301	0.270
					250...500	250...500	1	0	AF12N0-30-10-14	1SBL157001N1410	0.310
							0	1	AF12N0-30-01-14	1SBL157001N1401	0.310

[1]AF..-30-..-11 not suitable for direct control by PLC-output.



AF26N1-30-11

AC / DC operated

NEMA ratings

NEMA sizes	Continuous current	Rated control circuit maximum motor horsepower rating			Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
		200 V	230 V	460 V / 575 V	V 50/60 Hz	V DC					kg
1	27	7.5	7.5	10	24...60	20...60[1]	1	1	AF26N1-30-11-11	1SBL237001N1111	0.310
					48...130	48...130	1	1	AF26N1-30-11-12	1SBL237001N1211	0.310
					100...250	100...250	1	1	AF26N1-30-11-13	1SBL237001N1311	0.310
					250...500	250...500	1	1	AF26N1-30-11-14	1SBL237001N1411	0.350
2	45	10	15	25	24...60	20...60[2]	1	1	AF40N2-30-11-11	1SBL347001N1111	1.010
					48...130	48...130	1	1	AF40N2-30-11-12	1SBL347001N1211	1.010
					100...250	100...250	1	1	AF40N2-30-11-13	1SBL347001N1311	0.990
					250...500	250...500	1	1	AF40N2-30-11-14	1SBL347001N1411	0.990
3	90	25	30	50	24...60	20...60[2]	1	1	AF80N3-30-11-11	1SBL397001N1111	1.260
					48...130	48...130	1	1	AF80N3-30-11-12	1SBL397001N1211	1.260
					100...250	100...250	1	1	AF80N3-30-11-13	1SBL397001N1311	1.210
					250...500	250...500	1	1	AF80N3-30-11-14	1SBL397001N1411	1.210



AF40N2-30-11

[1]AF..-30-..-11 not suitable for direct control by PLC-output.
[2]For control by PLC-output, use RA4 interface relay.



AF80N3-30-11

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NEMA 3-pole contactors

AF140N4, AF265N5, AF460N6 ... AF1650N8



AF140N4-30-11



AF265N5-30-11

AC / DC operated

NEMA ratings

NEMA sizes	Continuous current	Rated control circuit maximum motor horsepower rating			Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
		200 V	230 V	460 V / 575 V	V 50/60 Hz	V DC					kg
4	135	40	50	100	24...60	20...60	1	1	AF140N4-30-11-11	1SFL447001N1111	1.750
					48...130	48...130	1	1	AF140N4-30-11-12	1SFL447001N1211	1.750
					100...250	100...250	1	1	AF140N4-30-11-13	1SFL447001N1311	1.750
					250...500	250...500	1	1	AF140N4-30-11-14	1SFL447001N1411	1.750
5	270	75	100	200	24...60	20...60	1	1	AF265N5-30-11-11	1SFL547002N1111	4.610
					48...130	48...130	1	1	AF265N5-30-11-12	1SFL547002N1211	4.610
					100...250	100...250	1	1	AF265N5-30-11-13	1SFL547002N1311	4.610
					250...500	250...500	1	1	AF265N5-30-11-14	1SFL547002N1411	4.610



AF460N6-30-11-..



AF750N7-30-11-..



AF1650N8-30-11-70

AC / DC operated

NEMA ratings

NEMA sizes	Continuous current	Rated control circuit maximum motor horsepower rating			Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
		200 V	230 V	460 V / 575 V	V 50/60 Hz	V DC					kg
6	540	150	200	400	-	24...60	1	1	AF460N6-3011-68	1SFL597001N6811	12.000
					48...130	48...130	1	1	AF460N6-3011-69	1SFL597001N6911	12.000
					100...250	100...250	1	1	AF460N6-3011-70	1SFL597001N7011	12.000
					250...500	250...500	1	1	AF460N6-3011-71	1SFL597001N7111	12.000
7	810	-	300	600	-	24...60	1	1	AF750N7-3011-68	1SFL637001N6811	15.000
					48...130	48...130	1	1	AF750N7-3011-69	1SFL637001N6911	15.000
					100...250	100...250	1	1	AF750N7-3011-70	1SFL637001N7011	15.000
					250...500	250...500	1	1	AF750N7-3011-71	1SFL637001N7111	15.000
8	1215	-	450	900	100...250	100...250	1	1	AF1650N83011-70	1SFL677001N7011	35.000

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4-pole contactors






IEC	AC-1 Rated operational current	θ ≤ 40 °C, 690 V	A	25	30	45	55	70	100	125
UL/CSA	General use rating	600 V	A	25	30	45	55	60	80	105
AC / DC Control supply			Type	**AF09**	**AF16**	**AF26**	**AF38**	**AF40**	**AF52**	**AF80**
AC Control supply			Type	**AF09**	**AF16**	**AF26**	**AF38**	**AF40**	**AF52**	**AF80**
DC Control supply			Type	**AF09**	**AF16**	**AF26**	**AF38**	**AF40**	**AF52**	**AF80**
IEC	AC-1 Rated operational current 690 V	θ ≤ 40 °C	A	25	30	45	55	70	100	125
		θ ≤ 60 °C[1]	A	25	30	40	45	60	80	105
		θ ≤ 70 °C	A	22	26	32	37	50	70	90
	With conductor cross sectional area		mm²	4	6	10	16	35	35	50
	Rated operational voltage Ue max.		V	690	690	690	690	690	690	690

[1]θ ≤ 55 °C for EK550, EK1000 contactors

Main accessories

Auxiliary contact blocks	Front mounting	**CA4-10** (1 x N.O.), **CA4-01** (1 x N.C.)	
	Side mounting	**CAL4-11** (1 x N.O. + 1 x N.C.)	
Timers	Electronic	**TEF4-ON** **TEF4-OFF**	
Interlocking units	Mechanical	**VM4**	**VM96-4**
	Mechanical / Electrical	**VEM4**	
Surge suppressors	Varistor + RC (AC / DC)	Built-in surge protection	

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4-pole contactors





IEC	AC-1 Rated operational current	θ ≤ 40 °C, 690 V	A	160	200	275	350
UL/CSA	General use rating	600 V	A	160	175	230	250
AC / DC Control supply			Type	**AF116**	**AF140**	**AF190**	**AF205**
AC Control supply			Type	**AF116**	**AF140**	**AF190**	**AF205**
DC Control supply			Type	**AF116**	**AF140**	**AF190**	**AF205**
IEC	AC-1 Rated operational current 690 V	θ ≤ 40 °C	A	160	200	275	350
		θ ≤ 60 °C[1]	A	145	175	250	300
		θ ≤ 70 °C	A	130	160	200	240
	With conductor cross sectional area		mm^2	70	95	150	240
	Rated operational voltage Ue max.		V	690	690	1000	1000

[1]θ ≤ 55 °C for EK550, EK1000 contactors

Main accessories

Auxiliary contact blocks	Front mounting	**CAL19-11** (1 x N.O. + 1 x N.C.)
	Side mounting	
Timers	Electronic	
Interlocking units	Mechanical	**VM19** (for same size contactors)
	Mechanical / Electrical	
Surge suppressors	Varistor + RC (AC / DC)	

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4-pole contactors





IEC	AC-1 Rated operational current	θ ≤ 40 °C, 690 V	A	400	500	525	800	1000
UL/CSA	General use rating	600 V	A	300	350	420	540	—
AC / DC Control supply			Type	**AF265**	**AF305**	**AF370**	—	—
AC Control supply			Type	**AF265**	**AF305**	**AF370**	**EK550**	**EK1000**
DC Control supply			Type	**AF265**	**AF305**	**AF370**	**EK550**	**EK1000**
IEC	AC-1 Rated operational current 690 V	θ ≤ 40 °C	A	400	500	525	800	1000
		θ ≤ 60 °C[1]	A	350	400	425	650	800
		θ ≤ 70 °C	A	290	325	350	575	720
	With conductor cross sectional area		mm²	240	300	2 x 185	2 x 240	2 x 300
	Rated operational voltage Ue max.		V	1000	1000	1000	1000	1000

[1]θ ≤ 55 °C for EK550, EK1000 contactors

Main accessories

Auxiliary contact blocks	Front mounting		
	Side mounting	**CAL19-11** (1 x N.O. + 1 x N.C.)	**CAL16-11** (1 x N.O. + 1 x N.C.)
Timers	Electronic		
Interlocking units	Mechanical	**VM19** (for same size contactors)	**VH800**
	Mechanical / Electrical		
Surge suppressors	Varistor + RC (AC / DC)		**RC-EH800**

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4-pole contactors

AF09 ... AF38



AF09-40-00



AF26-40-00

25 to 55 A AC-1 - AC / DC operated

IEC	UL/CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
25	25	24...60	20...60[1]	0	0	AF09-40-00-11	1SBL137201R1100	0.270
		48...130	48...130	0	0	AF09-40-00-12	1SBL137201R1200	0.270
		100...250	100...250	0	0	AF09-40-00-13	1SBL137201R1300	0.270
		250...500	250...500	0	0	AF09-40-00-14	1SBL137201R1400	0.310
30	30	24...60	20...60[1]	0	0	AF16-40-00-11	1SBL177201R1100	0.270
		48...130	48...130	0	0	AF16-40-00-12	1SBL177201R1200	0.270
		100...250	100...250	0	0	AF16-40-00-13	1SBL177201R1300	0.270
		250...500	250...500	0	0	AF16-40-00-14	1SBL177201R1400	0.310
45	45	24...60	20...60[1]	0	0	AF26-40-00-11	1SBL237201R1100	0.360
		48...130	48...130	0	0	AF26-40-00-12	1SBL237201R1200	0.360
		100...250	100...250	0	0	AF26-40-00-13	1SBL237201R1300	0.360
		250...500	250...500	0	0	AF26-40-00-14	1SBL237201R1400	0.400
55	55	24...60	20...60[1]	0	0	AF38-40-00-11	1SBL297201R1100	0.360
		48...130	48...130	0	0	AF38-40-00-12	1SBL297201R1200	0.360
		100...250	100...250	0	0	AF38-40-00-13	1SBL297201R1300	0.360
		250...500	250...500	0	0	AF38-40-00-14	1SBL297201R1400	0.400
2 N.O. + 2 N.C. main poles								
25	25	24...60	20...60[1]	0	0	AF09-22-00-11	1SBL137501R1100	0.270
		48...130	48...130	0	0	AF09-22-00-12	1SBL137501R1200	0.270
		100...250	100...250	0	0	AF09-22-00-13	1SBL137501R1300	0.270
		250...500	250...500	0	0	AF09-22-00-14	1SBL137501R1400	0.310
30	30	24...60	20...60[1]	0	0	AF16-22-00-11	1SBL177501R1100	0.270
		48...130	48...130	0	0	AF16-22-00-12	1SBL177501R1200	0.270
		100...250	100...250	0	0	AF16-22-00-13	1SBL177501R1300	0.270
		250...500	250...500	0	0	AF16-22-00-14	1SBL177501R1400	0.310
45	45	24...60	20...60[1]	0	0	AF26-22-00-11	1SBL237501R1100	0.360
		48...130	48...130	0	0	AF26-22-00-12	1SBL237501R1200	0.360
		100...250	100...250	0	0	AF26-22-00-13	1SBL237501R1300	0.360
		250...500	250...500	0	0	AF26-22-00-14	1SBL237501R1400	0.400
55	55	24...60	20...60[1]	0	0	AF38-22-00-11	1SBL297501R1100	0.360
		48...130	48...130	0	0	AF38-22-00-12	1SBL297501R1200	0.360
		100...250	100...250	0	0	AF38-22-00-13	1SBL297501R1300	0.360
		250...500	250...500	0	0	AF38-22-00-14	1SBL297501R1400	0.400

[1]AF..-40-..-11 and AF..-22-..-11 not suitable for direct control by PLC-output.

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4-pole contactors

AF09Z ... AF16Z, AF09Z . . . AF38Z



AF09Z-40-00

25 to 30 A AC-1 - 24 V DC operated designed for PLC

IEC Rated operational current θ ≤ 40 °C AC-1	UL/CSA General use rating 600 V AC	Rated control circuit voltage Uc	Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce)
A	A	V DC				kg
4 N.O. main poles						
25	25	24	0 0	AF09Z-40-00-30	1SBL136201R3000	0.430
30	30	24	0 0	AF16Z-40-00-30	1SBL176201R3000	0.430
2 N.O. + 2 N.C. main poles						
25	25	24	0 0	AF09Z-22-00-30	1SBL136501R3000	0.430
30	30	24	0 0	AF16Z-22-00-30	1SBL176501R3000	0.430

Note: AF..Z contactors with 24 V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.



AF09Z-40-00

25 to 55 A AC-1 - AC / DC operated for specific applications

IEC Rated operational current θ ≤ 40 °C AC-1	UL/CSA General use rating 600 V AC	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC				kg
4 N.O. main poles							
25	25	-	12...20	0 0	AF09Z-40-00-20	1SBL136201R2000	0.310
		24...60	20...60	0 0	AF09Z-40-00-21	1SBL136201R2100	0.310
		48...130	48...130	0 0	AF09Z-40-00-22	1SBL136201R2200	0.310
		100...250	100...250	0 0	AF09Z-40-00-23	1SBL136201R2300	0.310
30	30	-	12...20	0 0	AF16Z-40-00-20	1SBL176201R2000	0.310
		24...60	20...60	0 0	AF16Z-40-00-21	1SBL176201R2100	0.310
		48...130	48...130	0 0	AF16Z-40-00-22	1SBL176201R2200	0.310
		100...250	100...250	0 0	AF16Z-40-00-23	1SBL176201R2300	0.310
45	45	-	12...20	0 0	AF26Z-40-00-20	1SBL236201R2000	0.400
		24...60	20...60	0 0	AF26Z-40-00-21	1SBL236201R2100	0.400
		48...130	48...130	0 0	AF26Z-40-00-22	1SBL236201R2200	0.400
		100...250	100...250	0 0	AF26Z-40-00-23	1SBL236201R2300	0.400
55	55	-	12...20	0 0	AF38Z-40-00-20	1SBL296201R2000	0.400
		24...60	20...60	0 0	AF38Z-40-00-21	1SBL296201R2100	0.400
		48...130	48...130	0 0	AF38Z-40-00-22	1SBL296201R2200	0.400
		100...250	100...250	0 0	AF38Z-40-00-23	1SBL296201R2300	0.400
2 N.O. + 2 N.C. main poles							
25	25	-	12...20	0 0	AF09Z-22-00-20	1SBL136501R2000	0.310
		24...60	20...60	0 0	AF09Z-22-00-21	1SBL136501R2100	0.310
		48...130	48...130	0 0	AF09Z-22-00-22	1SBL136501R2200	0.310
		100...250	100...250	0 0	AF09Z-22-00-23	1SBL136501R2300	0.310
30	30	-	12...20	0 0	AF16Z-22-00-20	1SBL176501R2000	0.310
		24...60	20...60	0 0	AF16Z-22-00-21	1SBL176501R2100	0.310
		48...130	48...130	0 0	AF16Z-22-00-22	1SBL176501R2200	0.310
		100...250	100...250	0 0	AF16Z-22-00-23	1SBL176501R2300	0.310
45	45	-	12...20	0 0	AF26Z-22-00-20	1SBL236501R2000	0.400
		24...60	20...60	0 0	AF26Z-22-00-21	1SBL236501R2100	0.400
		48...130	48...130	0 0	AF26Z-22-00-22	1SBL236501R2200	0.400
		100...250	100...250	0 0	AF26Z-22-00-23	1SBL236501R2300	0.400
55	55	-	12...20	0 0	AF38Z-22-00-20	1SBL296501R2000	0.400
		24...60	20...60	0 0	AF38Z-22-00-21	1SBL296501R2100	0.400
		48...130	48...130	0 0	AF38Z-22-00-22	1SBL296501R2200	0.400
		100...250	100...250	0 0	AF38Z-22-00-23	1SBL296501R2300	0.400



AF26Z-40-00

Note: Only AF..Z contactors with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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4-pole contactors

AF40 ... AF80, AF116 . . . AF140



AF40-40-00



AF80-40-00

70 to 125 A AC-1 - AC / DC operated

IEC	UL/CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
70	60	24...60	20...60	0	0	AF40-40-00-11	1SBL347201R1100	1.210
		48...130	48...130	0	0	AF40-40-00-12	1SBL347201R1200	1.210
		100...250	100...250	0	0	AF40-40-00-13	1SBL347201R1300	1.160
		250...500	250...500	0	0	AF40-40-00-14	1SBL347201R1400	1.160
100	80	24...60	20...60	0	0	AF52-40-00-11	1SBL367201R1100	1.210
		48...130	48...130	0	0	AF52-40-00-12	1SBL367201R1200	1.210
		100...250	100...250	0	0	AF52-40-00-13	1SBL367201R1300	1.160
		250...500	250...500	0	0	AF52-40-00-14	1SBL367201R1400	1.160
125	105	24...60	20...60	0	0	AF80-40-00-11	1SBL397201R1100	1.490
		48...130	48...130	0	0	AF80-40-00-12	1SBL397201R1200	1.490
		100...250	100...250	0	0	AF80-40-00-13	1SBL397201R1300	1.440
		250...500	250...500	0	0	AF80-40-00-14	1SBL397201R1400	1.440
2 N.O. + 2 N.C. main poles								
70	60	24...60	20...60	0	0	AF40-22-00-11	1SBL347501R1100	1.210
		48...130	48...130	0	0	AF40-22-00-12	1SBL347501R1200	1.210
		100...250	100...250	0	0	AF40-22-00-13	1SBL347501R1300	1.160
		250...500	250...500	0	0	AF40-22-00-14	1SBL347501R1400	1.160
125	105	24...60	20...60	0	0	AF80-22-00-11	1SBL397501R1100	1.490
		48...130	48...130	0	0	AF80-22-00-12	1SBL397501R1200	1.490
		100...250	100...250	0	0	AF80-22-00-13	1SBL397501R1300	1.440
		250...500	250...500	0	0	AF80-22-00-14	1SBL397501R1400	1.440

For control by PLC-output, use RA4 interface relay.



AF140-40-00



AF140-40-00B

160 to 200 A AC-1 - AC / DC operated

IEC	UL / CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles For connection with built-in cable clamps								
160	160	24...60	20...60	0	0	AF116-40-00-11	1SFL427101R1100	2.250
		48...130	48...130	0	0	AF116-40-00-12	1SFL427101R1200	2.250
		100...250	100...250	0	0	AF116-40-00-13	1SFL427101R1300	2.250
		250...500	250...500	0	0	AF116-40-00-14	1SFL427101R1400	2.250
200	175	24...60	20...60	0	0	AF140-40-00-11	1SFL447101R1100	2.250
		48...130	48...130	0	0	AF140-40-00-12	1SFL447101R1200	2.250
		100...250	100...250	0	0	AF140-40-00-13	1SFL447101R1300	2.250
		250...500	250...500	0	0	AF140-40-00-14	1SFL447101R1400	2.250
With bar connections								
160	160	24...60	20...60	0	0	AF116-40-00B-11	1SFL427102R1100	2.150
		48...130	48...130	0	0	AF116-40-00B-12	1SFL427102R1200	2.150
		100...250	100...250	0	0	AF116-40-00B-13	1SFL427102R1300	2.150
		250...500	250...500	0	0	AF116-40-00B-14	1SFL427102R1400	2.150
200	175	24...60	20...60	0	0	AF140-40-00B-11	1SFL447102R1100	2.150
		48...130	48...130	0	0	AF140-40-00B-12	1SFL447102R1200	2.150
		100...250	100...250	0	0	AF140-40-00B-13	1SFL447102R1300	2.150
		250...500	250...500	0	0	AF140-40-00B-14	1SFL447102R1400	2.150

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

AF190 … AF370



AF205-40-00



AF370-40-00

275 to 525 A AC-1 - AC / DC operated

IEC	UL / CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
275	230	24...60	20...60	0	0	AF190-40-00-11	1SFL487102R1100	3.900
		48...130	48...130	0	0	AF190-40-00-12	1SFL487102R1200	3.900
		100...250	100...250	0	0	AF190-40-00-13	1SFL487102R1300	3.900
		250...500	250...500	0	0	AF190-40-00-14	1SFL487102R1400	3.900
350	250	24...60	20...60	0	0	AF205-40-00-11	1SFL527102R1100	3.900
		48...130	48...130	0	0	AF205-40-00-12	1SFL527102R1200	3.900
		100...250	100...250	0	0	AF205-40-00-13	1SFL527102R1300	3.900
		250...500	250...500	0	0	AF205-40-00-14	1SFL527102R1400	3.900
400	300	24...60	20...60	0	0	AF265-40-00-11	1SFL547102R1100	6.360
		48...130	48...130	0	0	AF265-40-00-12	1SFL547102R1200	6.360
		100...250	100...250	0	0	AF265-40-00-13	1SFL547102R1300	6.360
		250...500	250...500	0	0	AF265-40-00-14	1SFL547102R1400	6.360
500	350	24...60	20...60	0	0	AF305-40-00-11	1SFL587102R1100	6.360
		48...130	48...130	0	0	AF305-40-00-12	1SFL587102R1200	6.360
		100...250	100...250	0	0	AF305-40-00-13	1SFL587102R1300	6.360
		250...500	250...500	0	0	AF305-40-00-14	1SFL587102R1400	6.360
525	420	24...60	20...60	0	0	AF370-40-00-11	1SFL607102R1100	6.360
		48...130	48...130	0	0	AF370-40-00-12	1SFL607102R1200	6.360
		100...250	100...250	0	0	AF370-40-00-13	1SFL607102R1300	6.360
		250...500	250...500	0	0	AF370-40-00-14	1SFL607102R1400	6.360

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

AF116 … AF140



AF140-40-11



AF140-40-11B

160 to 200 A AC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC Rated operational current θ ≤ 40 °C AC-1	UL / CSA General use rating 600 V AC	Rated control circuit voltage Uc min. … Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles **For connection with built-in cable clamps**								
160	160	24…60	20…60	1	1	AF116-40-11-11	1SFL427101R1111	2.270
		48…130	48…130	1	1	AF116-40-11-12	1SFL427101R1211	2.270
		100…250	100…250	1	1	AF116-40-11-13	1SFL427101R1311	2.270
		250…500	250…500	1	1	AF116-40-11-14	1SFL427101R1411	2.270
200	175	24…60	20…60	1	1	AF140-40-11-11	1SFL447101R1111	2.270
		48…130	48…130	1	1	AF140-40-11-12	1SFL447101R1211	2.270
		100…250	100…250	1	1	AF140-40-11-13	1SFL447101R1311	2.270
		250…500	250…500	1	1	AF140-40-11-14	1SFL447101R1411	2.270
With bar connections								
160	160	24…60	20…60	1	1	AF116-40-11B-11	1SFL427102R1111	2.170
		48…130	48…130	1	1	AF116-40-11B-12	1SFL427102R1211	2.170
		100…250	100…250	1	1	AF116-40-11B-13	1SFL427102R1311	2.170
		250…500	250…500	1	1	AF116-40-11B-14	1SFL427102R1411	2.170
200	175	24…60	20…60	1	1	AF140-40-11B-11	1SFL447102R1111	2.170
		48…130	48…130	1	1	AF140-40-11B-12	1SFL447102R1211	2.170
		100…250	100…250	1	1	AF140-40-11B-13	1SFL447102R1311	2.170
		250…500	250…500	1	1	AF140-40-11B-14	1SFL447102R1411	2.170

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

AF190 … AF370



AF205-40-11



AF370-40-11

275 to 525 A AC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC	UL / CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
275	230	24...60	20...60	1	1	AF190-40-11-11	1SFL487102R1111	3.920
		48...130	48...130	1	1	AF190-40-11-12	1SFL487102R1211	3.920
		100...250	100...250	1	1	AF190-40-11-13	1SFL487102R1311	3.920
		250...500	250...500	1	1	AF190-40-11-14	1SFL487102R1411	3.920
350	250	24...60	20...60	1	1	AF205-40-11-11	1SFL527102R1111	3.920
		48...130	48...130	1	1	AF205-40-11-12	1SFL527102R1211	3.920
		100...250	100...250	1	1	AF205-40-11-13	1SFL527102R1311	3.920
		250...500	250...500	1	1	AF205-40-11-14	1SFL527102R1411	3.920
400	300	24...60	20...60	1	1	AF265-40-11-11	1SFL547102R1111	6.380
		48...130	48...130	1	1	AF265-40-11-12	1SFL547102R1211	6.380
		100...250	100...250	1	1	AF265-40-11-13	1SFL547102R1311	6.380
		250...500	250...500	1	1	AF265-40-11-14	1SFL547102R1411	6.380
500	350	24...60	20...60	1	1	AF305-40-11-11	1SFL587102R1111	6.380
		48...130	48...130	1	1	AF305-40-11-12	1SFL587102R1211	6.380
		100...250	100...250	1	1	AF305-40-11-13	1SFL587102R1311	6.380
		250...500	250...500	1	1	AF305-40-11-14	1SFL587102R1411	6.380
525	420	24...60	20...60	1	1	AF370-40-11-11	1SFL607102R1111	6.380
		48...130	48...130	1	1	AF370-40-11-12	1SFL607102R1211	6.380
		100...250	100...250	1	1	AF370-40-11-13	1SFL607102R1311	6.380
		250...500	250...500	1	1	AF370-40-11-14	1SFL607102R1411	6.380

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

AF116 … AF140



AF140-40-22



AF140-40-22B

160 to 200 A AC-1 - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC	UL / CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
For connection with built-in cable clamps								
160	160	24...60	20...60	2	2	AF116-40-22-11	1SFL427101R1122	2.290
		48...130	48...130	2	2	AF116-40-22-12	1SFL427101R1222	2.290
		100...250	100...250	2	2	AF116-40-22-13	1SFL427101R1322	2.290
		250...500	250...500	2	2	AF116-40-22-14	1SFL427101R1422	2.290
200	175	24...60	20...60	2	2	AF140-40-22-11	1SFL447101R1122	2.290
		48...130	48...130	2	2	AF140-40-22-12	1SFL447101R1222	2.290
		100...250	100...250	2	2	AF140-40-22-13	1SFL447101R1322	2.290
		250...500	250...500	2	2	AF140-40-22-14	1SFL447101R1422	2.290
With bar connections								
160	160	24...60	20...60	2	2	AF116-40-22B-11	1SFL427102R1122	2.190
		48...130	48...130	2	2	AF116-40-22B-12	1SFL427102R1222	2.190
		100...250	100...250	2	2	AF116-40-22B-13	1SFL427102R1322	2.190
		250...500	250...500	2	2	AF116-40-22B-14	1SFL427102R1422	2.190
200	175	24...60	20...60	2	2	AF140-40-22B-11	1SFL447102R1122	2.190
		48...130	48...130	2	2	AF140-40-22B-12	1SFL447102R1222	2.190
		100...250	100...250	2	2	AF140-40-22B-13	1SFL447102R1322	2.190
		250...500	250...500	2	2	AF140-40-22B-14	1SFL447102R1422	2.190

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

AF190 … AF370



AF205-40-22



AF370-40-22

275 to 525 A AC-1 - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC Rated operational current θ ≤ 40 °C AC-1	UL / CSA General use rating 600 V AC	Rated control circuit voltage Uc min. … Uc max.		Auxiliary contacts fitted		Type[1]	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
275	230	24…60	20…60	2	2	AF190-40-22-11	1SFL487102R1122	3.940
		48…130	48…130	2	2	AF190-40-22-12	1SFL487102R1222	3.940
		100…250	100…250	2	2	AF190-40-22-13	1SFL487102R1322	3.940
		250…500	250…500	2	2	AF190-40-22-14	1SFL487102R1422	3.940
350	250	24…60	20…60	2	2	AF205-40-22-11	1SFL527102R1122	3.940
		48…130	48…130	2	2	AF205-40-22-12	1SFL527102R1222	3.940
		100…250	100…250	2	2	AF205-40-22-13	1SFL527102R1322	3.940
		250…500	250…500	2	2	AF205-40-22-14	1SFL527102R1422	3.940
400	300	24…60	20…60	2	2	AF265-40-22-11	1SFL547102R1122	6.400
		48…130	48…130	2	2	AF265-40-22-12	1SFL547102R1222	6.400
		100…250	100…250	2	2	AF265-40-22-13	1SFL547102R1322	6.400
		250…500	250…500	2	2	AF265-40-22-14	1SFL547102R1422	6.400
500	350	24…60	20…60	2	2	AF305-40-22-11	1SFL587102R1122	6.400
		48…130	48…130	2	2	AF305-40-22-12	1SFL587102R1222	6.400
		100…250	100…250	2	2	AF305-40-22-13	1SFL587102R1322	6.400
		250…500	250…500	2	2	AF305-40-22-14	1SFL587102R1422	6.400
525	420	24…60	20…60	2	2	AF370-40-22-11	1SFL607102R1122	6.400
		48…130	48…130	2	2	AF370-40-22-12	1SFL607102R1222	6.400
		100…250	100…250	2	2	AF370-40-22-13	1SFL607102R1322	6.400
		250…500	250…500	2	2	AF370-40-22-14	1SFL607102R1422	6.400

[1]For other auxiliary contacts arrangements, please contact your ABB local organization.

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4-pole contactors

EK550, EK1000



EK1000-40-11

800 to 1000 A AC-1 - AC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC	UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50 Hz	V 60 Hz					kg
800	540	220	220...240	1	1	EK550-40-11	SK827041-EL	17.200
		220...230	230...255	1	1	EK550-40-11	SK827041-EM	17.200
		400...415	-	1	1	EK550-40-11	SK827041-AR	17.200
1000	-	220	220...240	1	1	EK1000-40-11	SK827044-EL	17.500
		220...230	230...255	1	1	EK1000-40-11	SK827044-EM	17.500
		400...415	-	1	1	EK1000-40-11	SK827044-AR	17.500

[1]Other control voltages see voltage code table.



EK1000-40-21

800 to 1000 A AC-1 - DC operated with 2 N.O. + 1 N.C. auxiliary contacts

IEC	UL / CSA	Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC						
A	A	V DC					kg
800	540	48	2	1	EK550-40-21	SK827041-DD	17.200
		110	2	1	EK550-40-21	SK827041-DE	17.200
		125	2	1	EK550-40-21	SK827041-DU	17.200
		220	2	1	EK550-40-21	SK827041-DF	17.200
1000	-	36	2	1	EK1000-40-21	SK827044-DC	17.500
		48	2	1	EK1000-40-21	SK827044-DD	17.500
		60	2	1	EK1000-40-21	SK827044-DT	17.500
		110	2	1	EK1000-40-21	SK827044-DE	17.500
		125	2	1	EK1000-40-21	SK827044-DU	17.500
		220	2	1	EK1000-40-21	SK827044-DF	17.500



EK1000-40-22

800 to 1000 A AC-1 - AC operated with 2 N.O. + 2 N.C. auxiliary contacts

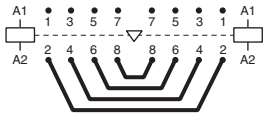
IEC	UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50 Hz	V 60 Hz					kg
800	540	220	220...240	2	2	EK550-40-22	SK827043-EL	17.200
		220...230	230...255	2	2	EK550-40-22	SK827043-EM	17.200
		400...415	-	2	2	EK550-40-22	SK827043-AR	17.200
1000	-	220	220...240	2	2	EK1000-40-22	SK827045-EL	17.500
		220...230	230...255	2	2	EK1000-40-22	SK827045-EM	17.500
		380	380...415	2	2	EK1000-40-22	SK827045-EP	17.500
		380...400	400...440	2	2	EK1000-40-22	SK827045-ER	17.500
		400...415	-	2	2	EK1000-40-22	SK827045-AR	17.500

[1]Other control voltages see voltage code table.

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Accessories

EK550, EK1000



BSS550 ... BSS1000



RC-EH

For 4-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts and 2 N.O. + 1 N.C. auxiliary contact

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce) kg
Side-mounted auxiliary contact blocks						
EK	1	1	CAL16-11B	SK829002-B	1	0.050
	1	1	CAL16-11C	SK829002-C	1	0.050
	1	1	CAL16-11D	SK829002-D	1	0.050
	1	1	CCL16-11E[1]	SK829002-E	1	0.050
Mechanical interlock unit for two horizontal mounted contactors						
EK550, EK1000			VH800	SK829070-F	1	6.000
Connecting sets						
EK550			BSS550	SK829090-E	1	3.300
EK1000			BSS1000	SK829090-H	1	5.500

Surge suppressors

For contactors	Rated control circuit voltage Uc			Type	Order code	Pkg qty	Weight (1 pce) kg
	V	AC	DC				
EK550, EK1000	48...110	●	–	RC-EH800/110	SK829007-C	1	0.015
EK550, EK1000	24...125	–	●	RC-EH800/110	SK829007-C	1	0.015
EK550, EK1000	220...600	●	–	RC-EH800/600	SK829007-D	1	0.015

See "Main accessory fitting details" table.
[1]Mounting of CCL16-11E blocks does not allow an additional second block to be added on top of it.
All DC operated EK contactors are equipped with one CCL16-11E on the right side.

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4-pole contactors

AFC09, AFC16, AFC26, AFC38



AFC09-40-00

25 to 30 A AC-1 - AC operated

IEC	UL/CSA	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50 Hz	V 60 Hz					kg
4 N.O. main poles								
25	25	24	24	0	0	AFC09-40-00-81	1SBL131201R8100	0.331
		110	110 ... 120	0	0	AFC09-40-00-84	1SBL131201R8400	0.328
		220 ... 230	230 ... 240	0	0	AFC09-40-00-80	1SBL131201R8000	0.322
		230 ... 240	240 ... 260	0	0	AFC09-40-00-88	1SBL131201R8800	0.324
		380 ... 400	400 ... 415	0	0	AFC09-40-00-85	1SBL131201R8500	0.318
		400 ... 415	415 ... 440	0	0	AFC09-40-00-86	1SBL131201R8600	0.321
30	30	24	24	0	0	AFC16-40-00-81	1SBL171201R8100	0.331
		110	110 ... 120	0	0	AFC16-40-00-84	1SBL171201R8400	0.328
		220 ... 230	230 ... 240	0	0	AFC16-40-00-80	1SBL171201R8000	0.322
		230 ... 240	240 ... 260	0	0	AFC16-40-00-88	1SBL171201R8800	0.324
		380 ... 400	400 ... 415	0	0	AFC16-40-00-85	1SBL171201R8500	0.318
		400 ... 415	415 ... 440	0	0	AFC16-40-00-86	1SBL171201R8600	0.321
4 N.C. main poles								
30	30	24	24	0	0	AFC16-04-00-81	1SBL171101R8100	0.331
		110	110 ... 120	0	0	AFC16-04-00-84	1SBL171101R8400	0.328
		220 ... 230	230 ... 240	0	0	AFC16-04-00-80	1SBL171101R8000	0.322
		230 ... 240	240 ... 260	0	0	AFC16-04-00-88	1SBL171101R8800	0.324
		380 ... 400	400 ... 415	0	0	AFC16-04-00-85	1SBL171101R8500	0.318
		400 ... 415	415 ... 440	0	0	AFC16-04-00-86	1SBL171101R8600	0.321
2 N.O. + 2 N.C. main poles								
25	25	24	24	0	0	AFC09-22-00-81	1SBL131501R8100	0.331
		110	110 ... 120	0	0	AFC09-22-00-84	1SBL131501R8400	0.328
		220 ... 230	230 ... 240	0	0	AFC09-22-00-80	1SBL131501R8000	0.322
		230 ... 240	240 ... 260	0	0	AFC09-22-00-88	1SBL131501R8800	0.324
		380 ... 400	400 ... 415	0	0	AFC09-22-00-85	1SBL131501R8500	0.318
		400 ... 415	415 ... 440	0	0	AFC09-22-00-86	1SBL131501R8600	0.321
30	30	24	24	0	0	AFC16-22-00-81	1SBL171501R8100	0.331
		110	110 ... 120	0	0	AFC16-22-00-84	1SBL171501R8400	0.328
		220 ... 230	230 ... 240	0	0	AFC16-22-00-80	1SBL171501R8000	0.322
		230 ... 240	240 ... 260	0	0	AFC16-22-00-88	1SBL171501R8800	0.324
		380 ... 400	400 ... 415	0	0	AFC16-22-00-85	1SBL171501R8500	0.318
		400 ... 415	415 ... 440	0	0	AFC16-22-00-86	1SBL171501R8600	0.321

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4-pole contactors

AFC09, AFC16, AFC26, AFC38



AFC26-40-00

45 to 55 A - AC-1

IEC	UL/CSA	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50 Hz	V 60 Hz					kg
4 N.O. main poles								
45	45	24	24	0	0	AFC26-40-00-81	1SBL231201R8100	0.423
		110	110 ... 120	0	0	AFC26-40-00-84	1SBL231201R8400	0.420
		220 ... 230	230 ... 240	0	0	AFC26-40-00-80	1SBL231201R8000	0.414
		230 ... 240	240 ... 260	0	0	AFC26-40-00-88	1SBL231201R8800	0.416
		380 ... 400	400 ... 415	0	0	AFC26-40-00-85	1SBL231201R8500	0.410
		400 ... 415	415 ... 440	0	0	AFC26-40-00-86	1SBL231201R8600	0.411
55	55	24	24	0	0	AFC38-40-00-81	1SBL291201R8100	0.423
		110	110 ... 120	0	0	AFC38-40-00-84	1SBL291201R8400	0.420
		220 ... 230	230 ... 240	0	0	AFC38-40-00-80	1SBL291201R8000	0.414
		230 ... 240	240 ... 260	0	0	AFC38-40-00-88	1SBL291201R8800	0.416
		380 ... 400	400 ... 415	0	0	AFC38-40-00-85	1SBL291201R8500	0.410
		400 ... 415	415 ... 440	0	0	AFC38-40-00-86	1SBL291201R8600	0.411
2 N.O. + 2 N.C. main poles								
45	45	24	24	0	0	AFC26-22-00-81	1SBL231501R8100	0.423
		110	110 ... 120	0	0	AFC26-22-00-84	1SBL231501R8400	0.420
		220 ... 230	230 ... 240	0	0	AFC26-22-00-80	1SBL231501R8000	0.414
		230 ... 240	240 ... 260	0	0	AFC26-22-00-88	1SBL231501R8800	0.416
		380 ... 400	400 ... 415	0	0	AFC26-22-00-85	1SBL231501R8500	0.410
		400 ... 415	415 ... 440	0	0	AFC26-22-00-86	1SBL231501R8600	0.411
55	55	24	24	0	0	AFC38-22-00-81	1SBL291501R8100	0.423
		110	110 ... 120	0	0	AFC38-22-00-84	1SBL291501R8400	0.420
		220 ... 230	230 ... 240	0	0	AFC38-22-00-80	1SBL291501R8000	0.414
		230 ... 240	240 ... 260	0	0	AFC38-22-00-88	1SBL291501R8800	0.416
		380 ... 400	400 ... 415	0	0	AFC38-22-00-85	1SBL291501R8500	0.410
		400 ... 415	415 ... 440	0	0	AFC38-22-00-86	1SBL291501R8600	0.411

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4-pole contactors

AFC40 ... AFC80



AFC40-40-00



AFC80-40-00

45 to 55 A - AC-1

IEC	UL/CSA	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC							
A	A	V 50 Hz	60 Hz					kg
4 N.O. main poles								
70	60	24	24	0	0	AFC40-40-00-81	1SBL341201R8100	1.154
		110	110 ... 120	0	0	AFC40-40-00-84	1SBL341201R8400	1.160
		220 ... 230	230 ... 240	0	0	AFC40-40-00-80	1SBL341201R8000	1.165
		230 ... 240	240 ... 260	0	0	AFC40-40-00-88	1SBL341201R8800	1.157
		380 ... 400	400 ... 415	0	0	AFC40-40-00-85	1SBL341201R8500	1.155
		400 ... 415	415 ... 440	0	0	AFC40-40-00-86	1SBL341201R8600	1.159
100	80	24	24	0	0	AFC52-40-00-81	1SBL361201R8100	1.154
		110	110 ... 120	0	0	AFC52-40-00-84	1SBL361201R8400	1.160
		220 ... 230	230 ... 240	0	0	AFC52-40-00-80	1SBL361201R8000	1.165
		230 ... 240	240 ... 260	0	0	AFC52-40-00-88	1SBL361201R8800	1.157
		380 ... 400	400 ... 415	0	0	AFC52-40-00-85	1SBL361201R8500	1.155
		400 ... 415	415 ... 440	0	0	AFC52-40-00-86	1SBL361201R8600	1.159
125	105	24	24	0	0	AFC80-40-00-81	1SBL391201R8100	1.449
		110	110 ... 120	0	0	AFC80-40-00-84	1SBL391201R8400	1.455
		220 ... 230	230 ... 240	0	0	AFC80-40-00-80	1SBL391201R8000	1.460
		230 ... 240	240 ... 260	0	0	AFC80-40-00-88	1SBL391201R8800	1.452
		380 ... 400	400 ... 415	0	0	AFC80-40-00-85	1SBL391201R8500	1.450
		400 ... 415	415 ... 440	0	0	AFC80-40-00-86	1SBL391201R8600	1.454
2 N.O. + 2 N.C. main poles								
70	60	24	24	0	0	AFC40-22-00-81	1SBL341501R8100	1.159
		110	110 ... 120	0	0	AFC40-22-00-84	1SBL341501R8400	1.165
		220 ... 230	230 ... 240	0	0	AFC40-22-00-80	1SBL341501R8000	1.170
		230 ... 240	240 ... 260	0	0	AFC40-22-00-88	1SBL341501R8800	1.162
		380 ... 400	400 ... 415	0	0	AFC40-22-00-85	1SBL341501R8500	1.160
		400 ... 415	415 ... 440	0	0	AFC40-22-00-86	1SBL341501R8600	1.164
125	105	24	24	0	0	AFC80-22-00-81	1SBL391501R8100	1.458
		110	110 ... 120	0	0	AFC80-22-00-84	1SBL391501R8400	1.464
		220 ... 230	230 ... 240	0	0	AFC80-22-00-80	1SBL391501R8000	1.469
		230 ... 240	240 ... 260	0	0	AFC80-22-00-88	1SBL391501R8800	1.461
		380 ... 400	400 ... 415	0	0	AFC80-22-00-85	1SBL391501R8500	1.459
		400 ... 415	415 ... 440	0	0	AFC80-22-00-86	1SBL391501R8600	1.463

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4-pole contactors with Push-in Spring terminals

AF09..K ... AF16..K



25 to 30 A AC-1

AC / DC operated

IEC	UL/CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C	General use rating 600 V AC							
A	A	V 50/60 Hz	V DC					kg
4 N.O. main poles								
25	25	24...60	20...60	0	0	AF09-40-00K-11	1SBL137205R1100	0.285
		48...130	48...130	0	0	AF09-40-00K-12	1SBL137205R1200	0.285
		100...250	100...250	0	0	AF09-40-00K-13	1SBL137205R1300	0.285
		250...500	250...500	0	0	AF09-40-00K-14	1SBL137205R1400	0.285
30	30	24...60	20...60	0	0	AF16-40-00K-11	1SBL177205R1100	0.285
		48...130	48...130	0	0	AF16-40-00K-12	1SBL177205R1200	0.285
		100...250	100...250	0	0	AF16-40-00K-13	1SBL177205R1300	0.285
		250...500	250...500	0	0	AF16-40-00K-14	1SBL177205R1400	0.285
2 N.O. + 2 N.C. main poles								
25	25	24...60	20...60	0	0	AF09-22-00K-11	1SBL137505R1100	0.285
		48...130	48...130	0	0	AF09-22-00K-12	1SBL137505R1200	0.285
		100...250	100...250	0	0	AF09-22-00K-13	1SBL137505R1300	0.285
		250...500	250...500	0	0	AF09-22-00K-14	1SBL137505R1400	0.285
30	30	24...60	20...60	0	0	AF16-22-00K-11	1SBL177505R1100	0.285
		48...130	48...130	0	0	AF16-22-00K-12	1SBL177505R1200	0.285
		100...250	100...250	0	0	AF16-22-00K-13	1SBL177505R1300	0.285
		250...500	250...500	0	0	AF16-22-00K-14	1SBL177505R1400	0.285

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4-pole contactors with Push-in Spring terminals

AF09Z..K ... AF16Z..K



25 to 30 A AC-1

AC / DC operated - low consumption

IEC	UL/CSA	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C AC-1	General use rating 600 V AC						
A	A	V 50/60 Hz	V DC				kg
4 N.O. main poles							
25	25	-	12...20	2 2	AF09Z-40-00K-20	1SBL136205R2000	0.315
		24...60	20...60	2 2	AF09Z-40-00K-21	1SBL136205R2100	0.315
		48...130	48...130	2 2	AF09Z-40-00K-22	1SBL136205R2200	0.315
		100...250	100...250	2 2	AF09Z-40-00K-23	1SBL136205R2300	0.315
30	30	-	12...20	2 2	AF16Z-40-00K-20	1SBL176205R2000	0.315
		24...60	20...60	2 2	AF16Z-40-00K-21	1SBL176205R2100	0.315
		48...130	48...130	2 2	AF16Z-40-00K-22	1SBL176205R2200	0.315
		100...250	100...250	2 2	AF16Z-40-00K-23	1SBL176205R2300	0.315
2 N.O. + 2 N.C. main poles							
25	25	-	12...20	2 2	AF09Z-22-00K-20	1SBL136505R2000	0.315
		24...60	20...60	2 2	AF09Z-22-00K-21	1SBL136505R2100	0.315
		48...130	48...130	2 2	AF09Z-22-00K-22	1SBL136505R2200	0.315
		100...250	100...250	2 2	AF09Z-22-00K-23	1SBL136505R2300	0.315
30	30	-	12...20	2 2	AF16Z-22-00K-20	1SBL176505R2000	0.315
		24...60	20...60	2 2	AF16Z-22-00K-21	1SBL176505R2100	0.315
		48...130	48...130	2 2	AF16Z-22-00K-22	1SBL176505R2200	0.315
		100...250	100...250	2 2	AF16Z-22-00K-23	1SBL176505R2300	0.315

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Digital Solutions - Novolink



SCV10-40.1



SC10-40.1



SFM1-A11.1



SFM-CAB-RJTB.1-500



SFM-CAB-S.1-50



SFM-CAB-S.1-25

Description
ABB`s Novolink devices consist of the smart function module SFM1 and the sensor module SCV10-40. They allow the remote control and monitoring of AF contactors via X20 bus from within a B&R PLC. The sensor module SCV10-40 is optional and can be connected to the SFM1 module and provides functions for motor and application protection. It provides data for measuring voltage, current, frequency and further derived physical quantities such as cos phi, real power etc.

The SFM1 can be snapped onto AF09...AF96 contactors with 24 V DC coil voltage. The module is equipped with two X2X interfaces for incoming and outgoing connections (daisy chain). The module and contactor are supplied via 24 V DC that are also used for the SCV10-40 module.

Ordering details

Description	Type	Order code	Weight (1 pc) kg (lb)
Connection cable from PLC to first SFM1 module	SFM-CAB-RJTB.1-500	1SVM823000R0500	0.192 kg (0.423 lb)
Connection cable from SFM1 to SCV10, length 50 cm	SFM-CAB-S.1-50	1SVM811000R0050	0.015 kg (0.0331 lb)
Connection cable from SFM1 to SCV10, length 25 cm	SFM-CAB-S.1-25	1SVM811000R0025	0.008 kg (0.0176 lb)
Smart current and voltage sensor module	SCV10-40.1	1SVM320010R0000	0.23 kg (0. 507 lb)
Smart current sensor module	SC10-40.1	1SVM310010R0000	0.195 kg (0.429 lb)
Smart function module	SFM1-A11.1	1SVM120012R0000	0.11 kg (0.243 lb)

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Contactors

GF875 ... GF1050



GF1050-30-22

875 to 1050 A DC-PV3 - AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts

IEC	UL/CSA	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational current θ ≤ 40 °C 1500 V DC-PV3	General use rating θ ≤ 40 °C 1500 V DC							
A	A	V 50/60 Hz	V DC					kg
875	210	24...60	20...60	2	2	GF875-20-22-51	1SFL617731R5122	14.3
		100...250	100...250	2	2	GF875-20-22-53	1SFL617731R5322	14.3
1050	210	24...60	20...60	2	2	GF1050-20-22-51	1SFL637731R5122	14.3
		100...250	100...250	2	2	GF1050-20-22-53	1SFL637731R5322	14.3



CAL20-11

Accessories

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce) kg
Side-mounted instantaneous auxiliary contact blocks						
GF875, GF1050	1	1	CAL20-11	1SFN010920R1011	1	0.040
	1	1	CAL20-11B	1SFN010920R3011	1	0.040

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1-pole contactors

GAE75



GAE75-10-11

100 A DC-1 - DC operated

IEC Rated operational current θ ≤ 55 °C 440 V DC-1	UL/CSA General use rating 440 V DC	Rated control circuit voltage Uc[1]	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
A	A	V DC					kg
100	100	12	0	0	GAE75-10-00-80	1SBL419025R8000	1.260
			1	1	GAE75-10-11-80	1SBL419025R8011	1.300
		24	0	0	GAE75-10-00-81	1SBL419025R8100	1.260
			1	1	GAE75-10-11-81	1SBL419025R8111	1.300
		48	0	0	GAE75-10-00-83	1SBL419025R8300	1.260
			1	1	GAE75-10-11-83	1SBL419025R8311	1.300
		110	0	0	GAE75-10-00-86	1SBL419025R8600	1.260
			1	1	GAE75-10-11-86	1SBL419025R8611	1.300
		125	0	0	GAE75-10-00-87	1SBL419025R8700	1.260
			1	1	GAE75-10-11-87	1SBL419025R8711	1.300
		220	0	0	GAE75-10-00-88	1SBL419025R8800	1.260
			1	1	GAE75-10-11-88	1SBL419025R8811	1.300
		240	0	0	GAE75-10-00-89	1SBL419025R8900	1.260
			1	1	GAE75-10-11-89	1SBL419025R8911	1.300

[1]Other control voltages see voltage codes table.

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1-pole (3-pole in series) contactors

GAF185 ... GAF300, GAF460 . . . GAF750, GAF1250 . . . GAF2050



GAF185-10-11



GAF300-10-11

250 to 400 A DC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC	UL / CSA							
Rated operational current θ ≤ 55 °C 1000 V DC-1	General use rating θ ≤ 40 °C 1000 V DC	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC					kg
250	250	-	20...60	1	1	GAF185-10-11-72[1]	1SFL497025R7211	3.600
		48...130	48...130	1	1	GAF185-10-11-69	1SFL497025R6911	3.600
		100...250	100...250	1	1	GAF185-10-11-70	1SFL497025R7011	3.600
400	400	-	20...60	1	1	GAF300-10-11-72[1]	1SFL557025R7211	6.200
		48...130	48...130	1	1	GAF300-10-11-69	1SFL557025R6911	6.200
		100...250	100...250	1	1	GAF300-10-11-70	1SFL557025R7011	6.200

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.



GAF460-10-11



GAF750-10-11

600 to 875 A DC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC	UL / CSA							
Rated operational current θ ≤ 55 °C 1000 V DC-1	General use rating θ ≤ 40 °C 1000 V DC	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC					kg
600	650	-	24...60	1	1	GAF460-10-11-68[1]	1SFL597025R6811	12.000
		48...130	48...130	1	1	GAF460-10-11-69	1SFL597025R6911	12.000
		100...250	100...250	1	1	GAF460-10-11-70	1SFL597025R7011	12.000
		250...500	250...500	1	1	GAF460-10-11-71	1SFL597025R7111	12.000
875	900	-	24...60	1	1	GAF750-10-11-68[1]	1SFL637025R6811	15.000
		48...130	48...130	1	1	GAF750-10-11-69	1SFL637025R6911	15.000
		100...250	100...250	1	1	GAF750-10-11-70	1SFL637025R7011	15.000
		250...500	250...500	1	1	GAF750-10-11-71	1SFL637025R7111	15.000

[1]The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.



GAF1250-10-11



GAF1650-10-11

1040 to 1750 A DC-1 - AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

IEC	UL / CSA							
Rated operational current θ ≤ 55 °C 1000 V DC-1	General use rating θ ≤ 40 °C 1000 V	Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
A	A	V 50/60 Hz	V DC					kg
1040	1210	-	24...60	1	1	GAF1250-10-11-68	1SFL647025R6811	16.000
		48...130	48...130	1	1	GAF1250-10-11-69	1SFL647025R6911	16.000
		100...250	100...250	1	1	GAF1250-10-11-70	1SFL647025R7011	16.000
		250...500	250...500	1	1	GAF1250-10-11-71	1SFL647025R7111	16.000
1450	1650	100...250	100...250	1	1	GAF1650-10-11-70	1SFL677025R7011	35.000
1750	2050	100...250	100...250	1	1	GAF2050-10-11-71	1SFL707025R7011	35.000

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3-pole contactors for capacitor switching

UA16..RA … UA30..RA



UA16-30-10RA



UA30-30-10RA

12.5 to 30 kvar - Unlimited peak current Î AC operated

IEC	UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power								
θ ≤ 40 °C 400 V AC-6b	θ ≤ 40 °C 480 V							
kvar	kvar	V 50 Hz	V 60 Hz					kg
12.5	16	24	24	1	0	UA16-30-10RA-81	1SBL181024R8110	0.460
		110	110…120	1	0	UA16-30-10RA-84	1SBL181024R8410	0.460
		220…230	230…240	1	0	UA16-30-10RA-80	1SBL181024R8010	0.460
		230…240	240…260	1	0	UA16-30-10RA-88	1SBL181024R8810	0.460
		380…400	400…415	1	0	UA16-30-10RA-85	1SBL181024R8510	0.460
		400…415	415…440	1	0	UA16-30-10RA-86	1SBL181024R8610	0.460
22	22	24	24	1	0	UA26-30-10RA-81	1SBL241024R8110	0.710
		110	110…120	1	0	UA26-30-10RA-84	1SBL241024R8410	0.710
		220…230	230…240	1	0	UA26-30-10RA-80	1SBL241024R8010	0.710
		230…240	240…260	1	0	UA26-30-10RA-88	1SBL241024R8810	0.710
		380…400	400…415	1	0	UA26-30-10RA-85	1SBL241024R8510	0.710
		400…415	415…440	1	0	UA26-30-10RA-86	1SBL241024R8610	0.710
30	28	24	24	1	0	UA30-30-10RA-81	1SBL281024R8110	0.810
		110	110…120	1	0	UA30-30-10RA-84	1SBL281024R8410	0.810
		220…230	230…240	1	0	UA30-30-10RA-80	1SBL281024R8010	0.810
		230…240	240…260	1	0	UA30-30-10RA-88	1SBL281024R8810	0.810
		380…400	400…415	1	0	UA30-30-10RA-85	1SBL281024R8510	0.810
		400…415	415…440	1	0	UA30-30-10RA-86	1SBL281024R8610	0.810

[1]Other control voltages see voltage code table.

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3-pole contactors for capacitor switching

UA50..RA … UA75..RA, UA95..RA . . . UA110..RA



UA75-30-00 RA

40 to 60 kvar - Unlimited peak current Î AC operated

IEC	UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power								
θ ≤ 40 °C 400 V AC-6b	θ ≤ 40 °C 480 V							
kvar	kvar	V 50 Hz	V 60 Hz					kg
40	50	24	24	0	0	UA50-30-00RA-81	1SBL351024R8100	1.350
		110	110…120	0	0	UA50-30-00RA-84	1SBL351024R8400	1.350
		220…230	230…240	0	0	UA50-30-00RA-80	1SBL351024R8000	1.350
		230…240	240…260	0	0	UA50-30-00RA-88	1SBL351024R8800	1.350
		380…400	400…415	0	0	UA50-30-00RA-85	1SBL351024R8500	1.350
		400…415	415…440	0	0	UA50-30-00RA-86	1SBL351024R8600	1.350
50	55	24	24	0	0	UA63-30-00RA-81	1SBL371024R8100	1.350
		110	110…120	0	0	UA63-30-00RA-84	1SBL371024R8400	1.350
		220…230	230…240	0	0	UA63-30-00RA-80	1SBL371024R8000	1.350
		230…240	240…260	0	0	UA63-30-00RA-88	1SBL371024R8800	1.350
		380…400	400…415	0	0	UA63-30-00RA-85	1SBL371024R8500	1.350
		400…415	415…440	0	0	UA63-30-00RA-86	1SBL371024R8600	1.350
60	64	24	24	0	0	UA75-30-00RA-81	1SBL411024R8100	1.350
		110	110…120	0	0	UA75-30-00RA-84	1SBL411024R8400	1.350
		220…230	230…240	0	0	UA75-30-00RA-80	1SBL411024R8000	1.350
		230…240	240…260	0	0	UA75-30-00RA-88	1SBL411024R8800	1.350
		380…400	400…415	0	0	UA75-30-00RA-85	1SBL411024R8500	1.350
		400…415	415…440	0	0	UA75-30-00RA-86	1SBL411024R8600	1.350

[1]Other control voltages see voltage code table.



UA110-30-00 RA

70 to 80 kvar - Unlimited peak current Î AC operated

IEC	UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power								
θ ≤ 40 °C 400 V AC-6b	θ ≤ 40 °C 480 V							
kvar	kvar	V 50 Hz	V 60 Hz					kg
70	80	24	24	0	0	UA95-30-00RA-81	1SFL431024R8100	2.000
		110	110…120	0	0	UA95-30-00RA-84	1SFL431024R8400	2.000
		220…230	230…240	0	0	UA95-30-00RA-80	1SFL431024R8000	2.000
		230…240	240…260	0	0	UA95-30-00RA-88	1SFL431024R8800	2.000
		380…400	400…415	0	0	UA95-30-00RA-85	1SFL431024R8500	2.000
		400…415	415…440	0	0	UA95-30-00RA-86	1SFL431024R8600	2.000
80	95	24	24	0	0	UA110-30-00RA-81	1SFL451024R8100	2.000
		110	110…120	0	0	UA110-30-00RA-84	1SFL451024R8400	2.000
		220…230	230…240	0	0	UA110-30-00RA-80	1SFL451024R8000	2.000
		230…240	240…260	0	0	UA110-30-00RA-88	1SFL451024R8800	2.000
		380…400	400…415	0	0	UA110-30-00RA-85	1SFL451024R8500	2.000
		400…415	415…440	0	0	UA110-30-00RA-86	1SFL451024R8600	2.000

[1]Other control voltages see voltage code table.

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3-pole contactors for capacitor switching

UA16 … UA30



UA16-30-10



UA30-30-10

12.5 to 27.5 kvar - Peak current Î ≤ 100 times the rms current AC operated

IEC		UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power θ ≤ 40 °C 400 V AC-6b	Max peak current Î	Rated operational power θ ≤ 40 °C 480 V							
kvar	kA	kvar	V 50 Hz	V 60 Hz					kg
12.5	1.8	-	24	24	1	0	UA16-30-10-81	1SBL181022R8110	0.340
			48	48	1	0	UA16-30-10-83	1SBL181022R8310	0.340
			110	110…120	1	0	UA16-30-10-84	1SBL181022R8410	0.340
			220…230	230…240	1	0	UA16-30-10-80	1SBL181022R8010	0.340
			230…240	240…260	1	0	UA16-30-10-88	1SBL181022R8810	0.340
			380…400	400…415	1	0	UA16-30-10-85	1SBL181022R8510	0.340
			400…415	415…440	1	0	UA16-30-10-86	1SBL181022R8610	0.340
20	3	25	24	24	1	0	UA26-30-10-81	1SBL241022R8110	0.600
			48	48	1	0	UA26-30-10-83	1SBL241022R8310	0.600
			110	110…120	1	0	UA26-30-10-84	1SBL241022R8410	0.600
			220…230	230…240	1	0	UA26-30-10-80	1SBL241022R8010	0.600
			230…240	240…260	1	0	UA26-30-10-88	1SBL241022R8810	0.600
			380…400	400…415	1	0	UA26-30-10-85	1SBL241022R8510	0.600
			400…415	415…440	1	0	UA26-30-10-86	1SBL241022R8610	0.600
27.5	3.5	32	24	24	1	0	UA30-30-10-81	1SBL281022R8110	0.710
			48	48	1	0	UA30-30-10-83	1SBL281022R8310	0.710
			110	110…120	1	0	UA30-30-10-84	1SBL281022R8410	0.710
			220…230	230…240	1	0	UA30-30-10-80	1SBL281022R8010	0.710
			230…240	240…260	1	0	UA30-30-10-88	1SBL281022R8810	0.710
			380…400	400…415	1	0	UA30-30-10-85	1SBL281022R8510	0.710
			400…415	415…440	1	0	UA30-30-10-86	1SBL281022R8610	0.710

[1]Other control voltages see voltage code table.

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3-pole contactors for capacitor switching

UA50 … UA75, UA95 . . . UA110



UA50-30-00

33 to 50 kvar - Peak current Î ≤ 100 times the rms current AC operated

IEC		UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power θ ≤ 40 °C 400 V AC-6b	Max peak current Î	Rated operational power θ ≤ 40 °C 480 V							
kvar	kA	kvar	V 50 Hz	V 60 Hz					kg
33	5	40	24	24	0	0	UA50-30-00-81	1SBL351022R8100	1.160
			48	48	0	0	UA50-30-00-83	1SBL351022R8300	1.160
			110	110…120	0	0	UA50-30-00-84	1SBL351022R8400	1.160
			220…230	230…240	0	0	UA50-30-00-80	1SBL351022R8000	1.160
			230…240	240…260	0	0	UA50-30-00-88	1SBL351022R8800	1.160
			380…400	400…415	0	0	UA50-30-00-85	1SBL351022R8500	1.160
			400…415	415…440	0	0	UA50-30-00-86	1SBL351022R8600	1.160
45	6.5	-	24	24	0	0	UA63-30-00-81	1SBL371022R8100	1.160
			48	48	0	0	UA63-30-00-83	1SBL371022R8300	1.160
			110	110…120	0	0	UA63-30-00-84	1SBL371022R8400	1.160
			220…230	230…240	0	0	UA63-30-00-80	1SBL371022R8000	1.160
			230…240	240…260	0	0	UA63-30-00-88	1SBL371022R8800	1.160
			380…400	400…415	0	0	UA63-30-00-85	1SBL371022R8500	1.160
			400…415	415…440	0	0	UA63-30-00-86	1SBL371022R8600	1.160
50	7.5	55	24	24	0	0	UA75-30-00-81	1SBL411022R8100	1.160
			48	48	0	0	UA75-30-00-83	1SBL411022R8300	1.160
			110	110…120	0	0	UA75-30-00-84	1SBL411022R8400	1.160
			220…230	230…240	0	0	UA75-30-00-80	1SBL411022R8000	1.160
			230…240	240…260	0	0	UA75-30-00-88	1SBL411022R8800	1.160
			380…400	400…415	0	0	UA75-30-00-85	1SBL411022R8500	1.160
			400…415	415…440	0	0	UA75-30-00-86	1SBL411022R8600	1.160

[1]Other control voltages see voltage code table.



UA110-30-00

65 to 75 kvar - Peak current Î ≤ 100 times the rms current AC operated

IEC		UL/CSA	Rated control circuit voltage Uc[1]		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational power θ ≤ 40 °C 400 V AC-6b	Max peak current Î	Rated operational power θ ≤ 40 °C 480 V							
kvar	kA	kvar	V 50 Hz	V 60 Hz					kg
65	9.3	70	24	24	0	0	UA95-30-00-81	1SFL431022R8100	2.000
			48	48	0	0	UA95-30-00-83	1SFL431022R8300	2.000
			110	110…120	0	0	UA95-30-00-84	1SFL431022R8400	2.000
			220…230	230…240	0	0	UA95-30-00-80	1SFL431022R8000	2.000
			230…240	240…260	0	0	UA95-30-00-88	1SFL431022R8800	2.000
			380…400	400…415	0	0	UA95-30-00-85	1SFL431022R8500	2.000
			400…415	415…440	0	0	UA95-30-00-86	1SFL431022R8600	2.000
75	10.5	80	24	24	0	0	UA110-30-00-81	1SFL451022R8100	2.000
			48	48	0	0	UA110-30-00-83	1SFL451022R8300	2.000
			110	110…120	0	0	UA110-30-00-84	1SFL451022R8400	2.000
			220…230	230…240	0	0	UA110-30-00-80	1SFL451022R8000	2.000
			230…240	240…260	0	0	UA110-30-00-88	1SFL451022R8800	2.000
			380…400	400…415	0	0	UA110-30-00-85	1SFL451022R8500	2.000
			400…415	415…440	0	0	UA110-30-00-86	1SFL451022R8600	2.000

[1]Other control voltages see voltage code table.

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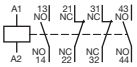
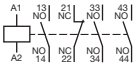
4-pole contactor relays

NF



NF22E

AC / DC operated

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50/60 Hz	V DC			kg
	24...60	20...60 [1]	NF22E-11	1SBH137001R1122	0.270
	48...130	48...130	NF22E-12	1SBH137001R1222	0.270
	100...250	100...250	NF22E-13	1SBH137001R1322	0.270
	250...500	250...500	NF22E-14	1SBH137001R1422	0.310
	24...60	20...60 [1]	NF31E-11	1SBH137001R1131	0.270
	48...130	48...130	NF31E-12	1SBH137001R1231	0.270
	100...250	100...250	NF31E-13	1SBH137001R1331	0.270
	250...500	250...500	NF31E-14	1SBH137001R1431	0.310
	24...60	20...60 [1]	NF40E-11	1SBH137001R1140	0.270
	48...130	48...130	NF40E-12	1SBH137001R1240	0.270
	100...250	100...250	NF40E-13	1SBH137001R1340	0.270
	250...500	250...500	NF40E-14	1SBH137001R1440	0.310

[1]NF..-11 not suitable for direct control by PLC-output.

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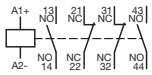
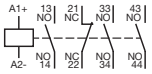
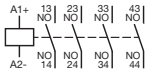
4-pole contactor relays

NFZ



NFZ22E-30

24 V DC operated designed for PLC

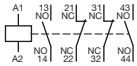
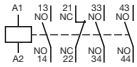
Number of contacts	Rated control circuit voltage Uc	Type	Order code	Weight Pkg (1 pce)
	V DC			kg
4-pole contactor relays				
	24	NFZ22E-30	1SBH136001R3022	0.430
	24	NFZ31E-30	1SBH136001R3031	0.430
	24	NFZ40E-30	1SBH136001R3040	0.430

Note: NFZ contactor relays with DC control voltage 24 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.



NFZ22E

AC / DC operated for specific applications

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50/60 Hz	V DC			kg
	–	12...20	NFZ22E-20	1SBH136001R2022	0.310
	24...60	20...60	NFZ22E-21	1SBH136001R2122	0.310
	48...130	48...130	NFZ22E-22	1SBH136001R2222	0.310
	100...250	100...250	NFZ22E-23	1SBH136001R2322	0.310
	–	12...20	NFZ31E-20	1SBH136001R2031	0.310
	24...60	20...60	NFZ31E-21	1SBH136001R2131	0.310
	48...130	48...130	NFZ31E-22	1SBH136001R2231	0.310
	100...250	100...250	NFZ31E-23	1SBH136001R2331	0.310
	–	12...20	NFZ40E-20	1SBH136001R2040	0.310
	24...60	20...60	NFZ40E-21	1SBH136001R2140	0.310
	48...130	48...130	NFZ40E-22	1SBH136001R2240	0.310
	100...250	100...250	NFZ40E-23	1SBH136001R2340	0.310

Note: Only NFZ contactor relays with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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8-pole contactor relays

NF



NF44E

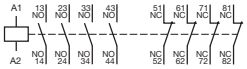
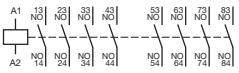
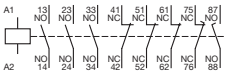


NF33/11



NF51/11

AC / DC operated

Number of contacts		Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
1st stack	2nd stack	V 50/60 Hz	V DC			kg
8-pole contactor relays						
		24...60	20...60[1]	NF44E-11	1SBH137001R1144	0.320
		48...130	48...130	NF44E-12	1SBH137001R1244	0.320
		100...250	100...250	NF44E-13	1SBH137001R1344	0.320
		250...500	250...500	NF44E-14	1SBH137001R1444	0.360
		24...60	20...60[1]	NF53E-11	1SBH137001R1153	0.320
		48...130	48...130	NF53E-12	1SBH137001R1253	0.320
		100...250	100...250	NF53E-13	1SBH137001R1353	0.320
		250...500	250...500	NF53E-14	1SBH137001R1453	0.360
		24...60	20...60[1]	NF62E-11	1SBH137001R1162	0.320
		48...130	48...130	NF62E-12	1SBH137001R1262	0.320
		100...250	100...250	NF62E-13	1SBH137001R1362	0.320
		250...500	250...500	NF62E-14	1SBH137001R1462	0.360
		24...60	20...60[1]	NF71E-11	1SBH137001R1171	0.320
		48...130	48...130	NF71E-12	1SBH137001R1271	0.320
		100...250	100...250	NF71E-13	1SBH137001R1371	0.320
		250...500	250...500	NF71E-14	1SBH137001R1471	0.360
		24...60	20...60[1]	NF80E-11	1SBH137001R1180	0.320
		48...130	48...130	NF80E-12	1SBH137001R1280	0.320
		100...250	100...250	NF80E-13	1SBH137001R1380	0.320
		250...500	250...500	NF80E-14	1SBH137001R1480	0.360
8-pole contactor relays with overlapping of lagging / leading contacts						
		24...60	20...60[1]	NF33/11-11	1SBH137001R1139	0.320
		48...130	48...130	NF33/11-12	1SBH137001R1239	0.320
		100...250	100...250	NF33/11-13	1SBH137001R1339	0.320
		250...500	250...500	NF33/11-14	1SBH137001R1439	0.320
		24...60	20...60[1]	NF51/11-11	1SBH137001R1159	0.320
		48...130	48...130	NF51/11-12	1SBH137001R1259	0.320
		100...250	100...250	NF51/11-13	1SBH137001R1359	0.320
		250...500	250...500	NF51/11-14	1SBH137001R1459	0.320

[1]NF..-11 not suitable for direct control by PLC.

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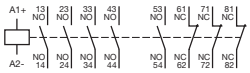
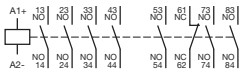
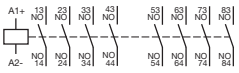
8-pole contactor relays

NFZ



NFZ44E

24 V DC operated designed for PLC

Number of contacts	Rated control circuit voltage Uc	Type	Order code	Weight Pkg (1 pce)
	V DC			kg
8-pole contactor relays				
	24	NFZ44E-30	1SBH136001R3044	0.490
	24	NFZ53E-30	1SBH136001R3053	0.490
	24	NFZ62E-30	1SBH136001R3062	0.490
	24	NFZ71E-30	1SBH136001R3071	0.490
	24	NFZ80E-30	1SBH136001R3080	0.490

Note: NFZ contactor relays with DC control voltage 24 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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8-pole contactor relays

NFZ



NFZ44E

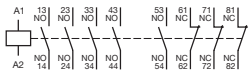
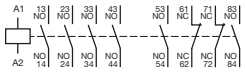
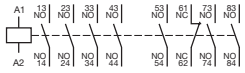
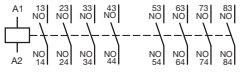
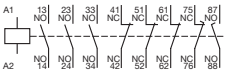
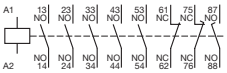


NFZ33/11



NFZ51/11

AC / DC operated for specific applications

Number of contacts		Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
1st stack	2nd stack	V 50/60 Hz	V DC			kg
8-pole contactor relays						
		-	12...20	NFZ44E-20	1SBH136001R2044	0.360
		24...60	20...60	NFZ44E-21	1SBH136001R2144	0.360
		48...130	48...130	NFZ44E-22	1SBH136001R2244	0.360
		100...250	100...250	NFZ44E-23	1SBH136001R2344	0.360
		-	12...20	NFZ53E-20	1SBH136001R2053	0.360
		24...60	20...60	NFZ53E-21	1SBH136001R2153	0.360
		48...130	48...130	NFZ53E-22	1SBH136001R2253	0.360
		100...250	100...250	NFZ53E-23	1SBH136001R2353	0.360
		-	12...20	NFZ62E-20	1SBH136001R2062	0.360
		24...60	20...60	NFZ62E-21	1SBH136001R2162	0.360
		48...130	48...130	NFZ62E-22	1SBH136001R2262	0.360
		100...250	100...250	NFZ62E-23	1SBH136001R2362	0.360
		-	12...20	NFZ71E-20	1SBH136001R2071	0.360
		24...60	20...60	NFZ71E-21	1SBH136001R2171	0.360
		48...130	48...130	NFZ71E-22	1SBH136001R2271	0.360
		100...250	100...250	NFZ71E-23	1SBH136001R2371	0.360
		-	12...20	NFZ80E-20	1SBH136001R2080	0.360
		24...60	20...60	NFZ80E-21	1SBH136001R2180	0.360
		48...130	48...130	NFZ80E-22	1SBH136001R2280	0.360
		100...250	100...250	NFZ80E-23	1SBH136001R2380	0.360
8-pole contactor relays with overlapping of lagging / leading contacts						
		-	12...20	NFZ33/11-20	1SBH136001R2039	0.360
		24...60	20...60	NFZ33/11-21	1SBH136001R2139	0.360
		48...130	48...130	NFZ33/11-22	1SBH136001R2239	0.360
		100...250	100...250	NFZ33/11-23	1SBH136001R2339	0.360
		-	12...20	NFZ51/11-20	1SBH136001R2059	0.360
		24...60	20...60	NFZ51/11-21	1SBH136001R2159	0.360
		48...130	48...130	NFZ51/11-22	1SBH136001R2259	0.360
		100...250	100...250	NFZ51/11-23	1SBH136001R2359	0.360

Note: Only NFZ contactor relays with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole

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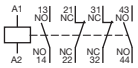
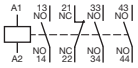
4-pole contactor relays

NFC



NFC22E

AC operated

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50 Hz	V 60Hz			kg
	24	24	NFC22E-81	1SBH131001R8122	0.309
	110	110 ... 120	NFC22E-84	1SBH131001R8422	0.306
	220 ... 230	230 ... 240	NFC22E-80	1SBH131001R8022	0.300
	230 ... 240	240 ... 260	NFC22E-88	1SBH131001R8822	0.301
	24	24	NFC31E-81	1SBH131001R8131	0.309
	110	110 ... 120	NFC31E-84	1SBH131001R8431	0.306
	220 ... 230	230 ... 240	NFC31E-80	1SBH131001R8031	0.300
	230 ... 240	240 ... 260	NFC31E-88	1SBH131001R8831	0.301
	24	24	NFC40E-81	1SBH131001R8140	0.309
	110	110 ... 120	NFC40E-84	1SBH131001R8440	0.306
	220 ... 230	230 ... 240	NFC40E-80	1SBH131001R8040	0.300
	230 ... 240	240 ... 260	NFC40E-88	1SBH131001R8840	0.301

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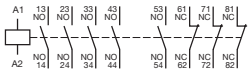
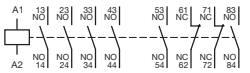
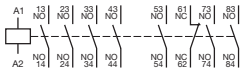
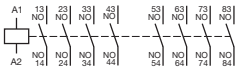
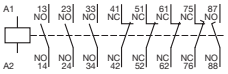
8-pole contactor relays

NFC



NFC44E

AC operated

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50 Hz	V 60Hz			kg
8-pole contactor relays					
	24	24	NFC44E-81	1SBH131001R8144	0.360
	110	110 ... 120	NFC44E-84	1SBH131001R8444	0.357
	220 ... 230	230 ... 240	NFC44E-80	1SBH131001R8044	0.351
	230 ... 240	240 ... 260	NFC44E-88	1SBH131001R8844	0.352
	24	24	NFC53E-81	1SBH131001R8153	0.360
	110	110 ... 120	NFC53E-84	1SBH131001R8453	0.357
	220 ... 230	230 ... 240	NFC53E-80	1SBH131001R8053	0.351
	230 ... 240	240 ... 260	NFC53E-88	1SBH131001R8853	0.352
	24	24	NFC62E-81	1SBH131001R8162	0.360
	110	110 ... 120	NFC62E-84	1SBH131001R8462	0.357
	220 ... 230	230 ... 240	NFC62E-80	1SBH131001R8062	0.351
	230 ... 240	240 ... 260	NFC62E-88	1SBH131001R8862	0.352
	24	24	NFC71E-81	1SBH131001R8171	0.360
	110	110 ... 120	NFC71E-84	1SBH131001R8471	0.357
	220 ... 230	230 ... 240	NFC71E-80	1SBH131001R8071	0.351
	230 ... 240	240 ... 260	NFC71E-88	1SBH131001R8871	0.352
	24	24	NFC80E-81	1SBH131001R8180	0.360
	110	110 ... 120	NFC80E-84	1SBH131001R8480	0.357
	220 ... 230	230 ... 240	NFC80E-80	1SBH131001R8080	0.351
	230 ... 240	240 ... 260	NFC80E-88	1SBH131001R8880	0.352
8-pole contactor relays with overlapping of lagging / leading contacts					
	24	24	NFC33/11-81	1SBH131001R8139	0.360
	110	110 ... 120	NFC33/11-84	1SBH131001R8439	0.357
	220 ... 230	230 ... 240	NFC33/11-80	1SBH131001R8039	0.351
	230 ... 240	240 ... 260	NFC33/11-88	1SBH131001R8839	0.352
	24	24	NFC51/11-81	1SBH131001R8159	0.360
	110	110 ... 120	NFC51/11-84	1SBH131001R8459	0.357
	220 ... 230	230 ... 240	NFC51/11-80	1SBH131001R8059	0.351
	230 ... 240	240 ... 260	NFC51/11-88	1SBH131001R8859	0.352

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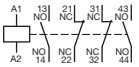
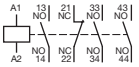
4-pole contactor relays with Push-in Spring terminals

NFC..K



NFC22EK

AC operated

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50 Hz	V 60HzC			kg
	24	24	NFC22EK-81	1SBH131005R8122	0.317
	110	110 ... 120	NFC22EK-84	1SBH131005R8422	0.314
	220 ... 230	230 ... 240	NFC22EK-80	1SBH131005R8022	0.306
	230 ... 240	240 ... 260	NFC22EK-88	1SBH131005R8822	0.311
	24	24	NFC31EK-81	1SBH131005R8131	0.317
	110	110 ... 120	NFC31EK-84	1SBH131005R8431	0.314
	220 ... 230	230 ... 240	NFC31EK-80	1SBH131005R8031	0.306
	230 ... 240	240 ... 260	NFC31EK-88	1SBH131005R8831	0.311
	24	24	NFC40EK-81	1SBH131005R8140	0.317
	110	110 ... 120	NFC40EK-84	1SBH131005R8440	0.314
	220 ... 230	230 ... 240	NFC40EK-80	1SBH131005R8040	0.306
	230 ... 240	240 ... 260	NFC40EK-88	1SBH131005R8840	0.311

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8-pole contactor relays with Push-in Spring terminals

NFC..K



NFC44EK

AC operated

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50 Hz	V 60 Hz			kg
8-pole contactor relays					
	24	24	NFC44EK-81	1SBH131005R8144	0.368
	110	110 ... 120	NFC44EK-84	1SBH131005R8444	0.365
	220 ... 230	230 ... 240	NFC44EK-80	1SBH131005R8044	0.359
	230 ... 240	240 ... 260	NFC44EK-88	1SBH131005R8844	0.360
	24	24	NFC53EK-81	1SBH131005R8153	0.368
	110	110 ... 120	NFC53EK-84	1SBH131005R8453	0.365
	220 ... 230	230 ... 240	NFC53EK-80	1SBH131005R8053	0.359
	230 ... 240	240 ... 260	NFC53EK-88	1SBH131005R8853	0.360
	24	24	NFC62EK-81	1SBH131005R8162	0.368
	110	110 ... 120	NFC62EK-84	1SBH131005R8462	0.365
	220 ... 230	230 ... 240	NFC62EK-80	1SBH131005R8062	0.359
	230 ... 240	240 ... 260	NFC62EK-88	1SBH131005R8862	0.360
	24	24	NFC71EK-81	1SBH131005R8171	0.368
	110	110 ... 120	NFC71EK-84	1SBH131005R8471	0.365
	220 ... 230	230 ... 240	NFC71EK-80	1SBH131005R8071	0.359
	230 ... 240	240 ... 260	NFC71EK-88	1SBH131005R8871	0.360
	24	24	NFC80EK-81	1SBH131005R8180	0.368
	110	110 ... 120	NFC80EK-84	1SBH131005R8480	0.365
	220 ... 230	230 ... 240	NFC80EK-80	1SBH131005R8080	0.359
	230 ... 240	240 ... 260	NFC80EK-88	1SBH131005R8880	0.360

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Contactor relays

NF..K

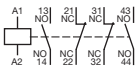
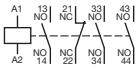
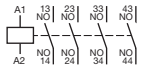
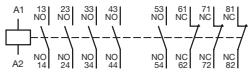
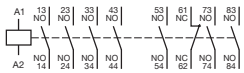


NF22EK



NF44EK

AC / DC operated - with push-in Spring terminals

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50/60 Hz	V DC			kg
4-pole contactor relays					
	24 ... 60	20 ... 60[1]	NF22EK-11	1SBH137005R1122	0.285
	48 ... 130	48 ... 130	NF22EK-12	1SBH137005R1222	0.285
	100 ... 250	100 ... 250	NF22EK-13	1SBH137005R1322	0.285
	250 ... 500	250 ... 500	NF22EK-14	1SBH137005R1422	0.325
	24 ... 60	20 ... 60[1]	NF31EK-11	1SBH137005R1131	0.285
	48 ... 130	48 ... 130	NF31EK-12	1SBH137005R1231	0.285
	100 ... 250	100 ... 250	NF31EK-13	1SBH137005R1331	0.285
	250 ... 500	250 ... 500	NF31EK-14	1SBH137005R1431	0.325
	24 ... 60	20 ... 60[1]	NF40EK-11	1SBH137005R1140	0.285
	48 ... 130	48 ... 130	NF40EK-12	1SBH137005R1240	0.285
	100 ... 250	100 ... 250	NF40EK-13	1SBH137005R1340	0.285
	250 ... 500	250 ... 500	NF40EK-14	1SBH137005R1440	0.325
8-pole contactor relays					
	24 ... 60	20 ... 60[1]	NF44EK-11	1SBH137005R1144	0.330
	48 ... 130	48 ... 130	NF44EK-12	1SBH137005R1244	0.330
	100 ... 250	100 ... 250	NF44EK-13	1SBH137005R1344	0.330
	250 ... 500	250 ... 500	NF44EK-14	1SBH137005R1444	0.370
	24 ... 60	20 ... 60[1]	NF53EK-11	1SBH137005R1153	0.330
	48 ... 130	48 ... 130	NF53EK-12	1SBH137005R1253	0.330
	100 ... 250	100 ... 250	NF53EK-13	1SBH137005R1353	0.330
	250 ... 500	250 ... 500	NF53EK-14	1SBH137005R1453	0.370
	24 ... 60	20 ... 60[1]	NF62EK-11	1SBH137005R1162	0.330
	48 ... 130	48 ... 130	NF62EK-12	1SBH137005R1262	0.330
	100 ... 250	100 ... 250	NF62EK-13	1SBH137005R1362	0.330
	250 ... 500	250 ... 500	NF62EK-14	1SBH137005R1462	0.370
	24 ... 60	20 ... 60[1]	NF71EK-11	1SBH137005R1171	0.330
	48 ... 130	48 ... 130	NF71EK-12	1SBH137005R1271	0.330
	100 ... 250	100 ... 250	NF71EK-13	1SBH137005R1371	0.330
	250 ... 500	250 ... 500	NF71EK-14	1SBH137005R1471	0.370
	24 ... 60	20 ... 60[1]	NF80EK-11	1SBH137005R1180	0.330
	48 ... 130	48 ... 130	NF80EK-12	1SBH137005R1280	0.330
	100 ... 250	100 ... 250	NF80EK-13	1SBH137005R1380	0.330
	250 ... 500	250 ... 500	NF80EK-14	1SBH137005R1480	0.370

[1]NF..K-11 not suitable for direct control by PLC-output.

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Contactor relays

NFZ..K

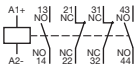
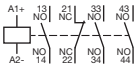
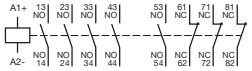
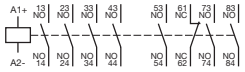


NFZ22EK-30



NFZ44EK-30

24 V DC operated designed for PLC - with push-in Spring terminals

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.	Type	Order code	Weight Pkg (1 pce)
	V DC			kg
4-pole contactor relays				
	24	NFZ22EK-30	1SBH136005R3022	0.435
	24	NFZ31EK-30	1SBH136005R3031	0.435
	24	NFZ40EK-30	1SBH136005R3040	0.435
8-pole contactor relays				
	24	NFZ44EK-30	1SBH136005R3044	0.490
	24	NFZ53EK-30	1SBH136005R3053	0.490
	24	NFZ62EK-30	1SBH136005R3062	0.490
	24	NFZ71EK-30	1SBH136005R3071	0.490
	24	NFZ80EK-30	1SBH136005R3080	0.490

Note: NFZ contactor relays with 24 V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.
For product availability, please consult your ABB local sales organization.

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Contactor relays - with Push-in Spring terminals

NFZ..K

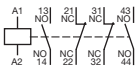
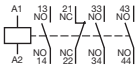
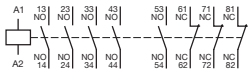
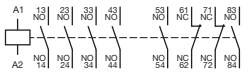
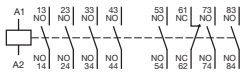


NFZ22EK



NFZ44EK

AC / DC operated for specific applications

Number of contacts	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Weight Pkg (1 pce)
	V 50/60 Hz	V DC			kg
4-pole contactor relays					
	–	12 ... 20	NFZ22EK-20	1SBH136005R2022	0.315
	24 ... 60	20 ... 60	NFZ22EK-21	1SBH136005R2122	0.315
	48 ... 130	48 ... 130	NFZ22EK-22	1SBH136005R2222	0.315
	100 ... 250	100 ... 250	NFZ22EK-23	1SBH136005R2322	0.315
	–	12 ... 20	NFZ31EK-20	1SBH136005R2031	0.315
	24 ... 60	20 ... 60	NFZ31EK-21	1SBH136005R2131	0.315
	48 ... 130	48 ... 130	NFZ31EK-22	1SBH136005R2231	0.315
	100 ... 250	100 ... 250	NFZ31EK-23	1SBH136005R2331	0.315
	–	12 ... 20	NFZ40EK-20	1SBH136005R2040	0.315
	24 ... 60	20 ... 60	NFZ40EK-21	1SBH136005R2140	0.315
	48 ... 130	48 ... 130	NFZ40EK-22	1SBH136005R2240	0.315
	100 ... 250	100 ... 250	NFZ40EK-23	1SBH136005R2340	0.315
8-pole contactor relays					
	–	12 ... 20	NFZ44EK-20	1SBH136005R2044	0.360
	24 ... 60	20 ... 60	NFZ44EK-21	1SBH136005R2144	0.360
	48 ... 130	48 ... 130	NFZ44EK-22	1SBH136005R2244	0.360
	100 ... 250	100 ... 250	NFZ44EK-23	1SBH136005R2344	0.360
	–	12 ... 20	NFZ53EK-20	1SBH136005R2053	0.360
	24 ... 60	20 ... 60	NFZ53EK-21	1SBH136005R2153	0.360
	48 ... 130	48 ... 130	NFZ53EK-22	1SBH136005R2253	0.360
	100 ... 250	100 ... 250	NFZ53EK-23	1SBH136005R2353	0.360
	–	12 ... 20	NFZ62EK-20	1SBH136005R2062	0.360
	24 ... 60	20 ... 60	NFZ62EK-21	1SBH136005R2162	0.360
	48 ... 130	48 ... 130	NFZ62EK-22	1SBH136005R2262	0.360
	100 ... 250	100 ... 250	NFZ62EK-23	1SBH136005R2362	0.360
	–	12 ... 20	NFZ71EK-20	1SBH136005R2071	0.360
	24 ... 60	20 ... 60	NFZ71EK-21	1SBH136005R2171	0.360
	48 ... 130	48 ... 130	NFZ71EK-22	1SBH136005R2271	0.360
	100 ... 250	100 ... 250	NFZ71EK-23	1SBH136005R2371	0.360
	–	12 ... 20	NFZ80EK-20	1SBH136005R2080	0.360
	24 ... 60	20 ... 60	NFZ80EK-21	1SBH136005R2180	0.360
	48 ... 130	48 ... 130	NFZ80EK-22	1SBH136005R2280	0.360
	100 ... 250	100 ... 250	NFZ80EK-23	1SBH136005R2380	0.360

Note: NFZ contactor relays with 12...20 V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

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2- & 3-pole, non-reversing contactors for DC drive applications

EHDB



EHDB280C-1L



EHDB520C2P-1L

For DC drive applications up to 960 A - AC or DC operated coils

Electrical ratings				2 & 3 pole non-reversing			
DC continuous current (A)	N.O. power poles DC make/break	N.C. dynamic braking pole DC make	DC break	Standard auxiliary contacts		Catalog number 2-pole	Catalog number 3-pole
500V	600V	600V	300V	N.O.	N.C.	2 N.O.	2 N.O. + 1 N.C.
Type EHDB, 2 & 3 pole							
220	333	450	285	1	1	EHDB220C2P-ΔL	EHDB220C-ΔL
280	425	565	363	1	1	EHDB280C2P-ΔL	EHDB280C-ΔL
360	556	728	472	1	1	EHDB360C2P-ΔL	EHDB360C-ΔL
520	780	1040	680	1	1	EHDB520C2P-ΔL	EHDB520C-ΔL
650	975	1300	850	1	1	EHDB650C2P-ΔL	EHDB650C-ΔL
800	1200	1600	1050	1	1	EHDB800C2P-ΔL	EHDB800C-ΔL
960	1440	1920	1250	1	1	EHDB960C2P-ΔL	EHDB960C-ΔL

Note: The polarity of the N.C. dynamic braking pole must be respected; 5/L2 (+) – 6/T2 (-).

Coil voltage selection chart (Δ)

Rated control circuit voltage U_c	EHDB220... EHDB360	EHDB520... EHDB960
24V DC	Y	Y
110/50, 110...120/60	1	1
125V DC	Q	Q
208V/60	B	–
480V/60	4	–

Example:
24V DC input voltage: EHDB280C-YL

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Replacement parts

EHDB contactors



EHDBCK280-2

Contact kits – 2 Pole, N.O.

Contactor type	Catalog number
DA75	ZL75
EHDB220	EHDBCK220-2
EHDB280	EHDBCK280-2
EHDB360	EHDBCK360-2
EHDB520	EHDBCK520-2
EHDB650	EHDBCK650-2
EHDB800	EHDBCK800-2
EHDB960	EHDBCK960-2



EHDBCK280-NC

N.C. DB Kit only

Contactor size	Contact rating	Auxiliary interlocks	Catalog number
EHDB220	300V	–	EHDBCK220-NC
EHDB280	300V	–	EHDBCK280-NC
EHDB360	300V	–	EHDBCK360-NC
EHDB520	300V	–	EHDBCK520-NC
EHDB650	300V	–	EHDBCK650-NC
EHDB800	300V	–	EHDBCK800-NC
EHDB960	300V	–	EHDBCK960-NC

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Contactors and NF contactor relays

Auxiliary contact blocks for AF09 ... AF96



CA4-10



CAL4-11



CA4-22E



CAT4-11E

For contacts	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce)
								kg
Front-mounted instantaneous auxiliary contact blocks								
AF09 ... AF96 4-pole NF	1	0	–	–	CA4-10	1SBN010110R1010	1	0.014
	1	0	–	–	CA4-10-T	1SBN010110T1010	10	0.014
	0	1	–	–	CA4-01	1SBN010110R1001	1	0.014
	0	1	–	–	CA4-01-T	1SBN010110T1001	10	0.014
AF09 ... AF16..-30-10	2	2	–	–	CA4-22M	1SBN010140R1122	1	0.055
	3	1	–	–	CA4-31M	1SBN010140R1131	1	0.055
	1	3	–	–	CA4-13M	1SBN010140R1113	1	0.055
	0	4	–	–	CA4-04M	1SBN010140R1104	1	0.055
AF26 ... AF96..-30-00 AF09 ... AF80..-40-00 AF09 ... AF80..-22-00	2	2	–	–	CA4-22E	1SBN010140R1022	1	0.055
	3	1	–	–	CA4-31E	1SBN010140R1031	1	0.055
	4	0	–	–	CA4-40E	1SBN010140R1040	1	0.055
AF26 ... AF96..-30-00 AF09 ... AF16..-40-00 AF40 ... AF80..-40-00	0	4	–	–	CA4-04E	1SBN010140R1004	1	0.055
AF09 ... AF16..-30-01	2	2	–	–	CA4-22U	1SBN010140R1322	1	0.055
	3	1	–	–	CA4-31U	1SBN010140R1331	1	0.055
	4	0	–	–	CA4-40U	1SBN010140R1340	1	0.055
4-pole NF	2	2	–	–	CA4-22N	1SBN010140R1222	1	0.055
	3	1	–	–	CA4-31N	1SBN010140R1231	1	0.055
	4	0	–	–	CA4-40N	1SBN010140R1240	1	0.055
	1	3	–	–	CA4-13N	1SBN010140R1213	1	0.055
NF..40E	0	4	–	–	CA4-04N	1SBN010140R1204	1	0.055
Front-mounted auxiliary contact blocks with N.O. leading contact and N.C. lagging contact								
AF09 ... AF96 4-pole NF	–	–	1	0	CC4-10	1SBN010111R1010	1	0.014
	–	–	0	1	CC4-01	1SBN010111R1001	1	0.014

Note: 1 max CC4-10 and 1 max CC4-01.
CC4-01 use: on each "Accessory fitting details" table, the allowed number of N.C. add-on and built-in contacts including CC4-01, is decreased by one.

Side-mounted instantaneous auxiliary contact blocks								
AF09 ... AF96	1	1	–	–	CAL4-11	1SBN010120R1011	1	0.040
NF	1	1	–	–	CAL4-11-T	1SBN010120T1011	10	0.040
Front-mounted instantaneous auxiliary contact and A1/A2 coil terminal blocks								
AF09 ... AF16..-30-10	1	1	–	–	CAT4-11M	1SBN010151R1111	1	0.040
AF26 ... AF65..-30-00 AF09 ... AF52..-40-00 AF09 ... AF40..-22-00	1	1	–	–	CAT4-11E	1SBN010151R1011	1	0.040
AF09 ... AF16..-30-01	1	1	–	–	CAT4-11U	1SBN010151R1311	1	0.040

For each contactor or contactor relay type, refer to "Accessory fitting details" table.
Note: CAT4 not suitable for AF..Z contactors with DC control voltage 12...20 V DC (coil 20) and 24 V DC (coil 30).

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Auxiliary contact blocks


CA4-10K


CA4-22EK


CAL4-11K

With Push-in Spring terminals

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Front-mounted instantaneous auxiliary contact blocks						
AF09 ... AF96 , AF09..K ... AF16..K NF	1	0	CA4-10K	1SBN010160R1010	1	0.012
	1	0	CA4-10K-T	1SBN010160T1010	10	0.012
	0	1	CA4-01K	1SBN010160R1001	1	0.012
	0	1	CA4-01K-T	1SBN010160T1001	10	0.012
AF09 ... AF16..-30-10	2	2	CA4-22MK	1SBN010146R1122	1	0.050
	3	1	CA4-31MK	1SBN010146R1131	1	0.050
	1	3	CA4-13MK	1SBN010146R1113	1	0.050
	0	4	CA4-04MK	1SBN010146R1104	1	0.050
AF26 ... AF16..-40-00K AF26 ... AF96..-30-00 AF09 ... AF80..-40-00 AF09 ... AF80..-22-00	2	2	CA4-22EK	1SBN010146R1022	1	0.050
	2	2	CA4-22EK	1SBN010146R1022	1	0.050
	3	1	CA4-31EK	1SBN010146R1031	1	0.050
	4	0	CA4-40EK	1SBN010146R1040	1	0.050
4-pole NF	1	3	CA4-13NK	1SBN010146R1213	1	0.050
	2	2	CA4-22NK	1SBN010146R1222	1	0.050
	3	1	CA4-31NK	1SBN010146R1231	1	0.050
	4	0	CA4-40NK	1SBN010146R1240	1	0.050
NF40E	0	4	CA4-04NK	1SBN010146R1204	1	0.050
Side-mounted instantaneous auxiliary contact blocks						
3-pole						
AF09 ... AF96, AF09..K ... AF16..K NF	1	1	CAL4-11K	1SBN010134R1011	1	0.030

Note: for each contactor or contactor relay type, refer to "Accessory fitting details" table.


CE5-10W

For severe industrial environments

For contactors	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce)
								kg
AF09 ... AF96 NF	1	0	–	–	CE5-10D0.1	1SBN010015R1010	1	0.020
	0	1	–	–	CE5-01D0.1	1SBN010015R1001	1	0.020
	1	0	–	–	CE5-10D2	1SBN010017R1010	1	0.020
	0	1	–	–	CE5-01D2	1SBN010017R1001	1	0.020
	1	0	–	–	CE5-10W0.1	1SBN010016R1010	1	0.020
	0	1	–	–	CE5-01W0.1	1SBN010016R1001	1	0.020
	1	0	–	–	CE5-10W2	1SBN010018R1010	1	0.020
	0	1	–	–	CE5-01W2	1SBN010018R1001	1	0.020

For each contactor type, refer to "Accessory fitting details" table.
Note: For use with 24 V DC operated AF..Z contactor and NFZ contactor relay (coil 30), please consult your ABB local sales organization.

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Auxiliary contact blocks

For AF116 ... AF2850 contactors



CAL19-11



CAL18-11



CEL19



CEL18

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Side-mounted instantaneous auxiliary contact blocks						
AF116 ... AF370	1	1	CAL19-11	1SFN010820R1011	1	0.040
	1	1	CAL19-11B	1SFN010820R3311	1	0.040
AF400 ... AF2850	1	1	CAL18-11	1SFN010720R1011	2	0.050
	1	1	CAL18-11B	1SFN010720R3311	2	0.050

For each contactor type, refer to "Accessory fitting details" table.

For severe industrial environments

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Side-mounting instantaneous auxiliary contact blocks						
AF116 ... AF370	1	0	CEL19-10	1SFN010832R1010	1	0.040
	0	1	CEL19-01	1SFN010832R1001	1	0.040
AF400 ... AF2850	1	0	CEL18-10	1SFN010716R1010	1	0.050
	0	1	CEL18-01	1SFN010716R1001	1	0.050

For each contactor type, refer to "Accessory fitting details" table.

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Electronic timers



TEF4-ON



TEF4-OFF



TEF4S-ON



TEF4S-OFF

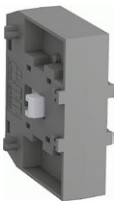
For contactors, contactor relays	Time delay range selected by switch	Delay type	Rated control circuit voltage Uc V 50/60 Hz or DC	Auxiliary contacts	Type	Order code	Weight Pkg (1 pce) kg
With screw terminals							
AF09 ... AF96 NF	0.1...1 s 1...10 s 10...100 s	ON-delay	24...240	1 1	TEF4-ON	1SBN020112R1000	0.065
		OFF-delay	24...240	1 1	TEF4-OFF	1SBN020114R1000	0.065
With spring terminals							
AF09 ... AF96, AF09..K ... AF16..K NF	0.1...1 s 1...10 s 10...100 s	ON-delay	24...240	1 1	TEF4S-ON	1SBN020113R1000	0.065
		OFF-delay	24...240	1 1	TEF4S-OFF	1SBN020115R1000	0.065

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Interlocks



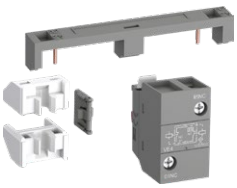
VM4



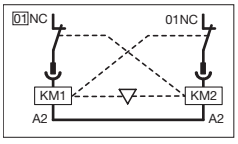
VM19

Mechanical interlock units

For contactors	Mounting	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical interlock units for two contactors mounted side by side					
AF09 ... AF38..-30-.. AF09 ... AF38..-40-00, AF09..K ... AF16..K		VM4	1SBN030105T1000	10	0.005
AF40 ... AF96-30-.. AF40 ... AF80-40-00		VM96-4	1SBN033405T1000	10	0.006
For same size contactors: AF116 ... AF146 AF190, AF205 AF265 ... AF370		VM19	1SFN030300R1000	1	0.054
AF116 ... AF146 and AF190, AF205		VM140/190	1SFN034403R1000	1	0.088
AF190, AF205 and AF265 ... AF370		VM205/265	1SFN035203R1000	1	0.090
AF265 ... AF370 and AF400 ... AF460		VM370/400	1SFN035403R1000	1	0.100
AF400 ... AF1250	PN.. mounting plate to be ordered separately	VM750H	1SFN035700R1000	1	0.200
AF1350 ... AF2650	Plate included	VM1650H	1SFN036503R1001	1	6.000
Mechanical interlock units for two contactors mounted one above the other					
AF400 ... AF1250	Additional plate (not supplied)	VM750V	1SFN035701R1000	1	0.200



VEM4



Mechanical and electrical interlock sets

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical and electrical interlock set					
For same size contactors: AF09 ... AF16..-30-.. AF26 ... AF38..-30-00 AF09, AF16..-40-00 AF26, AF38..-40-00	0 2	VEM4	1SBN030111R1000	1	0.035
Fixing clips					
AF09 ... AF96, AF09..K ... AF16..K		BB4	1SBN110120W1000	50	0.002

Note: VEM4 not suitable for AF..Z contactors with DC control voltage 12...20 V DC (coil 20) and 24 V DC (coil 30).



BB4

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Accessories



CB5

Impulse contact blocks

For contactors	Contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
AF09 ... AF96	1	–	CB5-10	1SBN010013R1010	1	0.012
	–	1	CB5-01	1SBN010013R1001	1	0.012



RA4

RA4 interface relays

For contactors[1]	Coil voltages[2]	Rated control circuit voltage Uc	Type	Order code	Pkg qty	Weight (1 pce)
	V AC 50/60 Hz[1]	V DC				kg
AF09 ... AF96 NF	24 ... 250	24	RA4	1SBN060100R1000	1	0.040

[1]LDC4 additional terminal blocks and CAT4 auxiliary contact blocks not suitable with RA4.
[2]Main use with contactor coils 41, 11, 12, 13.

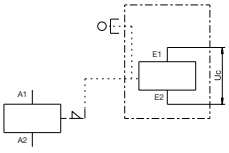


WA4

Mechanical latching unit

For contactors and contactor relays	Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V AC 50/60 Hz	V DC				kg
AF09 ... AF65, 4-pole NF	24...60	24...60	WA4-11	1SBN040100R1011	1	0.080
	48...130	48...130	WA4-12	1SBN040100R1012	1	0.080
	100...250	100...250	WA4-13	1SBN040100R1013	1	0.080
	250...500	250...500	WA4-14	1SBN040100R1014	1	0.080
AF80, AF96	24...60	24...60	WA4-96-11	1SBN040200R1011	1	0.080
	48...130	48...130	WA4-96-12	1SBN040200R1012	1	0.080
	100...250	100...250	WA4-96-13	1SBN040200R1013	1	0.080
	250...500	250...500	WA4-96-14	1SBN040200R1014	1	0.080
Mechanical latching unit for 24 V DC - 500 mA PLC control						
AF09 ... AF38, 4-pole NF	–	24	WA4-10	1SBN040100R1010	1	0.080

Note: For WA4 accessory use with contactor or contactor relay coil 30, please consult your ABB local sales organization.



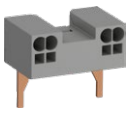
Wiring diagram

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Other accessories



LDC4



LDC4K



BX4

BX4-CA



BA4



BA5-50



BP38-4



BDT4
For AF09 ... AF65, NF



BDT4
For AF80 ... AF96

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Additional coil terminal blocks				
With screw terminal				
AF09 ... AF96, NF	LDC4	1SBN070156T1000	10	0.010
With Push-in Spring terminal				
AF09 ... AF96, NF, AF09..K ... AF16..K	LDC4K	1SBN070159T1000	10	0.010
Protective covers				
AF09 ... AF96, AF09..K ... AF16..K 1-stack contactors and NF contactor relays	BX4	1SBN110108T1000	10	0.006
4-pole CA4, 2-pole CAT4 auxiliary contact blocks and TEF4 electronic timer	BX4-CA	1SBN110109W1000	50	0.001

Note: BX4 produced since 13045 (day 045 - year 2013) are suitable for AF40 ... AF96.

Function markers AF09 ... AF2850				
AF09 ... AF370 contactors, TF thermal overload relays, EF electronic overload relays and MS116, MS132 manual motor starters	BA4	1SNA235156R2700	16	0.011
AF400 ... AF2850 and accessories	BA5-50	1SBN110000R1000	1	0.017

Mounting piece for replacing installed contactors fixed by screws by AF contactors.

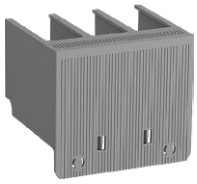
From contactor	To contactor				
A26 ... A40, AL26 ... AL40	AF09 ... AF38	BP38-4	1SBN112303T1000	10	0.003
A50 ... A75, AE50 ... AE75, AF50 ... AF75	AF40 ... AF65	BP65-4	1SBN113403T1000	10	0.004
A95, A110, AE95, AE110, F95, AF110	AF80 ... AF96	BP96-4	1SBN113903T1000	10	0.005
Test block					
AF09...AF96, NF		BDT4	1SBN110122T1000	10	0.007

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Other accessories



LT65-30



LT140-30L



LT370-30C



LT460-AC



LT80-40



LT205-40



LD38-4



LK96-4F

Terminal shrouds

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
3-pole contactors				
AF40 ... AF65	LT65-30	1SBN123401R1000	1	0.015
AF80, AF96	LT96-30	1SBN123901R1000	1	0.020
AF116 ... AF146, with compression lugs	LT140-30L	1SFN124203R1000	2	0.070
AF190, AF205, with cable clamps	LT205-30C	1SFN124801R1000	2	0.050
AF190, AF205, with compression lugs	LT205-30L	1SFN124803R1000	2	0.220
AF190, AF205, with shorting bar or between contactor and TOL/EOL in DOL starters	LT205-30Y	1SFN124804R1000	1	0.050
AF265 ... AF370, with cable clamps	LT370-30C	1SFN125401R1000	2	0.035
AF265 ... AF370, with compression lugs	LT370-30L	1SFN125403R1000	2	0.280
AF265 ... AF370, with shorting bar or between contactor and TOL/EOL in DOL starters	LT370-30Y	1SFN125404R1000	1	0.075
AF265 ... AF370, for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	1	0.15
AF400, AF460 with cable clamps	LT460-AC	1SFN125701R1000	2	0.100
AF400, AF460 with compression lugs	LT460-AL	1SFN125703R1000	2	0.800
AF580, AF750 with cable clamps	LT750-AC	1SFN126101R1000	2	0.120
AF580, AF1250 with compression lugs	LT750-AL	1SFN126103R1000	2	0.825
4-pole contactors				
AF40, AF52	LT52-40	1SBN123402R1000	1	0.020
AF80	LT80-40	1SBN123902R1000	1	0.025
AF116 ... AF140, with compression lugs	LT140-40L	1SFN124203R2000	2	0.090
AF190 ... AF205, with cable clamps	LT205-40C	1SFN124801R2000	2	0.035
AF190 ... AF205, with compression lugs	LT205-40L	1SFN124803R2000	2	0.140
AF265 ... AF370, with cable clamps	LT370-40C	1SFN125401R2000	2	0.040
AF265 ... AF370, with compression lugs	LT370-40L	1SFN125403R2000	2	0.165

Note: With LT65-30, LT96-30, LT52-40, LT80-40, use rigid cables or flexible cables with insulated ferrules including a stripping length ≥ 18 mm.

Additional terminal blocks

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
AF26 ... AF38	LD38-4	1SBN072308R1000	2	0.070

Terminals for control lead connections

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
AF40 ... AF96	LK96-4F	1SBN073452R2000	2	0.005

Note : LK96 not compatible with LT Terminal shrouds

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Connections



LW140

Terminal enlargements

For contactors	Dimensions hole Ø mm	Dimensions bar mm	Type	Order code	Pkg qty	Weight (1 pce) kg
3-pole contactors						
AF116 ... AF146	6.5	13 x 3	LW140	1SFN074207R1000	1	0.115
AF190, AF205	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.260
AF265 ... AF370	10.5	25 x 5	LW370	1SFN075407R1000	1	0.340
AF400, AF460	10.5	25 x 5	LW460	1SFN075707R1000	1	0.730
AF580, AF750	13	40 x 6	LW750	1SFN076107R1000	1	1.230
AF1250	13	50 x 10	LW1250	1SFN076407R1000	1	2.000
4-pole contactors						
AF190 ... AF205	10.5	20 x 5	LW205-40	1SFN074807R2000	1	0.306
AF265 ... AF370	10.5	25 x 5	LW370-40	1SFN075407R2000	1	0.540



LW205-40

Terminal extension

For 3-pole contactors	Dimensions hole Ø mm	Dimensions bar mm	Type	Order code	Pkg qty	Weight (1 pce) kg
AF116 ... AF146	6.5	13 x3	LX140	1SFN074210R1000	1	0.072
AF190, AF205	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.180
AF265 ... AF370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.234
AF400, AF460	10.5	25 x 5	LX460	1SFN075710R1000	1	0.500
AF580, AF750	13	40 x 6	LX750	1SFN076110R1000	1	0.850



LX140

Connection sockets

For contactor	Type	Order code	Pkg qty	Weight (1 pce) kg
3-pole contactors				
AF116 ... AF146	LL146-30	1SFN074211R1000	6	0.102
AF190 ... AF205	LL205-30	1SFN074811R1000	1	0.166
AF265 ... AF370	LL370-30	1SFN075411R1000	1	0.173
AF400 ... AF460	LE460	1SFN075716R1000	6	0.600
AF580 ... AF750	LE750	1SFN076116R1000	6	0.750
4-pole contactors				
AF116 ... AF140	LL146-40	1SFN074211R2000	8	0.132
AF190 ... AF205	LL205-40	1SFN074811R2000	2	0.216
AF265 ... AF370	LL370-40	1SFN075411R2000	2	0.224



LL146-30

Connection module

For contactor	Type	Order code	Pkg qty	Weight (1 pce) kg
3-pole contactors				
AF116 ... AF146	LD146-30	1SFN074208R1000	2	0.165
4-pole contactors				
AF116 ... AF140	LD146-40	1SFN074208R2000	2	0.225



LD146-30

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Terminal connecting strips and shorting bars


LY16-4

Types	for connection of "n" poles	with terminal	insulated
LP	n = 2	no	no[1]
LY	n = 2 (secable LY16-4, LY38-4 connecting strips)	no	yes
	n = 3	no	yes[1]
LH	n = 2	yes	no
LF	n = 3	yes	yes
LG	n = 4	yes	yes

[1]LP460 ... LP750, LY185 ... LY750 not insulated. Use terminal shrouds.


LY185


LH38-4

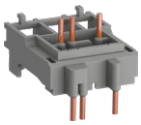

LF16-4


LG16-4

For contactors	max. nominal continuous current with "n" poles				Cable cross-sectional area	Type	Order code	Pkg qty	Weight (1 pce)
	in parallel			in series					
	2 poles	3 poles	4 poles	2 poles					
	A				mm²				kg
AF09	30	33	–	25	6	LY16-4	1SBN071303T1000	10	0.006
AF12	32	36	–	27					
AF16	34	40	–	30					
AF26	50	60	–	45	10	LY38-4	1SBN072303T1000	10	0.012
AF116 ... AF146	–	240	–	–	–	LY140	1SFN074203R1000	1	0.055
AF190, AF205	–	400	–	–	–	LY185	1SFN074703R1000	1	0.200
AF265 ... AF370	–	670	–	–	–	LY300	1SFN075103R1000	1	0.300
AF400, AF460	–	1000	–	–	–	LY460	1SFN075703R1000	1	0.450
AF580, AF750	–	1650	–	–	–	LY750	1SFN076103R1000	1	0.800
AF190, AF205	300	–	–	–	–	LP185	1SFN074712R1000	2	0.300
AF265 ... AF370	475	–	–	–	–	LP300	1SFN075112R1000	2	0.400
AF400, AF460	725	–	–	–	–	LP460	1SFN075712R1000	2	0.550
AF580, AF750	1200	–	–	–	–	LP750	1SFN076112R1000	2	0.950
AF09	45		–	–	10	LH38-4	1SBN072304R1000	2	0.012
AF12	50		–	–	10				
AF16	54		–	–	16				
AF26	81		–	–	25				
AF30, AF38	90		–	–	25				
AF09	–	62	–	–	16	LF16-4	1SBN071305R1000	2	0.020
AF12	–	70	–	–	25				
AF16	–	75	–	–	25				
AF26	–	112	–	–	35	LF38-4	1SBN072305R1000	2	0.040
AF30, AF38	–	125	–	–	50				
AF09	–	–	70	–	25	LG16-4	1SBN071306R1000	2	0.025
AF12	–	–	78	–	25				
AF16	–	–	84	–	25				

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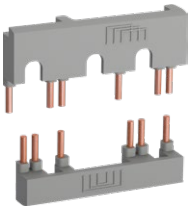
Connection accessories for starting solutions



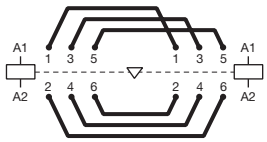
BEA16-4



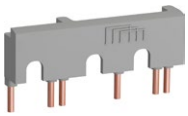
BPR65-4



BER16-4



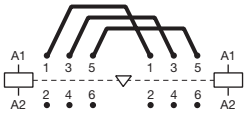
BER, BEM
Reversing connections



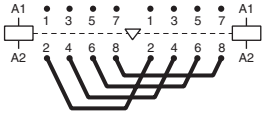
BEP16-30



BEP140-30



BEP, BES
3-pole phase to phase connections



BEP
4-pole changeover connections

Connecting links with manual motor starters

For 3-pole contactors	Manual motor starter	Type	Order code	Pkg qty	Weight (1 pce) kg
AF09 ... AF16	MS116-0.16 ... MS116-25, MS132-0.16... MS132-25	BEA16-4	1SBN081306T1000	10	0.025
AF26 ... AF38	MS116-0.16 ... MS116-16, MS132-0.16 ... MS132-10	BEA26-4	1SBN082306T1000	10	0.025
	MS116-20 ... MS116-32, MS132-12 ... MS132-32	BEA38-4	1SBN082306T2000	10	0.030
AF40 ... AF65	MS165-16 ... MS165-65	BEA65-4	1SBN083406R1000	1	0.090
	MS165-16 ... MS165-65[1]	BPR65-4[2]	1SBN113405R1000	1	0.014

Note : BEA not suitable for AF..Z contactors with DC control voltage 24 V DC (coil 30).
[1]Applicable for MS165 manufactured after week 31, 2016 (date code > 16214).
[2]Use one BPR65-4 for each contactor AF40 ... AF65.

Connection sets for reversing contactors

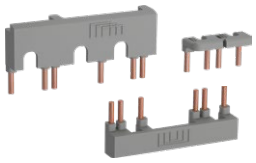
For 3-pole contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
AF09 ... AF16	BER16-4	1SBN081311R1000	1	0.045
AF26 ... AF38	BER38-4	1SBN082311R1000	1	0.100
AF40 ... AF65	BER65-4	1SBN083411R1000	1	0.175
AF80, AF96	BER96-4	1SBN083911R1000	1	0.250
AF116 ... AF146	BER140-4	1SFN084211R1000	1	0.615
AF190, AF205	BER205-4	1SFN084811R1000	1	1.237
AF265 ... AF370	BER370-4	1SFN085411R1000	1	2.140
AF400, AF460	BEM460-30	1SFN085701R1000	1	4.400
AF580, AF750	BEM750-30	1SFN086101R1000	1	7.300

Phase to phase connections

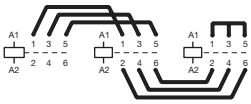
For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
3-pole contactors				
AF09 ... AF16	BEP16-30	1SBN081314R1000	1	0.025
AF26 ... AF38	BEP38-30	1SBN082314R1000	1	0.050
AF116 ... AF146	BEP140-30	1SFN084214R1000	1	0.320
AF190, AF205	BEP205-30	1SFN084814R1000	1	0.534
AF265 ... AF370	BEP370-30	1SFN085414R1000	1	0.926
AF400, AF460	BES460	1SFN085704R1000	1	2.200
AF580, AF750	BES750	1SFN086104R1000	1	3.700
4-pole contactors				
AF116 ... AF140	BEP140-40	1SFN084214R2000	1	0.420
AF190 ... AF205	BEP205-40	1SFN084814R2000	1	0.710
AF265 ... AF370	BEP370-40	1SFN085414R2000	1	1.230

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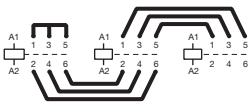
Connection sets for star-delta starter



BEY16-4



AF09 ... AF370
Line-delta-star connection

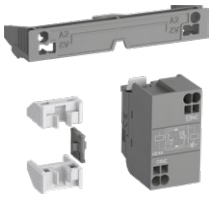


AF400 ... AF750
Star-delta-line connection

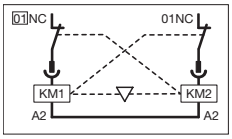
For 3-pole line, delta & star contactors	Interlock unit between delta & star contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
AF09 ... AF16	With or without VM4 or VEM4	BEY16-4	1SBN081313R2000	1	0.050
AF26 ... AF38	With or without VM4 or VEM4	BEY38-4	1SBN082713R2000	1	0.110
AF40 ... AF65	With or without VM96-4	BEY65-4	1SBN083413R2000	1	0.200
AF80, AF96	With or without VM96-4	BEY96-4	1SBN083913R2000	1	0.250
AF116 ... AF146	With or without VM19	BEY140-4	1SFN084413R1000	1	1.040
AF190 ... AF205 (line and delta) AF116 ... AF146 (star)	With or without VM140/190	BEY190-4	1SFN084813R1000	1	1.154
AF190, AF205	With or without VM19	BEY205-4	1SFN085213R1000	1	1.205
AF265 ... AF370 (line and delta) AF190 ... AF205 (star)	With or without VM205/265	BEY265-4	1SFN085413R1000	1	2.020
AF265 ... AF370	With or without VM19	BEY370-4	1SFN085813R1000	1	2.110
AF400 ... AF460	With or without VM750H	BED460	1SFN085703R1000	1	4.700
AF580 ... AF750 (line and delta) AF400 ... AF460 (star)	With or without VM750H	BED580	1SFN085903R1000	1	6.300
AF580 ... AF750	With or without VM750H	BED750	1SFN086103R1000	1	7.700

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Connection accessories for starting solutions- with Push-in Spring terminals



VEM4K





BEA16-4K1

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
					kg
Mechanical and electrical interlock set[1]					
AF09..K ... AF16..K AF26..K ... AF38..K	0 2	VEM4K	1SBN030113R1000	1	0.030

Note: - VEM4K includes a VM4 mechanical interlock unit with 2 fixing clips (BB4), a VE4K electrical interlock block with A2 - A2 connection.
- VE4K block must be used with A2-A2 connection to respect the electrical connection diagram.
- VEM4K not suitable for AF..Z contactors with DC control voltage 12 ... 20 V DC (coil 20 and 24 V DC (coil 30).
For product availability, please consult your ABB local sales organization.

Connecting links with manual motor starters[1]

AF09..K ... AF16..K	with MS132-0.16K... MS132-25K	BEA16-4K1	1SBN081324T1000	10	0.052
AF26..K ... AF38..K	with MS132-0.16K... MS132-32K	BEA38-4K1	1SBN082324T1000	10	0.057

[1]For product availability, please consult your ABB local sales organization.
Note: BEA not suitable for AF..Z contactors with DC control voltage 24 V DC (coil 30).

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Connection bars



BEA140/XT2



BEA205/T4



BEA370/T5

For 3-pole contactors	MCCB	Type	Order code	Pkg qty	Weight (1 pce) kg
Vertical assembly					
AF116 ... AF146	XT2	BEA140/XT2	1SFN084206R1000	1	0.058
AF116 ... AF146	XT3	BEA140/XT3	1SFN084206R1002	1	0.070
AF116 ... AF146	XT4	BEA140/XT4	1SFN084206R1001	1	0.068
AF190, AF205	XT4	BEA205/XT4	1SFN084806R1000	1	0.200
AF190, AF205	T4	BEA205/T4	1SFN084806R1001	1	0.190
AF265 ... AF370	T5	BEA370/T5	1SFN085406R1000	1	0.350
AF400 ... AF750	T6	BEA750/T6	1SFN086106R1000	1	0.410
AF400 ... AF750	T5	BEA750/T5	1SFN086106R1001	1	0.410
Vertical assembly with control wire terminals (also suitable when using busbar kits for starter combinations)					
AF400 ... AF750	T5	BEA750D/T5	1SFN086106R1003	1	0.720
AF400 ... AF750	T6	BEA750D/T6	1SFN086106R1002	1	0.720
Horizontal assembly (also suitable when using busbar kits for starter combinations)					
AF400, AF460	T6/XT6	BEA460H/S6	1SFN085907R1000	1	2.450

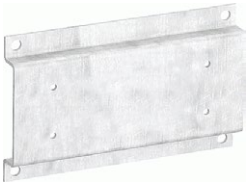
Connection bars between contactors and switch fuse

For 3-pole contactors	Switch fuse	Type	Order code	Pkg qty	Weight (1 pce) kg
Vertical assembly					
AF400, AF460	OESA400	BEF460/OESA400	1SFN085708R1000	1	0.340
AF460 ... AF750	OESA630 to OESA800	BEF750/OESA800	1SFN086108R1000	1	0.740
Horizontal assembly					
AF400, AF460	OESA400...LR	OESA460H/OESA400	1SFN085709R1000	1	1.250

Note: The BEF connection bars provided for the A145 ... A300 contactors can be used for the AF145 ... AF300 contactors.

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Adapter plates



PR146-1

From contactors	To contactor	Type	Order code	Pkg qty	Weight (1 pce)
					kg
A95, AF95, A110, AF110	AF116, AF140, AF146	PR146-1	1SFN094200R1000	1	0.300
EH150, EH160, EH175, EH210, EG160	AF190, AF205	PR210-1	1SFN094900R1000	1	0.440
EH250, EH260, EH300	AF265, AF305, AF370	PR300-1	1SFN095300R1000	1	0.560
EH370, EH550, EG315	AF400, AF460, AF580	PR460-1	1SFN095700R1000	1	0.900
EH700, EH800	AF750	PR750-1	1SFN096100R1000	1	0.500
OKYM150, OKYM175	AF190	PR185-2	1SFN095100R1001	1	0.500
OKYM200, OKYM250	AF265, AF305, AF370	PR300-2	1SFN095300R1001	1	0.500
OKYM315	AF400, AF460	PR400-2	1SFN095700R1002	1	0.820
OKYM400	AF400, AF460	PR460-2	1SFN095700R1001	1	0.800
OKYM500	AF580	PR580-2	1SFN096100R1002	1	0.700
EH550, EG630, OKYM630	AF580, AF750	PR750-2	1SFN096100R1001	1	1.100

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Low Voltage Ride Through (LVRT) modules



RU19/120

For contactor	Rated control circuit voltage Uc V 50/60 Hz	Type	Order code	Weight Pkg (1 pce) kg
AF116 ... AF370 use coil 33 AF400 ... AF1250 use coil 69	110...120	RU19/120	1SFN170801R1001	0.400
AF116 ... AF370 use coil 33 AF400 ... AF1250 use coil 70	230...240	RU19/240	1SFN170801R1002	0.400

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Contactors and NFC contactor relays

Auxiliary contact blocks for AFC09 ... AFC38



CA4-10



CAL4-11



CA4-22E



CAT4-11E

For contactors	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce)
								kg
Front-mounted instantaneous auxiliary contact blocks								
AFC09 ... AFC38 4-pole NFC	1	0	–	–	CA4-10	1SBN010110R1010	1	0.014
	1	0	–	–	CA4-10-T	1SBN010110T1010	10	0.014
	0	1	–	–	CA4-01	1SBN010110R1001	1	0.014
	0	1	–	–	CA4-01-T	1SBN010110T1001	10	0.014
AFC09 ... AFC16-30-10	2	2	–	–	CA4-22M	1SBN010140R1122	1	0.055
	3	1	–	–	CA4-31M	1SBN010140R1131	1	0.055
	1	3	–	–	CA4-13M	1SBN010140R1113	1	0.055
	0	4	–	–	CA4-04M	1SBN010140R1104	1	0.055
AFC26 ... AFC38-30-00 AFC09 ... AFC38-40-00 AFC09 ... AFC38-22-00	2	2	–	–	CA4-22E	1SBN010140R1022	1	0.055
	3	1	–	–	CA4-31E	1SBN010140R1031	1	0.055
	4	0	–	–	CA4-40E	1SBN010140R1040	1	0.055
AFC26 ... AFC38-30-00 AFC09 ... AFC16-40-00	0	4	–	–	CA4-04E	1SBN010140R1004	1	0.055
AFC09 ... AFC16-30-01	2	2	–	–	CA4-22U	1SBN010140R1322	1	0.055
	3	1	–	–	CA4-31U	1SBN010140R1331	1	0.055
	4	0	–	–	CA4-40U	1SBN010140R1340	1	0.055
4-pole NFC	2	2	–	–	CA4-22N	1SBN010140R1222	1	0.055
	3	1	–	–	CA4-31N	1SBN010140R1231	1	0.055
	4	0	–	–	CA4-40N	1SBN010140R1240	1	0.055
	1	3	–	–	CA4-13N	1SBN010140R1213	1	0.055
NFC..40E	0	4	–	–	CA4-04N	1SBN010140R1204	1	0.055
Front-mounted auxiliary contact blocks with N.O. leading contact and N.C. lagging contact								
AFC09 ... AFC38 4-pole NFC	–	–	1	0	CC4-10	1SBN010111R1010	1	0.014
	–	–	0	1	CC4-01	1SBN010111R1001	1	0.014

Note: 1 max CC4-10 and 1 max CC4-01.
CC4-01 use: on each "Accessory fitting details" table, the allowed number of N.C. add-on and built-in contacts including CC4-01, is decreased by one.

Side-mounted instantaneous auxiliary contact blocks								
AFC09 ... AFC38 NFC	1	1	–	–	CAL4-11	1SBN010120R1011	1	0.040
	1	1	–	–	CAL4-11-T	1SBN010120T1011	10	0.040
Front-mounted instantaneous auxiliary contact and A1/A2 coil terminal blocks								
AFC09 ... AFC16-30-10	1	1	–	–	CAT4-11M	1SBN010151R1111	1	0.040
AFC26 ... AFC38-30-00 AFC09 ... AFC38-40-00 AFC09 ... AFC38-22-00	1	1	–	–	CAT4-11E	1SBN010151R1011	1	0.040
AFC09 ... AFC16-30-01	1	1	–	–	CAT4-11U	1SBN010151R1311	1	0.040

For each contactor or contactor relay type, refer to "Accessory fitting details" table.

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Auxiliary contact blocks with Push-in Spring terminals


CA4-10K


CA4-22EK


CAL4-11K

For contactors	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Front-mounted instantaneous auxiliary contact blocks						
AFC09 ... AFC38 NFC	1	0	CA4-10K	1SBN010160R1010	1	0.012
	1	0	CA4-10K-T	1SBN010160T1010	10	0.012
	0	1	CA4-01K	1SBN010160R1001	1	0.012
	0	1	CA4-01K-T	1SBN010160T1001	10	0.012
AFC09 ... AFC16..-30-10	2	2	CA4-22MK	1SBN010146R1122	1	0.050
	3	1	CA4-31MK	1SBN010146R1131	1	0.050
	1	3	CA4-13MK	1SBN010146R1113	1	0.050
	0	4	CA4-04MK	1SBN010146R1104	1	0.050
AFC26 ... AFC38..-30-00 AFC09 ... AFC38..-40-00 AFC09 ... AFC38..-22-00	2	2	CA4-22EK	1SBN010146R1022	1	0.050
	3	1	CA4-31EK	1SBN010146R1031	1	0.050
	4	0	CA4-40EK	1SBN010146R1040	1	0.050
4-pole NFC	1	3	CA4-13NK	1SBN010146R1213	1	0.050
	2	2	CA4-22NK	1SBN010146R1222	1	0.050
	3	1	CA4-31NK	1SBN010146R1231	1	0.050
	4	0	CA4-40NK	1SBN010146R1240	1	0.050
NFC40E	0	4	CA4-04NK	1SBN010146R1204	1	0.050
Side-mounted instantaneous auxiliary contact blocks						
3-pole						
AFC09 ... AFC38 NFC	1	1	CAL4-11K	1SBN010134R1011	1	0.030

Note: for each contactor or contactor relay type, refer to "Accessory fitting details" table.

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Auxiliary contact blocks for severe industrial environments

For AFC09 ... AFC38 contactors



CE5-10W

For contactors	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce)
								kg
AFC09 ... AFC38 NFC	1	0	–	–	CE5-10D0.1	1SBN010015R1010	1	0.020
	0	1	–	–	CE5-01D0.1	1SBN010015R1001	1	0.020
	1	0	–	–	CE5-10D2	1SBN010017R1010	1	0.020
	0	1	–	–	CE5-01D2	1SBN010017R1001	1	0.020
	1	0	–	–	CE5-10W0.1	1SBN010016R1010	1	0.020
	0	1	–	–	CE5-01W0.1	1SBN010016R1001	1	0.020
	1	0	–	–	CE5-10W2	1SBN010018R1010	1	0.020
	0	1	–	–	CE5-01W2	1SBN010018R1001	1	0.020

(1) For each contactor type, refer to "Accessory fitting details" table.

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Electronic timers



TEF4-ON



TEF4-OFF



TEF4S-ON



TEF4S-OFF

For contactors, contactor relays	Time delay range selected by switch	Delay type	Rated control circuit voltage Uc V 50/60 Hz or DC	Auxiliary contacts		Type	Order code	Weight Pkg (1 pce) kg
With screw terminals								
AFC09 ... AFC38 NF	0.1...1 s 1...10 s 10...100 s	ON-delay	24...240	1	1	TEF4-ON	1SBN020112R1000	0.065
		OFF-delay	24...240	1	1	TEF4-OFF	1SBN020114R1000	0.065
With spring terminals								
AFC09 ... AFC38 NF	0.1...1 s 1...10 s 10...100 s	ON-delay	24...240	1	1	TEF4S-ON	1SBN020113R1000	0.065
		OFF-delay	24...240	1	1	TEF4S-OFF	1SBN020115R1000	0.065

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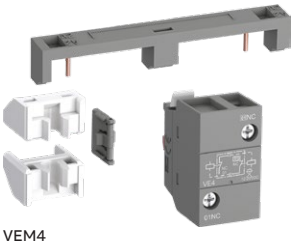
Interlocks



VM4

Mechanical interlock units

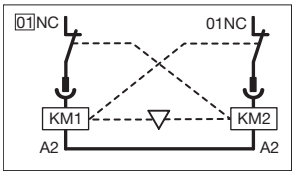
For contactors	Mounting	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical interlock units for two contactors mounted side by side					
AFC09 ... AFC38..-30-.. AFC09 ... AFC38..-40-00	–	VM4	1SBN030105T1000	10	0.005



VEM4

Mechanical and electrical interlock sets

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical and electrical interlock set					
For same size contactors: AFC09 ... AFC16..-30-.. AFC26 ... AFC38..-30-00 AFC09, AFC16..-40-00 AFC26, AFC38..-40-00	0 2	VEM4	1SBN030111R1000	1	0.035
Fixing clips					
AFC09 ... AFC38		BB4	1SBN110120W1000	50	0.002





BB4

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Impulse contact blocks



CB5

For contactors	Contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
AFC09 ... AFC38	1	–	CB5-10	1SBN010013R1010	1	0.012
	–	1	CB5-01	1SBN010013R1001	1	0.012

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Surge suppressors for contactor coils



RV4-1/50

For contactors	Rated control circuit voltage Uc	Type	Order code	Pkg qty	Weight (1 pce)
	V AC				kg
AFC09 ... AFC38	24...50	RV4-1/50	1SBN050400R1000	2	0.015
	50...130	RV4-1/130	1SBN050400R1001	2	0.015
	110...260	RV4-1/260	1SBN050400R1002	2	0.015
AFC09 ... AFC38	24...50	RC4-1/50	1SBN050410R1000	2	0.015
	50...130	RC4-1/130	1SBN050410R1001	2	0.015
	110...260	RC4-1/260	1SBN050410R1002	2	0.015

Note : The use of a surge suppressor will modify the operating time of the contactor or contactor relay. For more information about product availability or technical data, please consult ABB sales support team.



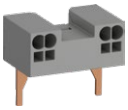
RC4-1/50

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Other accessories



LDC4



LDC4K



BX4

BX4-CA

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Additional coil terminal blocks				
With screw terminal				
AFC09 ... AFC38, NFC	LDC4	1SBN070156T1000	10	0.010
With Push-in Spring terminal				
AFC09 ... AFC38, NFC	LDC4K	1SBN070159T1000	10	0.010
Protective covers				
AFC09 ... AFC38 1-stack contactors and NFC contactor relays	BX4	1SBN110108T1000	10	0.006
4-pole CA4, 2-pole CAT4 auxiliary contact blocks and TEF4 electronic timer	BX4-CA	1SBN110109W1000	50	0.001



BP38-4



BDT4
For AFC09 ... AFC38, NFC

For contactors		Type	Order code	Pkg qty	Weight (1 pce) kg
Mounting piece for replacing installed contactors fixed by screws by AF contactors.					
From contactor	**To contactor**				
A26 ... A40, AL26 ... AL40	AFC09 ... AFC38	BP38-4	1SBN112303T1000	10	0.003
Test block					
AFC09...AFC38, NFC		BDT4	1SBN110122T1000	10	0.007



LD38-4

Additional terminal blocks

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
AFC26 ... AFC38	LD38-4	1SBN072308R1000	2	0.070

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Terminal connecting strips and shorting bars



LY16-4

Types	for connection of "n" poles	with terminal	insulated
LP	n = 2	no	no[1]
LY	n = 2 (secable LY16-4, LY38-4 connecting strips)	no	yes
	n = 3	no	yes[1]
LH	n = 2	yes	no
LF	n = 3	yes	yes
LG	n = 4	yes	yes

[1]LP460 ... LP750, LY185 ... LY750 not insulated. Use terminal shrouds.



LH38-4



LF16-4



LG16-4

For contactors	max. nominal continuous current with "n" poles				Cable cross-sectional area	Type	Order code	Pkg qty	Weight (1 pce)
	in parallel			in series					
	2 poles	3 poles	4 poles	2 poles					
	A				mm²				kg
AFC09	30	33	–	25	6	LY16-4	1SBN071303T1000	10	0.006
AFC12	32	36	–	27					
AFC16	34	40	–	30					
AFC26	50	60	–	45	10	LY38-4	1SBN072303T1000	10	0.012
AFC09	45		–	–	10	LH38-4	1SBN072304R1000	2	0.012
AFC12	50		–	–	10				
AFC16	54		–	–	16				
AFC26	81		–	–	25				
AFC30, AFC38	90		–	–	25				
AFC09		62	–		16	LF16-4	1SBN071305R1000	2	0.020
AFC12		70	–		25				
AFC16		75	–		25				
AFC26		112	–		35	LF38-4	1SBN072305R1000	2	0.040
AFC30, AFC38		125	–		50				
AFC09	–	–	70	–	25	LG16-4	1SBN071306R1000	2	0.025

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Spare parts contactors

Contactor coils, main contact sets and arc chutes



ZAF1650

Contactor coils

For contactors	Rated control circuit voltage Uc min. ... Uc max.		Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60 Hz	V DC				kg
AF400, AF460	-	24...60	ZAF460	1SFN155770R6806	1	0.525
	48...130	48...130	ZAF460	1SFN155770R6906	1	0.525
	100...250	100...250	ZAF460	1SFN155770R7006	1	0.525
	250...500	250...500	ZAF460	1SFN155770R7106	1	0.525
AF580 ... AF1250	-	24...60	ZAF750	1SFN156170R6806	1	1.335
	48...130	48...130	ZAF750	1SFN156170R6906	1	1.335
	100...250	100...250	ZAF750	1SFN156170R7006	1	1.335
	250...500	250...500	ZAF750	1SFN156170R7106	1	1.335
AF1350 ... AF2050	100...250	100...250	ZAF1650[1]	1SFN156570R7026	1 set	0.900
			ZP1650[2]	1SFN166521R1070	1	0.300
AF2650	100...250	100...250	ZAF2650[1]	1SFN156670R7026	1 set	0.900
			ZP2650[2]	1SFN166621R1070	1	0.300

ZAF460, ZAF750 : printed circuit board included.
[1]One set of two coil.
[2]Printed circuit board.



ZL1650

Main contact sets

For contactors		Type	Order code	Pkg qty	Weight (1 pce)
					kg
3-pole contactors					
AF116		ZL116	1SFN164203R1000	1	0.410
AF140		ZL140	1SFN164403R1000	1	0.410
AF146		ZL146	1SFN164603R1000	1	0.410
AF190		ZL190	1SFN164803R1000	1	1.093
AF205		ZL205	1SFN165203R1000	1	1.093
AF265		ZL265	1SFN165403R1000	1	2.010
AF305		ZL305	1SFN165803R1000	1	2.010
AF370		ZL370	1SFN166003R1000	1	2.010
AF400		ZL400	1SFN165703R1000	1	1.320
AF460		ZL460	1SFN165903R1000	1	1.320
AF580		ZL580	1SFN166103R1000	1	1.840
AF750		ZL750	1SFN166303R1000	1	1.840
AF1250		ZL1250	1SFN166403R1000	1	1.840
AF1350	For contactors produced before 2014-01-13, with serial number before 1S160100514O3xxxx	ZL1350	1SFN166503R1000	1	2.500
	For contactors produced since 2014-01-13, with serial number above 1S160100514O3xxxx	ZL1350-1	1SFN166503R1001	1	4.500
AF1650	For contactors produced before 2014-01-13, with serial number before 1S160100514O3xxxx	ZL1650	1SFN166703R1000	1	3.500
	For contactors produced since 2014-01-13, with serial number above 1S160100514O3xxxx	ZL1650-1	1SFN166703R1001	1	4.500
AF2050	For contactors produced before 2014-01-13, with serial number before 1S160100514O3xxxx	ZL2050	1SFN167003R1000	1	3.500
	For contactors produced since 2014-01-13, with serial number above 1S160100514O3xxxx	ZL2050-1	1SFN167003R1001	1	4.500
AF2650[3]		ZL2650	1SFN166603R1000	1	1.200
4-pole contactors					
AF116		ZLT116	1SFN164204R1000	1	0.435
AF140		ZLT140	1SFN164404R1000	1	0.435
AF190		ZLT190	1SFN164804R1000	1	2.038
AF205		ZLT205	1SFN165204R1000	1	2.038
AF265		ZLT265	1SFN165404R1000	1	2.222
AF305		ZLT305	1SFN165804R1000	1	2.222
AF370		ZLT370	1SFN166004R1000	1	2.222

[3]Does not include fixed contacts and screws.
Note: Only suitable for AF116...AF370 contactors "Made in Sweden" produced after 2018-09-01 (010918).

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Spare parts contactors

Contactor coils, main contact sets and arc chutes

Contactor coil modules

	Rated contol circuit Voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60Hz	V DC				kg
3-pole contactors						
AF116	24…60	20…60	ZAF116-11	1SFN154270R1106	1	0.324
	48…130	48…130	ZAF116-12	1SFN154270R1206	1	0.313
	100…250	100…250	ZAF116-13	1SFN154270R1306	1	0.288
	250…500	250…500	ZAF116-14	1SFN154270R1406	1	0.040
AF140	24…60	20…60	ZAF140-11	1SFN154470R1106	1	0.324
	48…130	48…130	ZAF140-12	1SFN154470R1206	1	0.313
	100…250	100…250	ZAF140-13	1SFN154470R1306	1	0.288
	250…500	250…500	ZAF140-14	1SFN154470R1406	1	0.298
AF146	24…60	20…60	ZAF146-11	1SFN154670R1106	1	0.324
	48…130	48…130	ZAF146-12	1SFN154670R1206	1	0.313
	100…250	100…250	ZAF146-13	1SFN154670R1306	1	0.288
	250…500	250…500	ZAF146-14	1SFN154670R1406	1	0.298
AF19, AF205	24…60	20…60	ZAF205-11	1SFN154870R1106	1	0.856
	48…130	48…130	ZAF205-12	1SFN154870R1206	1	0.831
	100…250	100…250	ZAF205-13	1SFN154870R1306	1	0.823
	250…500	250…500	ZAF205-14	1SFN154870R1406	1	0.818
AF265, AF305, AF370	24…60	20…60	ZAF370-11	1SFN155470R1106	1	1.262
	48…130	48…130	ZAF370-12	1SFN155470R1206	1	1.316
	100…250	100…250	ZAF370-13	1SFN155470R1306	1	1.036
	250…500	250…500	ZAF370-14	1SFN155470R1406	1	1.006
AF400, AF460	-	24…60	ZAF460	1SFN155770R6806	1	0.525
	48…130	48…130	ZAF460	1SFN155770R6906	1	0.525
	100…250	100…250	ZAF460	1SFN155770R7006	1	0.525
	250…500	250…500	ZAF460	1SFN155770R7106	1	0.525
AF580 … AF1250	-	24…60	ZAF750	1SFN156170R6806	1	1.335
	48…130	48…130	ZAF750	1SFN156170R6906	1	1.335
	100…250	100…250	ZAF750	1SFN156170R7006	1	1.335
	250…500	250…500	ZAF750	1SFN156170R7106	1	1.335
AF1350 … AF2050	100…250	100…250	ZAF1650[1]	1SFN156570R7026	1 set	0.900
			ZP1650[2]	1SFN166521R1070	1	0.300
AF2650	100…250	100…250	ZAF2650[1]	1SFN156670R7026	1 set	0.900
			ZP2650[2]	1SFN166621R1070	1	0.300
3-pole contactors with built-in PLC interface						
AF116	100…250	100…250	ZAF116-33	1SFN154270R3306	1	0.310
	250…500	250…500	ZAF116-34	1SFN154270R3406	1	0.324
AF140	100…250	100…250	ZAF140-33	1SFN154470R3306	1	0.310
	250…500	250…500	ZAF140-34	1SFN154470R3406	1	0.324
AF146	100…250	100…250	ZAF146-33	1SFN154670R3306	1	0.310
	250…500	250…500	ZAF146-34	1SFN154670R3406	1	0.324
AF190	100…250	100…250	ZAF190-33	1SFN154870R3306	1	0.893
	250…500	250…500	ZAF190-34	1SFN154870R3406	1	0.878
AF205	100…250	100…250	ZAF205-33	1SFN155270R3306	1	0.893
	250…500	250…500	ZAF205-34	1SFN155270R3406	1	0.878
AF265	100…250	100…250	ZAF265-33	1SFN155470R3306	1	1.124
	250…500	250…500	ZAF265-34	1SFN155470R3406	1	1.094
AF305	100…250	100…250	ZAF305-33	1SFN155870R3306	1	1.124
	250…500	250…500	ZAF305-34	1SFN155870R3406	1	1.094
AF370	100…250	100…250	ZAF370-33	1SFN156070R3306	1	1.124
	250…500	250…500	ZAF370-34	1SFN156070R3406	1	1.094

Note: Only suitable for AF116…AF370 contactors "Made in Sweden" produced after 2018-09-01 (010918).

[1]One set of two coil.

[2]Printed circuit board.

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Spare parts contactors

Contactor coils, main contact sets and arc chutes

Contactor coil modules

	Rated contol circuit Voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60Hz	V DC				kg
4-pole contactors						
AF116	24...60	20...60	ZAF116-40-11	1SFN154270R1146	1	0.340
	48...130	48...130	ZAF116-40-12	1SFN154270R1246	1	0.331
	100...250	100...250	ZAF116-40-13	1SFN154270R1346	1	0.308
	250...500	250...500	ZAF116-40-14	1SFN154270R1446	1	0.320
AF140	24...60	20...60	ZAF140-40-11	1SFN154470R1146	1	0.340
	48...130	48...130	ZAF140-40-12	1SFN154470R1246	1	0.331
	100...250	100...250	ZAF140-40-13	1SFN154470R1346	1	0.308
	250...500	250...500	ZAF140-40-14	1SFN154470R1446	1	0.320
AF190, AF205	24...60	20...60	ZAF205-40-11	1SFN154870R1146	1	0.864
	48...130	48...130	ZAF205-40-12	1SFN154870R1246	1	0.841
	100...250	100...250	ZAF205-40-13	1SFN154870R1346	1	0.839
	250...500	250...500	ZAF205-40-14	1SFN154870R1446	1	0.834
AF265, AF305, AF370	24...60	20...60	ZAF370-40-11	1SFN155470R1146	1	1.272
	48...130	48...130	ZAF370-40-12	1SFN155470R1246	1	1.328
	100...250	100...250	ZAF370-40-13	1SFN155470R1346	1	1.052
	250...500	250...500	ZAF370-40-14	1SFN155470R1446	1	1.032

Note: Only suitable for AF116...AF370 contactors "Made in Sweden" produced after 2018-09-01 (010918).

Electronic Modules

	Rated contol circuit Voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60Hz	V DC				kg
3-pole contactors						
AF116	24...60	20...60	ZP116-11	1SFN164223R1011	1	0.133
	48...130	48...130	ZP116-12	1SFN164223R1012	1	0.131
	100...250	100...250	ZP116-13	1SFN164223R1013	1	0.133
	250...500	250...500	ZP116-14	1SFN164223R1014	1	0.143
AF140	24...60	20...60	ZP140-11	1SFN164423R1011	1	0.133
	48...130	48...130	ZP140-12	1SFN164423R1012	1	0.131
	100...250	100...250	ZP140-13	1SFN164423R1013	1	0.133
	250...500	250...500	ZP140-14	1SFN164423R1014	1	0.143
AF146	24...60	20...60	ZP146-11	1SFN164623R1011	1	0.133
	48...130	48...130	ZP146-12	1SFN164623R1012	1	0.131
	100...250	100...250	ZP146-13	1SFN164623R1013	1	0.133
	250...500	250...500	ZP146-14	1SFN164623R1014	1	0.143
AF190, AF205	24...60	20...60	ZP205-11	1SFN164823R1011	1	0.610
	48...130	48...130	ZP205-12	1SFN164823R1012	1	0.610
	100...250	100...250	ZP205-13	1SFN164823R1013	1	0.610
	250...500	250...500	ZP205-14	1SFN164823R1014	1	0.620
AF265, AF305, AF370	24...60	20...60	ZP370-11	1SFN165423R1011	1	0.696
	48...130	48...130	ZP370-12	1SFN165423R1012	1	0.704
	100...250	100...250	ZP370-13	1SFN165423R1013	1	0.694
	250...500	250...500	ZP370-14	1SFN165423R1014	1	0.694
3-pole contactors with built-in PLC interface						
AF116	100...250	100...250	ZP116-33	1SFN164223R1033	1	0.155
	250...500	250...500	ZP116-34	1SFN164223R1034	1	0.169
AF140	100...250	100...250	ZP140-33	1SFN164423R1033	1	0.155
	250...500	250...500	ZP140-34	1SFN164423R1034	1	0.169
AF146	100...250	100...250	ZP146-33	1SFN164623R1033	1	0.155
	250...500	250...500	ZP146-34	1SFN164623R1034	1	0.169
AF190	100...250	100...250	ZP190-33	1SFN164823R1033	1	0.680
	250...500	250...500	ZP190-34	1SFN164823R1034	1	0.680
AF205	100...250	100...250	ZP205-33	1SFN165223R1033	1	0.680
	250...500	250...500	ZP205-34	1SFN165223R1034	1	0.680
AF265	100...250	100...250	ZP265-33	1SFN165423R1033	1	0.782
	250...500	250...500	ZP265-34	1SFN165423R1034	1	0.782
AF305	100...250	100...250	ZP305-33	1SFN165823R1033	1	0.782
	250...500	250...500	ZP305-34	1SFN165823R1034	1	0.782
AF370	100...250	100...250	ZP370-33	1SFN166023R1033	1	0.782
	250...500	250...500	ZP370-34	1SFN166023R1034	1	0.782

Note: Only suitable for AF116...AF370 contactors "Made in Sweden" produced after 2018-09-01 (010918).

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Spare parts contactors

Contactor coils, main contact sets and arc chutes

Electronic Modules

	Rated contol circuit Voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60Hz	V DC				kg
4-pole contactors						
AF116	24...60	20...60	ZPT116-11	1SFN164224R1011	1	0.149
	48...130	48...130	ZPT116-12	1SFN164224R1012	1	0.149
	100...250	100...250	ZPT116-13	1SFN164224R1013	1	0.153
	250...500	250...500	ZPT116-14	1SFN164224R1014	1	0.165
AF140	24...60	20...60	ZPT140-11	1SFN164424R1011	1	0.149
	48...130	48...130	ZPT140-12	1SFN164424R1012	1	0.149
	100...250	100...250	ZPT140-13	1SFN164424R1013	1	0.153
	250...500	250...500	ZPT140-14	1SFN164424R1014	1	0.165
AF190, AF205	24...60	20...60	ZPT205-11	1SFN165224R1011	1	0.618
	48...130	48...130	ZPT205-12	1SFN165224R1012	1	0.620
	100...250	100...250	ZPT205-13	1SFN165224R1013	1	0.626
	250...500	250...500	ZPT205-14	1SFN165224R1014	1	0.636
AF265, AF305, AF370	24...60	20...60	ZPT370-11	1SFN166024R1011	1	0.706
	48...130	48...130	ZPT370-12	1SFN166024R1012	1	0.716
	100...250	100...250	ZPT370-13	1SFN166024R1013	1	0.710
	250...500	250...500	ZPT370-14	1SFN166024R1014	1	0.720

Note: Only suitable for AF116...AF370 contactors "Made in Sweden" produced after 2018-09-01 (010918).

Arc chutes

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
AF400, AF460	ZW460	1SFN165710R1000	1	1.380
AF580, AF750, AF1250	ZW750	1SFN166110R1000	1	1.500
AF1350, AF1650, AF2050	ZW1650	1SFN166510R1001	1	4.560
AF2650	ZW2650	1SFN166610R1000	1	4.000

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Auxiliary contact blocks



CA5-10



CA5-40E



CAL5-11



CAL18-11



CE5-01W

For contactors	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce) kg
Front-mounted instantaneous auxiliary contact blocks, 1-pole								
UA16 ... UA110	1	0	–	–	CA5-10	1SBN010010R1010	10	0.014
	0	1	–	–	CA5-01	1SBN010010R1001	10	0.014
	–	–	1	0	CC5-10	1SBN010011R1010	10	0.014
	–	–	0	1	CC5-01	1SBN010011R1001	10	0.014
Front-mounted instantaneous auxiliary contact blocks, 4-pole								
UA16 ... UA30	2	2	–	–	CA5-22M	1SBN010040R1122	2	0.060
	3	1	–	–	CA5-31M	1SBN010040R1131	2	0.060
	1	3	–	–	CA5-13M	1SBN010040R1113	2	0.060
	0	4	–	–	CA5-04M	1SBN010040R1104	2	0.060
	1	1	1	1	CA5-11/11M	1SBN010040R1118	2	0.060
UA50 ... UA110	2	2	–	–	CA5-22E	1SBN010040R1022	2	0.060
	3	1	–	–	CA5-31E	1SBN010040R1031	2	0.060
	4	0	–	–	CA5-40E	1SBN010040R1040	2	0.060
	0	4	–	–	CA5-04E	1SBN010040R1004	2	0.060
	1	1	1	1	CA5-11/11E	1SBN010040R1018	2	0.060
Side-mounted instantaneous auxiliary contact blocks, 2-pole								
UA16 ... UA75	1	1	–	–	CAL5-11	1SBN010020R1011	2	0.050
UA95, UA110, GAF185...GAF2050	1	1	–	–	CAL18-11	1SFN010720R1011	2	0.050

For each contactor type, refer to "Accessory fitting details" table.
Note:
- The front-mounted auxiliary contact blocks provided for the UA75 contactors can be used with the GA and GAE types
- The CAL auxiliary contact blocks can be used with GA contactors:
  GA75-10-00: 2 x CAL5-11 blocks
  GA75-10-11: 1 x CAL5-11 block
  GAE75-10-00: 1 x CAL5-11 block
  GAE75-10-11: no add-on block.
- The CAL auxiliary contact blocks can be used with UA..RA contactors. See "Accessory fitting details" for this contactor type.

For severe industrial environments

For contactors	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce) kg
Front-mounting instantaneous auxiliary contact blocks, 1-pole								
UA16 ... UA75	1	–	–	–	CE5-10D0.1	1SBN010015R1010	1	0.020
	–	1	–	–	CE5-01D0.1	1SBN010015R1001	1	0.020
	1	–	–	–	CE5-10D2	1SBN010017R1010	1	0.020
	–	1	–	–	CE5-01D2	1SBN010017R1001	1	0.020
	1	–	–	–	CE5-10W0.1	1SBN010016R1010	1	0.020
	–	1	–	–	CE5-01W0.1	1SBN010016R1001	1	0.020
	1	–	–	–	CE5-10W2	1SBN010018R1010	1	0.020
	–	1	–	–	CE5-01W2	1SBN010018R1001	1	0.020
Side-mounting instantaneous auxiliary contact blocks, 1-pole microswitch auxiliary contact N.O. or N.C.								
UA95, UA110 GAF185 ... GAF2050	1	0	–	–	CEL18-10	1SFN010716R1010	1	0.050
UA95, UA110 GAF185 ... GAF2050	0	1	–	–	CEL18-01	1SFN010716R1001	1	0.050

For each contactor type, refer to "Accessory fitting details" table.
Note: The front-mounted auxiliary contact blocks provided for the UA contactors can be used with the GA and GAE types.
The side-mounted auxiliary contact blocks provided for the UA95, UA110 contactors can be used with the GAF types.

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Accessories for UA, UA..RA, GA75, GAE75, GAF contactors



TEF5-OFF

Electronic timers

For contactors, contactor relays	Time delay range selected by switch	Delay type	Rated control circuit voltage Uc	Auxiliary contacts	Type	Order code	Weight Pkg (1 pce)
			V 50/60 Hz or DC				kg
UA16 ... UA75 GA75, GAE75	0.1...1 s 1...10 s 10...100 s	ON-delay	24...240	1 1	TEF5-ON	1SBN020312R1000	0.065
		OFF-delay	24...240	1 1	TEF5-OFF	1SBN020314R1000	0.065



VE5-2

Mechanical and electrical interlock units

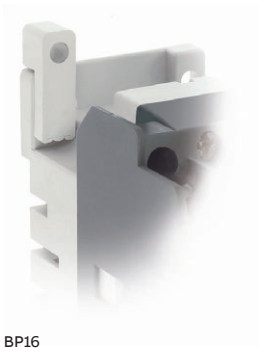
For contactors	Mounting	Type	Order code	Pkg qty	Weight (1 pce)
					kg
Mechanical and electrical interlock units for two horizontal mounted contactors					
GA75, GAE75	Rail mounting	VE5-2	1SBN030210R1000	1	0.146



BA5-50

BA5-50 Function markers

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
UA, UA..RA and accessories GA75, GAE75	BA5-50	1SBN110000R1000	1	0.017



BP16

BP16 Mounting piece

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
UA16, UA16..RA	BP16	1SBN111403R1000	100	0.141

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Accessories for UA, UA..RA, GA75, GAE75, GAF contactors



RV5/50

Surge suppressors for contactor coils

For contactors	Rated control circuit voltage Uc			Type	Order code	Pkg qty	Weight (1 pce)
	V	AC	DC				kg
UA, UA..RA GA75, GAE75	24...50	●	●	RV5/50	1SBN050010R1000	2	0.015
	50...133	●	●	RV5/133	1SBN050010R1001	2	0.015
	110...250	●	●	RV5/250	1SBN050010R1002	2	0.015
	250...440	●	●	RV5/440	1SBN050010R1003	2	0.015
UA16...UA30, UA16RA... UA30RA	24...50	●	–	RC5-1/50	1SBN050100R1000	2	0.012
	50...133	●	–	RC5-1/133	1SBN050100R1001	2	0.012
	110...250	●	–	RC5-1/250	1SBN050100R1002	2	0.012
	250...440	●	–	RC5-1/440	1SBN050100R1003	2	0.012
UA50...UA110, UA50RA... UA110RA GA75	24...50	●	–	RC5-2/50	1SBN050200R1000	2	0.015
	50...133	●	–	RC5-2/133	1SBN050200R1001	2	0.015
	110...250	●	–	RC5-2/250	1SBN050200R1002	2	0.015
	250...440	●	–	RC5-2/440	1SBN050200R1003	2	0.015
GAE75	12...32	–	●	RT5/32	1SBN050020R1000	2	0.015
	25...65	–	●	RT5/65	1SBN050020R1001	2	0.015
	50...90	–	●	RT5/90	1SBN050020R1002	2	0.015
	77...150	–	●	RT5/150	1SBN050020R1003	2	0.015
	150...264	–	●	RT5/264	1SBN050020R1004	2	0.015



RC5-1/50



RA5-1

Interface relays

For contactors	Coil voltages	Rated control circuit voltage Uc	Type	Order code	Pkg qty	Weight (1 pce)
	V 50/60 Hz	V DC				kg
UA, UA..RA GA75	24...250	24	RA5-1	1SBN060300R1000	1	0.050
			RA5-1	1SBN060300T1000	10	0.050



WB75-A

Mechanical latching units

For contactors	Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50 Hz or DC	V 60 Hz				kg
UA16 ... UA75, GA75, GAE75	24	24...28	WB75-A	FPTN372726R1001	1	0.120
	42	42...48	WB75-A	FPTN372726R1002	1	0.120
	48	48...55	WB75-A	FPTN372726R1003	1	0.120
	110	110...127	WB75-A	FPTN372726R1004	1	0.120
	220...230	220...255	WB75-A	FPTN372726R1006	1	0.120
	230...240	230...277	WB75-A	FPTN372726R1005	1	0.120
	380...415	380...440	WB75-A	FPTN372726R1007	1	0.120
	415...440	440...480	WB75-A	FPTN372726R1008	1	0.120

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Accessories for UA, UA..RA, GA75, GAE75, GAF contactors



LD75

Terminal blocks

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
UA50(RA) ... UA75(RA)	LD75	1SBN073508R1000	1	0.115



LW

Terminal enlargements

For contactors	Dimensions hole Ø mm	Dimensions bar mm	Type	Order code	Pkg qty	Weight (1 pce) kg
UA95, UA110	6.5	15 x 3	LW110	1SFN074307R1000	1	0.100



1SBC575763F0301

LK75-L

Terminals for control lead connections

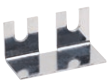
For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Right and left on: UA50(RA) ... UA75(RA) GA75, GAE75	LK75-L	1SBN073552R1003	2	0.006
Opposite on: UA50(RA) ... UA75(RA) GA75, GAE75	LK75-F	1SBN073552R1002	2	0.006

Note: The LK terminals provided for the UA contactors can be used with the AM types.



1SBC575773F0301

LK75-F



LP185

Connection bar for contactor

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Connection bar for contactor				
GAF185	LP185	1SFN074712R1000	2	0.300
GAF300	LP300	1SFN075112R1000	2	0.400
GAF460	LP460	1SFN075712R1000	4	0.550
GAF750	LP750	1SFN076112R1000	4	0.950
GAF1250	LP1250	1SFN076412R1000	4	1.900
GAF1650, GAF2050	LP2050	1SFN076512R1000	4	2.900



LP2050

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Accessories for UA, UA..RA, GA75, GAE75, GAF contactors



ZA16

Contactor coils

For contactors	Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
	V 50 Hz	V 60 Hz				kg
UA16	24	24	ZA16	1SBN151410R8106	1	0.093
	110	110...120	ZA16	1SBN151410R8406	1	0.093
	220...230	230...240	ZA16	1SBN151410R8006	1	0.093
	230...240	240...260	ZA16	1SBN151410R8806	1	0.093
	380...400	400...415	ZA16	1SBN151410R8506	1	0.093
	400...415	415...440	ZA16	1SBN151410R8606	1	0.093
UA26, UA30	24	24	ZA40	1SBN152410R8106	1	0.148
	110	110...120	ZA40	1SBN152410R8406	1	0.148
	220...230	230...240	ZA40	1SBN152410R8006	1	0.148
	230...240	240...260	ZA40	1SBN152410R8806	1	0.148
	380...400	400...415	ZA40	1SBN152410R8506	1	0.148
	400...415	415...440	ZA40	1SBN152410R8606	1	0.148
UA50 ... UA75	24	24	ZA75	1SBN153510R8106	1	0.166
GA75	110	110...120	ZA75	1SBN153510R8406	1	0.166
	220...230	230...240	ZA75	1SBN153510R8006	1	0.166
	230...240	240...260	ZA75	1SBN153510R8806	1	0.166
	380...400	400...415	ZA75	1SBN153510R8506	1	0.166
	400...415	415...440	ZA75	1SBN153510R8606	1	0.166
UA95, UA110	24	24	ZA110	1SFN154310R8106	1	0.170
	110	110...120	ZA110	1SFN154310R8406	1	0.170
	220...230	230...240	ZA110	1SFN154310R8006	1	0.170
	230...240	240...260	ZA110	1SFN154310R8806	1	0.170
	380...400	400...415	ZA110	1SFN154310R8506	1	0.170
	400...415	415...440	ZA110	1SFN154310R8606	1	0.170
GAF460	-	24...60	ZAF460	1SFN155770R6806	1	0.525
	48...130	48...130	ZAF460	1SFN155770R6906	1	0.525
	100...250	100...250	ZAF460	1SFN155770R7006	1	0.525
	250...500	250...500	ZAF460	1SFN155770R7106	1	0.525
GAF750 ... AF1250	-	24...60	ZAF750	1SFN156170R6806	1	1.335
	48...130	48...130	ZAF750	1SFN156170R6906	1	1.335
	100...250	100...250	ZAF750	1SFN156170R7006	1	1.335
	250...500	250...500	ZAF750	1SFN156170R7106	1	1.335
GAF1650 ... GAF2050	100...250	100...250	ZAF1650[1]	1SFN156570R7026	1 set	0.900
			ZP1650[2]	1SFN166521R1070	1	0.300



ZAF1650

ZAF460, ZAF750 : printed circuit board included.
[1]One set of two coil.
[2]Printed circuit board.

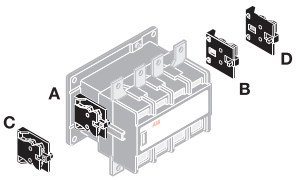
Main contact sets

The contact sets for 3-pole contactors consists of six fixed contacts, three moving contacts, springs and the required screws.

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
UA50	ZLU50	1SBN163502R1000	1	0.115
UA63	ZLU63	1SBN163702R1000	1	0.145
UA75	ZLU75	1SBN164102R1000	1	0.145
UA95	ZLU95	1SFN164302R1000	1	0.190
UA110	ZLU110	1SFN164502R1000	1	0.190

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Accessories for EK550, EK1000 4-pole contactors

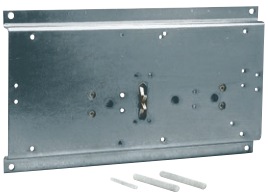


Mounting positions of the CAL16-11

Auxiliary contact blocks

For contactors	Number of blocks	Auxiliary contacts				Type	Order code	Pkg qty	Weight (1 pce) kg
2-pole auxiliary contacts N.O. + N.C.									
EK	1	1	1	–	–	CAL16-11A	SK829002-A	1	0.050
	1	1	1	–	–	CAL16-11B	SK829002-B	1	0.050
	1	1	1	–	–	CAL16-11C	SK829002-C	1	0.050
	1	1	1	–	–	CAL16-11D	SK829002-D	1	0.050
	1	1	–	–	1	CCL16-11E[1]	SK829002-E	1	0.050

[1]Mounting of CCL16-11E blocks does not allow an additional second block to be added on top of it.
All DC operated EK contactors are equipped with one CCL16-11E on the right side.

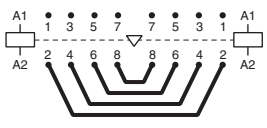


Mechanical interlock units

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical interlock unit for two horizontal mounted contactors				
EK550, EK1000	VH800	SK829070-F	1	6.000

Terminal shrouds

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
EK550	LT550-EK	SK178001-LB	1	0.190
EK1000	LT1000-EK	SK178001-MB	1	0.200



BSS550, BSS1000

Connection sets

For contactors	Type	Order code	Pkg qty	Weight (1 pce) kg
Mechanical and electrical interlock units for two horizontal mounted contactors				
EK550	BSS550	SK829090-E	1	3.300
EK1000	BSS1000	SK829090-H	1	5.500

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Accessories for EK550, EK1000 4-pole contactors



RC-EH

Surge suppressors for contactor coils

For contactors	Rated control circuit voltage Uc			Type	Order code	Pkg qty	Weight (1 pce)
	V	AC	DC				kg
EK550, EK1000	48...110	●	–	RC-EH800/110	SK829007-C	1	0.015
EK550, EK1000	24...125	–	●	RC-EH800/110	SK829007-C	1	0.015
EK550, EK1000	220...600	●	–	RC-EH800/600	SK829007-D	1	0.015



KZK

Main contact sets

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
EK550	KZK550	SK827204-B	1	2.400
EK1000	KZK1000	SK827204-F	1	3.000

Arc chutes

For contactors	Type	Order code	Pkg qty	Weight (1 pce)
				kg
EK550	KWK550	5223351-Z	1	3.170
EK1000	KWK1000	5223351-AN	1	3.170



KH800

Contactor coils for AC operated coil

For contactors	Rated control circuit voltage Uc[1]		Type	Order code	Pkg qty	Weight (1 pce)
	V 50 Hz	V 60 Hz				kg
EK550, EK1000	220	220...240	KH800	SK828100-EL	1	0.950
	220...230	230...255	KH800	SK828100-EM	1	0.950
	380...400	400...440	KH800	SK828100-ER	1	0.950
	400...415	-	KH800	SK828100-AR	1	0.950

[1]Other control voltages, see voltage code table.

Contactor coils for DC operated coil

For contactors	Rated control circuit voltage Uc[1]	Type	Order code	Pkg qty	Weight (1 pce)
	V DC				kg
EK550, EK1000	110	KP800	SK828150-DE	1 set	1.060
	125	KP800	SK828150-DU	1 set	1.060
	220	KP800	SK828150-DF	1 set	1.060

[1]Other control voltages, see voltage code table.

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B mini contactors





				Screw terminals			
AC Control supply							
3-pole contactors		Coil consumption 3.5 VA	Type	**B6**	**B7**	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 VA	Type	**-**	**-**	**VB6** **VB6A**[2]	**VB7** **VB7A**[2]
4-pole contactors		Coil consumption 3.5 VA	Type	**B6**	**B7**	[3]	[3]
DC Control supply							
3-pole contactors		Coil consumption 3.5 W	Type	**BC6**	**BC7** **B7D**[1]	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 W	Type	**-**	**-**	**VBC6** **VBC6A**[2]	**VBC7** **VBC7A**[2]
3-pole interface contactors		Coil consumption 1.4 ... 2.8 W	Type	**BC6** **B6S**[1]	**BC7** **B7S**[1]	[3]	[3]
4-pole contactors		Coil consumption 3.5 W	Type	**BC6**	**B7D**	[3]	[3]
IEC	Rated operational power AC-3	220-230-240 V	kW	2.2	3	2.2	3
		380-400 V	kW	4	5.5	4	5.5
	Rated operational current AC-1	400 V, θ ≤ 40 °C	A	20	20	20	20
UL/ CSA	3-phase motor rating	220-240 V AC	hp	2	3	2	3
		440-480 V AC	hp	3	5	3	5
	General use rating		A	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)

Main accessories		
Auxiliary contact blocks	Front mounting	CAF6
	Side mounting	CA6 -
Connection sets	For reversing contactors	BSM6-30
Surge suppressors	Varistor (AC/DC)	RV-BC6

Overload relays		
Thermal overload relays Thermal and phase failure protection, with single setup possible	Class 10	T16
Electronic overload relays With single setup possible	Class 10E, 20E, 30E	E16DU

Manual motor starters		
Thermal / magnetic protection	Class 10	MS116, MS132
Magnetic only types		MO132
Connecting link to manual motor starters		BEA7/132

K mini contactor relays



				Screw terminals
AC Control supply				
4-pole contactor relays		Coil consumption 3.5 VA	Type	**K6**
DC Control supply				
4-pole contactor relays		Coil consumption 3.5 W	Type	**KC6**
4-pole interface contactor relays		Coil consumption 1.4 ... 2.8 W	Type	**KC6, K6S**[1]
IEC	Rated operational current AC-15	220-230-240 V	A	4
		380-400 V	A	3
	Rated operational current DC-13	24 V	A	2.5

Main accessories		
Auxiliary contact blocks	Front mounting	CAF6
	Side mounting	CA6-11K

[1]With integrated surge suppressor
[2]With safety blocking function
[3]Please visit: https://new.abb.com/low-voltage/products/motor-protection/3-pole-contactors-and-overload-relays-for-motor-starting/mini-contactors

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B mini contactors




					Soldering pins			
AC Control supply								
3-pole contactors		Coil consumption 3.5 VA		Type	**B6...P**	**B7...P**	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 VA		Type	**-**	**-**	**VB6...P** **VB6A...P**[2]	**VB7...P** **VB7A...P**[2]
4-pole contactors		Coil consumption 3.5 VA		Type	[3]	[3]	[3]	[3]
DC Control supply								
3-pole contactors		Coil consumption 3.5 W		Type	**BC6...P**	**BC7...P** **B7D...P**[1]	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 W		Type	**-**	**-**	**VBC6...P** **VBC6A...P**[2]	**VBC7...P** **VBC7A...P**[2]
3-pole interface contactors		Coil consumption 1.4 ... 2.8 W		Type	**BC6...P**	**BC7...P**	[3]	[3]
4-pole contactors		Coil consumption 3.5 W		Type	[3]	[3]	[3]	[3]
IEC	Rated operational power AC-3	220-230-240 V		kW	2.2	3	2.2	3
		380-400 V		kW	4	5.5	4	5.5
	Rated operational current AC-1	400 V, θ ≤ 40 °C		A	12	12	12	12
UL/ CSA	3-phase motor rating	220-240 V AC		hp	2	3	2	3
		440-480 V AC		hp	3	5	3	5
	General use rating			A	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)
Main accessories								
Auxiliary contact blocks		Front mounting			-			
		Side mounting			CA6-11K-P		-	
Connection sets		For reversing contactors			-			
Surge suppressors		Varistor (AC/DC)			-			
Overload relays								
Thermal overload relays Thermal and phase failure protection, with single setup possible			Class 10		-			
Electronic overload relays With single setup possible			Class 10E, 20E, 30E		-			
Manual motor starters								
Thermal / magnetic protection			Class 10		MS116, MS132			
Magnetic only types					MO132			
Connecting link to manual motor starters					-			

K mini contactor relays



					Soldering pins
AC Control supply					
4-pole contactor relays		Coil consumption 3.5 VA		Type	**K6...P**
DC Control supply					
4-pole contactor relays		Coil consumption 3.5 W		Type	**KC6...P**
4-pole interface contactor relays		Coil consumption 1.4 ... 2.8 W		Type	**KC6...P**
IEC	Rated operational current AC-15	220-230-240 V		A	4
		380-400 V		A	3
	Rated operational current DC-13	24 V		A	2.5
Main accessories					
Auxiliary contact blocks		Front mounting			-
		Side mounting			CA6-11K-P

[1]With integrated surge suppressor
[2]With safety blocking function
[3]Please visit: https://new.abb.com/low-voltage/products/motor-protection/3-pole-contactors-and-overload-relays-for-motor-starting/mini-contactors

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B mini contactors





				Flat pins			
AC Control supply							
3-pole contactors		Coil consumption 3.5 VA	Type	**B6...F**	**B7...F**	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 VA	Type	**-**	**-**	**VB6...F** **VB6A...F²**	**VB7...F** **VB7A...F²**
4-pole contactors		Coil consumption 3.5 VA	Type	³	³		
DC Control supply							
3-pole contactors		Coil consumption 3.5 W	Type	**BC6...F**	**BC7...F** **B7D...F¹**	**-**	**-**
3-pole reversing contactors		Coil consumption 3.5 W	Type	**-**	**-**	**VBC6...F** **VBC6A...F²**	**VBC7...F** **VBC7A...F²**
3-pole interface contactors		Coil consumption 1.4 ... 2.8 W	Type	**BC6...F**	**BC7...F**	**-**	**-**
4-pole contactors		Coil consumption 3.5 W	Type	³	³	-	-
IEC	Rated operational power AC-3	220-230-240 V	kW	2.2	3	2.2	3
		380-400 V	kW	4	5.5	4	5.5
	Rated operational current AC-1	400 V, θ ≤ 40 °C	A	20	20	20	20
UL/ CSA	3-phase motor rating	220-240 V AC	hp	2	3	2	3
		440-480 V AC	hp	3	5	3	5
	General use rating		A	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)
Main accessories							
Auxiliary contact blocks		Front mounting		-			
		Side mounting		CA6-11K-F		-	
Connection sets		For reversing contactors		-			
Surge suppressors		Varistor (AC/DC)		-			
Overload relays							
Thermal overload relays Thermal and phase failure protection, with single setup possible			Class 10	-			
Electronic overload relays With single setup possible			Class 10E, 20E, 30E	-			
Manual motor starters							
Thermal / magnetic protection			Class 10	MS116, MS132			
Magnetic only types				MO132			
Connecting link to manual motor starters				-			

K mini contactor relays



				Flat pins
AC Control supply				
4-pole contactor relays		Coil consumption 3.5 VA	Type	**K6...F**
DC Control supply				
4-pole contactor relays		Coil consumption 3.5 W	Type	**KC6...F**
4-pole interface contactor relays		Coil consumption 1.4 ... 2.8 W	Type	**KC6...F**
IEC	Rated operational current AC-15	220-230-240 V	A	4
		380-400 V	A	3
	Rated operational current DC-13	24 V	A	2.5
Main accessories				
Auxiliary contact blocks		Front mounting		-
		Side mounting		CA6-11K-F

[1]With integrated surge suppressor
[2]With safety blocking function
[3]Please visit: https://new.abb.com/low-voltage/products/motor-protection/3-pole-contactors-and-overload-relays-for-motor-starting/mini-contactors

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3-pole mini contactors – with screw terminals

B6, B7



B6-30-10



B7-30-10

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating	50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
B6 mini contactors											
4	20	3	300 V / 12 A	24	24	1	0	B6-30-10-01	GJL1211001R0101	10	0.175
						0	1	B6-30-01-01	GJL1211001R0011	10	0.175
				42	42	1	0	B6-30-10-02	GJL1211001R0102	10	0.175
						0	1	B6-30-01-02	GJL1211001R0012	10	0.175
				48	48	1	0	B6-30-10-03	GJL1211001R0103	10	0.175
						0	1	B6-30-01-03	GJL1211001R0013	10	0.175
				110 ... 127	110 ... 127	1	0	B6-30-10-84	GJL1211001R8104	10	0.175
						0	1	B6-30-01-84	GJL1211001R8014	10	0.175
				220 ... 240	220 ... 240	1	0	B6-30-10-80	GJL1211001R8100	10	0.175
						0	1	B6-30-01-80	GJL1211001R8010	10	0.175
				380 ... 415	380 ... 415	1	0	B6-30-10-85	GJL1211001R8105	10	0.175
						0	1	B6-30-01-85	GJL1211001R8015	10	0.175
B7 mini contactors											
5.5	20	5	600 V / 16 A	24	24	1	0	B7-30-10-01	GJL1311001R0101	10	0.175
						0	1	B7-30-01-01	GJL1311001R0011	10	0.175
				42	42	1	0	B7-30-10-02	GJL1311001R0102	10	0.175
						0	1	B7-30-01-02	GJL1311001R0012	10	0.175
				48	48	1	0	B7-30-10-03	GJL1311001R0103	10	0.175
						0	1	B7-30-01-03	GJL1311001R0013	10	0.175
				110 ... 127	110 ... 127	1	0	B7-30-10-84	GJL1311001R8104	10	0.175
						0	1	B7-30-01-84	GJL1311001R8014	10	0.175
				220 ... 240	220 ... 240	1	0	B7-30-10-80	GJL1311001R8100	10	0.175
						0	1	B7-30-01-80	GJL1311001R8010	10	0.175
				380 ... 415	380 ... 415	1	0	B7-30-10-85	GJL1311001R8105	10	0.175
						0	1	B7-30-01-85	GJL1311001R8015	10	0.175

Other types on request

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3-pole mini contactors – with screw terminals

BC6, BC7, B7D



BC6-30-10



BC7-30-10

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
BC6 mini contactors										
4	20	3	300 V / 12 A	12	1	0	BC6-30-10-07	GJL1213001R0107	10	0.175
					0	1	BC6-30-01-07	GJL1213001R0017	10	0.175
				24	1	0	BC6-30-10-01	GJL1213001R0101	10	0.175
					0	1	BC6-30-01-01	GJL1213001R0011	10	0.175
				48	1	0	BC6-30-10-16	GJL1213001R1106	10	0.175
					0	1	BC6-30-01-16	GJL1213001R1016	10	0.175
				60	1	0	BC6-30-10-03	GJL1213001R0103	10	0.175
					0	1	BC6-30-01-03	GJL1213001R0013	10	0.175
				110 ... 125	1	0	BC6-30-10-04	GJL1213001R0104	10	0.175
					0	1	BC6-30-01-04	GJL1213001R0014	10	0.175
				220 ... 240	1	0	BC6-30-10-05	GJL1213001R0105	10	0.175
					0	1	BC6-30-01-05	GJL1213001R0015	10	0.175
BC7 mini contactors										
5.5	20	5	600 V / 16 A	12	1	0	BC7-30-10-07	GJL1313001R0107	10	0.175
					0	1	BC7-30-01-07	GJL1313001R0017	10	0.175
				24	1	0	BC7-30-10-01	GJL1313001R0101	10	0.175
					0	1	BC7-30-01-01	GJL1313001R0011	10	0.175
				48	1	0	BC7-30-10-16	GJL1313001R1106	10	0.175
					0	1	BC7-30-01-16	GJL1313001R1016	10	0.175
				60	1	0	BC7-30-10-03	GJL1313001R1103	10	0.175
					0	1	BC7-30-01-03	GJL1313001R0013	10	0.175
				110 ... 125	1	0	BC7-30-10-04	GJL1313001R0104	10	0.175
					0	1	BC7-30-01-04	GJL1313001R0014	10	0.175
				220 ... 240	1	0	BC7-30-10-05	GJL1313001R0105	10	0.175
					0	1	BC7-30-01-05	GJL1313001R0015	10	0.175
B7D mini contactors with integrated suppressor diode										
5.5	20	5	600 V / 16 A	24	1	0	B7D-30-10-01	GJL1317001R0101	10	0.175
					0	1	B7D-30-01-01	GJL1317001R0011	10	0.175
				220	1	0	B7D-30-10-05	GJL1317001R0105	10	0.175
					0	1	B7D-30-01-05	GJL1317001R0015	10	0.175

Other types on request

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3-pole mini reversing contactors – with screw terminals

VB6, VB7



VB7-30-10

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating								
power 400 V AC-3	current θ ≤ 40 °C AC-1			50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
VB6 mini reversing contactors											
4	20	3	300 V / 12 A	24	24	1	0	VB6-30-10-01	GJL1211901R0101	5	0.355
						0	1	VB6-30-01-01	GJL1211901R0011	5	0.355
				42	42	1	0	VB6-30-10-02	GJL1211901R0102	5	0.355
						0	1	VB6-30-01-02	GJL1211901R0012	5	0.355
				48	48	1	0	VB6-30-10-03	GJL1211901R0103	5	0.355
						0	1	VB6-30-01-03	GJL1211901R0013	5	0.355
				110 ... 127	110 ... 127	1	0	VB6-30-10-84	GJL1211901R8104	5	0.355
						0	1	VB6-30-01-84	GJL1211901R8014	5	0.355
				220 ... 240	220 ... 240	1	0	VB6-30-10-80	GJL1211901R8100	5	0.355
						0	1	VB6-30-01-80	GJL1211901R8010	5	0.355
				380 ... 415	380 ... 415	1	0	VB6-30-10-85	GJL1211901R8105	5	0.355
						0	1	VB6-30-01-85	GJL1211901R8015	5	0.355
VB7 mini reversing contactors											
5.5	20	5	600 V / 16 A	24	24	1	0	VB7-30-10-01	GJL1311901R0101	5	0.355
						0	1	VB7-30-01-01	GJL1311901R0011	5	0.355
				42	42	1	0	VB7-30-10-02	GJL1311901R0102	5	0.355
						0	1	VB7-30-01-02	GJL1311901R0012	5	0.355
				48	48	1	0	VB7-30-10-03	GJL1311901R0103	5	0.355
						0	1	VB7-30-01-03	GJL1311901R0013	5	0.355
				110 ... 127	110 ... 127	1	0	VB7-30-10-84	GJL1311901R8104	5	0.355
						0	1	VB7-30-01-84	GJL1311901R8014	5	0.355
				220 ... 240	220 ... 240	1	0	VB7-30-10-80	GJL1311901R8100	5	0.355
						0	1	VB7-30-01-80	GJL1311901R8010	5	0.355
				380 ... 415	380 ... 415	1	0	VB7-30-10-85	GJL1311901R8105	5	0.355
						0	1	VB7-30-01-85	GJL1311901R8015	5	0.355

Other types on request

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3-pole mini reversing contactors – with screw terminals

VBC6, VBC7



VBC6-30-10



VBC7-30-10

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating							
kW	A	hp		V DC						kg
VBC6 mini reversing contactors										
4	20	3	300 V / 12 A	12	1	0	VBC6-30-10-07	GJL1213901R0107	5	0.355
					0	1	VBC6-30-01-07	GJL1213901R0017	5	0.355
				24	1	0	VBC6-30-10-01	GJL1213901R0101	5	0.355
					0	1	VBC6-30-01-01	GJL1213901R0011	5	0.355
				48	1	0	VBC6-30-10-16	GJL1213901R1106	5	0.355
					0	1	VBC6-30-01-16	GJL1213901R1016	5	0.355
				60	1	0	VBC6-30-10-03	GJL1213901R0103	5	0.355
					0	1	VBC6-30-01-03	GJL1213901R0013	5	0.355
				110 ...	1	0	VBC6-30-10-04	GJL1213901R0104	5	0.355
				125	0	1	VBC6-30-01-04	GJL1213901R0014	5	0.355
				220 ...	1	0	VBC6-30-10-05	GJL1213901R0105	5	0.355
				240	0	1	VBC6-30-01-05	GJL1213901R0015	5	0.355
VBC7 mini reversing contactors										
5.5	20	5	600 V / 16 A	12	1	0	VBC7-30-10-07	GJL1313901R0107	5	0.355
					0	1	VBC7-30-01-07	GJL1313901R0017	5	0.355
				24	1	0	VBC7-30-10-01	GJL1313901R0101	5	0.355
					0	1	VBC7-30-01-01	GJL1313901R0011	5	0.355
				48	1	0	VBC7-30-10-16	GJL1313901R1106	5	0.355
					0	1	VBC7-30-01-16	GJL1313901R1016	5	0.355
				60	1	0	VBC7-30-10-03	GJL1313901R0103	5	0.355
					0	1	VBC7-30-01-03	GJL1313901R0013	5	0.355
				110 ...	1	0	VBC7-30-10-04	GJL1313901R0104	5	0.355
				125	0	1	VBC7-30-01-04	GJL1313901R0014	5	0.355
				220 ...	1	0	VBC7-30-10-05	GJL1313901R0105	5	0.355
				240	0	1	VBC7-30-01-05	GJL1313901R0015	5	0.355

Other types on request

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3-pole mini reversing contactors – with screw terminals

VB6A, VB7A



VB6A-30-10



VB7A-30-10

4 to 5.5 kW - AC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating								
power 400 V AC-3	current θ ≤ 40 °C AC-1			50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
VB6A mini reversing contactors with safety blocking function											
4	20	3	300 V / 12 A	24	24	1	0	VB6A-30-10-01	GJL1211911R0101	5	0.355
						0	1	VB6A-30-01-01	GJL1211911R0011	5	0.355
				42	42	1	0	VB6A-30-10-02	GJL1211911R0102	5	0.355
						0	1	VB6A-30-01-02	GJL1211911R0012	5	0.355
				48	48	1	0	VB6A-30-10-03	GJL1211911R0103	5	0.355
						0	1	VB6A-30-01-03	GJL1211911R0013	5	0.355
				110 ...	110 ...	1	0	VB6A-30-10-84	GJL1211911R8104	5	0.355
				127	127	0	1	VB6A-30-01-84	GJL1211911R8014	5	0.355
				220 ...	220 ...	1	0	VB6A-30-10-80	GJL1211911R8100	5	0.355
				240	240	0	1	VB6A-30-01-80	GJL1211911R8010	5	0.355
				380 ...	380 ...	1	0	VB6A-30-10-85	GJL1211911R8105	5	0.355
				415	415	0	1	VB6A-30-01-85	GJL1211911R8015	5	0.355
VB7A mini reversing contactors with safety blocking function											
5.5	20	5	600 V / 16 A	24	24	1	0	VB7A-30-10-01	GJL1311911R0101	5	0.355
						0	1	VB7A-30-01-01	GJL1311911R0011	5	0.355
				42	42	1	0	VB7A-30-10-02	GJL1311911R0102	5	0.355
						0	1	VB7A-30-01-02	GJL1311911R0012	5	0.355
				48	48	1	0	VB7A-30-10-03	GJL1311911R0103	5	0.355
						0	1	VB7A-30-01-03	GJL1311911R0013	5	0.355
				110 ...	110 ...	1	0	VB7A-30-10-84	GJL1311911R8104	5	0.355
				127	127	0	1	VB7A-30-01-84	GJL1311911R8014	5	0.355
				220 ...	220 ...	1	0	VB7A-30-10-80	GJL1311911R8100	5	0.355
				240	240	0	1	VB7A-30-01-80	GJL1311911R8010	5	0.355
				380 ...	380 ...	1	0	VB7A-30-10-85	GJL1311911R8105	5	0.355
				415	415	0	1	VB7A-30-01-85	GJL1311911R8015	5	0.355

Other types on request

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3-pole mini reversing contactors – with screw terminals

VBC6A, VBC7A



VBC6A-30-10



VBC7A-30-10

4 to 5.5 kW - DC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating							
kW	A	hp		V DC						kg
VBC6A mini reversing contactors with safety blocking function										
4	20	3	300 V / 12 A	12	1	0	VBC6A-30-10-07	GJL1213911R0107	5	0.355
					0	1	VBC6A-30-01-07	GJL1213911R0017	5	0.355
				24	1	0	VBC6A-30-10-01	GJL1213911R0101	5	0.355
					0	1	VBC6A-30-01-01	GJL1213911R0011	5	0.355
				48	1	0	VBC6A-30-10-16	GJL1213911R1106	5	0.355
					0	1	VBC6A-30-01-16	GJL1213911R1016	5	0.355
				60	1	0	VBC6A-30-10-03	GJL1213911R0103	5	0.355
					0	1	VBC6A-30-01-03	GJL1213911R0013	5	0.355
				110 ... 125	1	0	VBC6A-30-10-04	GJL1213911R0104	5	0.355
					0	1	VBC6A-30-01-04	GJL1213911R0014	5	0.355
				220 ... 240	1	0	VBC6A-30-10-05	GJL1213911R0105	5	0.355
					0	1	VBC6A-30-01-05	GJL1213911R0015	5	0.355
VBC7A mini reversing contactors with safety blocking function										
5.5	20	5	600 V / 16 A	12	1	0	VBC7A-30-10-07	GJL1313911R0107	5	0.355
					0	1	VBC7A-30-01-07	GJL1313911R0017	5	0.355
				24	1	0	VBC7A-30-10-01	GJL1313911R0101	5	0.355
					0	1	VBC7A-30-01-01	GJL1313911R0011	5	0.355
				48	1	0	VBC7A-30-10-16	GJL1313911R1106	5	0.355
					0	1	VBC7A-30-01-16	GJL1313911R0016	5	0.355
				60	1	0	VBC7A-30-10-03	GJL1313911R0103	5	0.355
					0	1	VBC7A-30-01-03	GJL1313911R0013	5	0.355
				110 ... 125	1	0	VBC7A-30-10-04	GJL1313911R0104	5	0.355
					0	1	VBC7A-30-01-04	GJL1313911R0014	5	0.355
				220 ... 240	1	0	VBC7A-30-10-05	GJL1313911R0105	5	0.355
					0	1	VBC7A-30-01-05	GJL1313911R0015	5	0.355

Other types on request

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3-pole mini contactors – with screw terminals

BC6, BC7



BC6-30-10



BC7-30-10

4 to 5.5 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating							
kW	A	hp		V DC						kg
DC operation 24 V / 1.4 W										
4	20	3	300 V / 12 A	24	1	0	BC6-30-10-1.4-81	GJL1213001R8101	10	0.175
					0	1	BC6-30-01-1.4-81	GJL1213001R8011	10	0.175
5.5	20	5	600 V / 16 A	24	1	0	BC7-30-10-1.4-81	GJL1313001R8101	10	0.175
					0	1	BC7-30-01-1.4-81	GJL1313001R8011	10	0.175
DC operation 17 ... 32 V / 2.4 W										
4	20	3	300 V / 12 A	17 ... 32	1	0	BC6-30-10-2.4-51	GJL1213001R5101	10	0.175
					0	1	BC6-30-01-2.4-51	GJL1213001R5011	10	0.175
5.5	20	5	600 V / 16 A	17 ... 32	1	0	BC7-30-10-2.4-51	GJL1313001R5101	10	0.175
					0	1	BC7-30-01-2.4-51	GJL1313001R5011	10	0.175

Connection to PLCs with integrated protective circuit

DC operation 24 V / 1.7 W										
4	20	3	300 V / 12 A	24	1	0	B6S-30-10-1.7-71	GJL1213001R7101	10	0.175
					0	1	B6S-30-01-1.7-71	GJL1213001R7011	10	0.175
5.5	20	5	600 V / 16 A	24	1	0	B7S-30-10-1.7-71	GJL1313001R7101	10	0.175
					0	1	B7S-30-01-1.7-71	GJL1313001R7011	10	0.175
DC operation 17 ... 32 V / 2.8 W										
4	20	3	300 V / 12 A	17 ... 32	1	0	B6S-30-10-2.8-72	GJL1213001R7102	10	0.175
					0	1	B6S-30-01-2.8-72	GJL1213001R7012	10	0.175
5.5	20	5	600 V / 16 A	17 ... 32	1	0	B7S-30-10-2.8-72	GJL1313001R7102	10	0.175
					0	1	B7S-30-01-2.8-72	GJL1313001R7012	10	0.175

Other types on request

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4-pole mini contactors – with screw terminals

B6, B7



B6-22-00

4 to 5.5 kW - AC operated

IEC Rated operational current θ ≤ 40 °C AC-1 A	UL/CSA General use rating	Rated control circuit voltage Uc 50/60 Hz V AC	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce) kg
4 N.O. main poles								
20	300 V / 12 A	24	0	0	B6-40-00-01	GJL1211201R0001	10	0.175
		42	0	0	B6-40-00-02	GJL1211201R0002	10	0.175
		48	0	0	B6-40-00-03	GJL1211201R0003	10	0.175
		110 ... 127	0	0	B6-40-00-84	GJL1211201R8004	10	0.175
		220 ... 240	0	0	B6-40-00-80	GJL1211201R8000	10	0.175
20	600 V / 16 A	24	0	0	B7-40-00-01	GJL1311201R0001	10	0.175
		42	0	0	B7-40-00-02	GJL1311201R0002	10	0.175
		48	0	0	B7-40-00-03	GJL1311201R0003	10	0.175
		110 ... 127	0	0	B7-40-00-84	GJL1311201R8004	10	0.175
		220 ... 240	0	0	B7-40-00-80	GJL1311201R8000	10	0.175
2 N.O. + 2 N.C. main poles								
20	300 V / 12 A	24	0	0	B6-22-00-01	GJL1211501R0001	10	0.175
		42	0	0	B6-22-00-02	GJL1211501R0002	10	0.175
		48	0	0	B6-22-00-03	GJL1211501R0003	10	0.175
		110 ... 127	0	0	B6-22-00-84	GJL1211501R8004	10	0.175
		220 ... 240	0	0	B6-22-00-80	GJL1211501R8000	10	0.175
20	600 V / 16 A	24	0	0	B7-22-00-01	GJL1311501R0001	10	0.175
		42	0	0	B7-22-00-02	GJL1311501R0002	10	0.175
		48	0	0	B7-22-00-03	GJL1311501R0003	10	0.175
		110 ... 127	0	0	B7-22-00-84	GJL1311501R8004	10	0.175
		220 ... 240	0	0	B7-22-00-80	GJL1311501R8000	10	0.175

Other types on request

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4-pole mini contactors – with screw terminals

B6, B7, B7D



BC6-22-00

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp		V DC						kg
4 N.O. main poles										
4	20	3	300 V / 12 A	12	0	0	BC6-40-00-07	GJL1213201R0007	10	0.175
				24	0	0	BC6-40-00-01	GJL1213201R0001	10	0.175
				48	0	0	BC6-40-00-16	GJL1213201R1006	10	0.175
				60	0	0	BC6-40-00-03	GJL1213201R0003	10	0.175
				110 ... 125	0	0	BC6-40-00-04	GJL1213201R0004	10	0.175
				220 ... 240	0	0	BC6-40-00-05	GJL1213201R0005	10	0.175
5.5	20	5	600 V / 16 A	12	0	0	BC7-40-00-07	GJL1313201R0007	10	0.175
				24	0	0	BC7-40-00-01	GJL1313201R0001	10	0.175
				48	0	0	BC7-40-00-16	GJL1313201R1006	10	0.175
				110 ... 125	0	0	BC7-40-00-04	GJL1313201R0004	10	0.175
				220 ... 240	0	0	BC7-40-00-05	GJL1313201R0005	10	0.175
2 N.O. + 2 N.C. main poles										
4	20	3	300 V / 12 A	12	0	0	BC6-22-00-07	GJL1213501R0007	10	0.175
				24	0	0	BC6-22-00-01	GJL1213501R0001	10	0.175
				48	0	0	BC6-22-00-16	GJL1213501R1006	10	0.175
				60	0	0	BC6-22-00-03	GJL1213501R0003	10	0.175
				110 ... 125	0	0	BC6-22-00-04	GJL1213501R0004	10	0.175
				220 ... 240	0	0	BC6-22-00-05	GJL1213501R0005	10	0.175
4 N.O. main poles with integrated suppressor diode										
4	20	5	600 V	24	0	0	B7D-40-00-05	GJL1317201R0005	10	0.175
				220 ... 240	0	0	B7D-40-00-01	GJL1317201R0001	10	0.175

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4-pole mini contactor relays – with screw terminals

K6



K6-22Z



K6-31Z

AC operated

Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
50 Hz V AC	60 Hz V AC				kg
2 N.O. + 2 N.C. main pole					
24	24	K6-22Z-01	GJH1211001R0221	10	0.175
42	42	K6-22Z-02	GJH1211001R0222	10	0.175
48	48	K6-22Z-03	GJH1211001R0223	10	0.175
110 ...127	110 ...127	K6-22Z-84	GJH1211001R8224	10	0.175
220 ... 240	220 ... 240	K6-22Z-80	GJH1211001R8220	10	0.175
380 ... 415	380 ... 415	K6-22Z-85	GJH1211001R8225	10	0.175
3 N.O. + 1 N.C. main poles					
24	24	K6-31Z-01	GJH1211001R0311	10	0.175
42	42	K6-31Z-02	GJH1211001R0312	10	0.175
48	48	K6-31Z-03	GJH1211001R0313	10	0.175
110 ...127	110 ...127	K6-31Z-84	GJH1211001R8314	10	0.175
220 ... 240	220 ... 240	K6-31Z-80	GJH1211001R8310	10	0.175
380 ... 415	380 ... 415	K6-31Z-85	GJH1211001R8315	10	0.175
4 N.O. main poles					
24	24	K6-40E-01	GJH1211001R0401	10	0.175
42	42	K6-40E-02	GJH1211001R0402	10	0.175
48	48	K6-40E-03	GJH1211001R0403	10	0.175
110 ...127	110 ...127	K6-40E-84	GJH1211001R8404	10	0.175
220 ... 240	220 ... 240	K6-40E-80	GJH1211001R8400	10	0.175
380 ... 415	380 ... 415	K6-40E-85	GJH1211001R8405	10	0.175

Other types on request.

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4-pole mini contactor relays – with screw terminals
KC6



KC6-22Z

DC operated

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
2 N.O. + 2 N.C. main poles				
12	KC6-22Z-07	GJH1213001R0227	10	0.175
24	KC6-22Z-01	GJH1213001R0221	10	0.175
48	KC6-22Z-16	GJH1213001R1226	10	0.175
60	KC6-22Z-03	GJH1213001R0223	10	0.175
110 ... 125	KC6-22Z-04	GJH1213001R0224	10	0.175
220 ... 240	KC6-22Z-05	GJH1213001R0225	10	0.175
3 N.O. + 1 N.C. main poles				
12	KC6-31Z-07	GJH1213001R0317	10	0.175
24	KC6-31Z-01	GJH1213001R0311	10	0.175
48	KC6-31Z-16	GJH1213001R1316	10	0.175
60	KC6-31Z-03	GJH1213001R0313	10	0.175
110 ... 125	KC6-31Z-04	GJH1213001R0314	10	0.175
220 ... 240	KC6-31Z-05	GJH1213001R0315	10	0.175
4 N.O. main poles				
12	KC6-40E-07	GJH1213001R0407	10	0.175
24	KC6-40E-01	GJH1213001R0401	10	0.175
48	KC6-40E-16	GJH1213001R1406	10	0.175
60	KC6-40E-03	GJH1213001R0403	10	0.175
110 ... 125	KC6-40E-04	GJH1213001R0404	10	0.175
220 ... 240	KC6-40E-05	GJH1213001R0405	10	0.175

Other types on request

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4-pole mini contactor relays – with screw terminals
KC6



KC6-31Z

DC operated - low consumption

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
DC operation 24 V / 1.4 W				
24	KC6-31Z-1.4-81	GJH1213001R8311	10	0.175
24	KC6-40E-1.4-81	GJH1213001R8401	10	0.175
DC operation 17 ... 32 V / 2.4 W				
17 ... 32	KC6-31Z-2.4-51	GJH1213001R5311	10	0.175
17 ... 32	KC6-40E-2.4-51	GJH1213001R5401	10	0.175

Connection to PLCs with integrated protective circuit

DC operation 24 V / 1.7 W				
24	K6S-22Z-1.7-71	GJH1213001R7221	10	0.175
24	K6S-31Z-1.7-71	GJH1213001R7311	10	0.175
24	K6S-40E-1.7-71	GJH1213001R7401	10	0.175
DC operation 17 ... 32 V / 2.8 W				
17 ... 32	K6S-22Z-2.8-72	GJH1213001R7222	10	0.175
17 ... 32	K6S-31Z-2.8-72	GJH1213001R7312	10	0.175
17 ... 32	K6S-40E-2.8-72	GJH1213001R7402	10	0.175

Other types on request

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3-pole mini contactors – with soldering pins

B6, B7



B6-30-10-P



B7-30-10-P

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating								
power 400 V AC-3	current θ ≤ 40 °C AC-1			50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
B6 mini contactors											
4	12	3	300 V / 12 A	24	24	1	0	B6-30-10-P-01	GJL1211009R0101	10	0.170
						0	1	B6-30-01-P-01	GJL1211009R0011	10	0.170
				42	42	1	0	B6-30-10-P-02	GJL1211009R0102	10	0.170
						0	1	B6-30-01-P-02	GJL1211009R0012	10	0.170
				48	48	1	0	B6-30-10-P-03	GJL1211009R0103	10	0.170
						0	1	B6-30-01-P-03	GJL1211009R0013	10	0.170
				110 ... 127	110 ... 127	1	0	B6-30-10-P-84	GJL1211009R8104	10	0.170
						0	1	B6-30-01-P-84	GJL1211009R8014	10	0.170
				220 ... 240	220 ... 240	1	0	B6-30-10-P-80	GJL1211009R8100	10	0.170
						0	1	B6-30-01-P-80	GJL1211009R8010	10	0.170
				380 ... 415	380 ... 415	1	0	B6-30-10-P-85	GJL1211009R8105	10	0.170
						0	1	B6-30-01-P-85	GJL1211009R8015	10	0.170
B7 mini contactors											
5.5	12	5	600 V / 16 A	24	24	1	0	B7-30-10-P-01	GJL1311009R0101	10	0.170
						0	1	B7-30-01-P-01	GJL1311009R0011	10	0.170
				42	42	1	0	B7-30-10-P-02	GJL1311009R0102	10	0.170
						0	1	B7-30-01-P-02	GJL1311009R0012	10	0.170
				48	48	1	0	B7-30-10-P-03	GJL1311009R0103	10	0.170
						0	1	B7-30-01-P-03	GJL1311009R0013	10	0.170
				110 ... 127	110 ... 127	1	0	B7-30-10-P-84	GJL1311009R8104	10	0.170
						0	1	B7-30-01-P-84	GJL1311009R8014	10	0.170
				220 ... 240	220 ... 240	1	0	B7-30-10-P-80	GJL1311009R8100	10	0.170
						0	1	B7-30-01-P-80	GJL1311009R8010	10	0.170
				380 ... 415	380 ... 415	1	0	B7-30-10-P-85	GJL1311009R8105	10	0.170
						0	1	B7-30-01-P-85	GJL1311009R8015	10	0.170

Other types on request

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3-pole mini contactors – with soldering pins

BC6, BC7



BC7-30-10-P

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
BC6 mini contactors with 3 N.O. main poles										
4	12	3	300 V / 12 A	12	1	0	BC6-30-10-P-07	GJL1213009R0107	10	0.170
					0	1	BC6-30-01-P-07	GJL1213009R0017	10	0.170
				24	1	0	BC6-30-10-P-01	GJL1213009R0101	10	0.170
					0	1	BC6-30-01-P-01	GJL1213009R0011	10	0.170
				48	1	0	BC6-30-10-P-16	GJL1213009R1106	10	0.170
					0	1	BC6-30-01-P-16	GJL1213009R1016	10	0.170
				60	1	0	BC6-30-10-P-03	GJL1213009R0103	10	0.170
					0	1	BC6-30-01-P-03	GJL1213009R0013	10	0.170
				110 ... 125	1	0	BC6-30-10-P-04	GJL1213009R0104	10	0.170
					0	1	BC6-30-01-P-04	GJL1213009R0014	10	0.170
				220 ... 240	1	0	BC6-30-10-P-05	GJL1213009R0105	10	0.170
					0	1	BC6-30-01-P-05	GJL1213009R0015	10	0.170
BC7 mini contactors with 3 N.O. main poles										
5.5	12	5	600 V / 16 A	12	1	0	BC7-30-10-P-07	GJL1313009R0107	10	0.170
					0	1	BC7-30-01-P-07	GJL1313009R0017	10	0.170
				24	1	0	BC7-30-10-P-01	GJL1313009R0101	10	0.170
					0	1	BC7-30-01-P-01	GJL1313009R0011	10	0.170
				48	1	0	BC7-30-10-P-16	GJL1313009R1106	10	0.170
					0	1	BC7-30-01-P-16	GJL1313009R1016	10	0.170
				60	1	0	BC7-30-10-P-03	GJL1313009R0103	10	0.170
					0	1	BC7-30-01-P-03	GJL1313009R0013	10	0.170
				110 ... 125	1	0	BC7-30-10-P-04	GJL1313009R0104	10	0.170
					0	1	BC7-30-01-P-04	GJL1313009R0014	10	0.170
				220 ... 240	1	0	BC7-30-10-P-05	GJL1313009R0105	10	0.170
					0	1	BC7-30-01-P-05	GJL1313009R0015	10	0.170
BC6 mini contactors 2 N.O. + 1 N.C. main poles										
4	12	3	300 V / 12 A	24	1	0	BC6-21-10-P-01	GJL1213109R0101	10	0.170
				48	1	0	BC6-21-10-P-16	GJL1213109R1106	10	0.170
				60	1	0	BC6-21-10-P-03	GJL1213109R0103	10	0.170
				110 ... 125	1	0	BC6-21-10-P-04	GJL1213109R0104	10	0.170
				220 ... 240	1	0	BC6-21-10-P-05	GJL1213109R0105	10	0.170

Other types on request

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3-pole mini reversing contactors – with soldering pins

VB6, VB7



VB7-30-10-P

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating	50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
VB6 mini reversing contactors											
4	12	3	300 V / 12 A	24	24	1	0	VB6-30-10-P-01	GJL1211909R0101	5	0.345
						0	1	VB6-30-01-P-01	GJL1211909R0011	5	0.345
				42	42	1	0	VB6-30-10-P-02	GJL1211909R0102	5	0.345
						0	1	VB6-30-01-P-02	GJL1211909R0012	5	0.345
				48	48	1	0	VB6-30-10-P-03	GJL1211909R0103	5	0.345
						0	1	VB6-30-01-P-03	GJL1211909R0013	5	0.345
				110 …	110 …	1	0	VB6-30-10-P-84	GJL1211909R8104	5	0.345
				127	127	0	1	VB6-30-01-P-84	GJL1211909R8014	5	0.345
				220 …	220 …	1	0	VB6-30-10-P-80	GJL1211909R8100	5	0.345
				240	240	0	1	VB6-30-01-P-80	GJL1211909R8010	5	0.345
				380 …	380 …	1	0	VB6-30-10-P-85	GJL1211909R8105	5	0.345
				415	415	0	1	VB6-30-01-P-85	GJL1211909R8015	5	0.345
VB7 mini reversing contactors											
5.5	12	5	600 V / 16 A	24	24	1	0	VB7-30-10-P-01	GJL1311909R0101	5	0.345
						0	1	VB7-30-01-P-01	GJL1311909R0011	5	0.345
				42	42	1	0	VB7-30-10-P-02	GJL1311909R0102	5	0.345
						0	1	VB7-30-01-P-02	GJL1311909R0012	5	0.345
				48	48	1	0	VB7-30-10-P-03	GJL1311909R0103	5	0.345
						0	1	VB7-30-01-P-03	GJL1311909R0013	5	0.345
				110 …	110 …	1	0	VB7-30-10-P-84	GJL1311909R8104	5	0.345
				127	127	0	1	VB7-30-01-P-84	GJL1311909R8014	5	0.345
				220 …	220 …	1	0	VB7-30-10-P-80	GJL1311909R8100	5	0.345
				240	240	0	1	VB7-30-01-P-80	GJL1311909R8010	5	0.345
				380 …	380 …	1	0	VB7-30-10-P-85	GJL1311909R8105	5	0.345
				415	415	0	1	VB7-30-01-P-85	GJL1311909R8015	5	0.345

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini reversing contactors – with soldering pins

VBC6, VBC7



VBC7-30-10-P

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
VBC6 mini reversing contactors										
4	12	3	300 V / 12 A	12	1	0	VBC6-30-10-P-07	GJL1213909R0107	5	0.345
					0	1	VBC6-30-01-P-07	GJL1213909R0017	5	0.345
				24	1	0	VBC6-30-10-P-01	GJL1213909R0101	5	0.345
					0	1	VBC6-30-01-P-01	GJL1213909R0011	5	0.345
				48	1	0	VBC6-30-10-P-06	GJL1213909R0106	5	0.345
					0	1	VBC6-30-06-P-06	GJL1213909R0016	5	0.345
				60	1	0	VBC6-30-10-P-03	GJL1213909R0103	5	0.345
					0	1	VBC6-30-01-P-03	GJL1213909R0013	5	0.345
				110 ... 125	1	0	VBC6-30-10-P-04	GJL1213909R0104	5	0.345
					0	1	VBC6-30-01-P-04	GJL1213909R0014	5	0.345
				220 ... 240	1	0	VBC6-30-10-P-05	GJL1213909R0105	5	0.345
					0	1	VBC6-30-01-P-05	GJL1213909R0015	5	0.345
VBC7 mini reversing contactors										
5.5	12	5	600 V / 16 A	12	1	0	VBC7-30-10-P-07	GJL1313909R0107	5	0.345
					0	1	VBC7-30-01-P-07	GJL1313909R0017	5	0.345
				24	1	0	VBC7-30-10-P-01	GJL1313909R0101	5	0.345
					0	1	VBC7-30-01-P-01	GJL1313909R0011	5	0.345
				48	1	0	VBC7-30-10-P-16	GJL1313909R1106	5	0.345
					0	1	VBC7-30-01-P-16	GJL1313909R1016	5	0.345
				60	1	0	VBC7-30-10-P-03	GJL1313909R0103	5	0.345
					0	1	VBC7-30-01-P-03	GJL1313909R0013	5	0.345
				110 ... 125	1	0	VBC7-30-10-P-04	GJL1313909R0104	5	0.345
					0	1	VBC7-30-01-P-04	GJL1313909R0014	5	0.345
				220 ... 240	1	0	VBC7-30-10-P-05	GJL1313909R0105	5	0.345
					0	1	VBC7-30-01-P-05	GJL1313909R0015	5	0.345

Other types on request

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3-pole mini reversing contactors – with soldering pins

VB6A, VB7A



VB7-30-01-P

4 to 5.5 kW - AC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating	50 Hz	60 Hz						
power 400 V AC-3	current θ ≤ 40 °C AC-1										
kW	A	hp		V AC	V AC						kg
VB6A mini reversing contactors with safety blocking function											
4	12	3	300 V / 12 A	24	24	1	0	VB6A-30-10-P-01	GJL1211919R0101	5	0.345
						0	1	VB6A-30-01-P-01	GJL1211919R0011	5	0.345
				42	42	1	0	VB6A-30-10-P-02	GJL1211919R0102	5	0.345
						0	1	VB6A-30-01-P-02	GJL1211919R0012	5	0.345
				48	48	1	0	VB6A-30-10-P-03	GJL1211919R0103	5	0.345
						0	1	VB6A-30-01-P-03	GJL1211919R0013	5	0.345
				110 …	110 …	1	0	VB6A-30-10-P-84	GJL1211919R8104	5	0.345
				127	127	0	1	VB6A-30-01-P-84	GJL1211919R8014	5	0.345
				220 …	220 …	1	0	VB6A-30-10-P-80	GJL1211919R8100	5	0.345
				240	240	0	1	VB6A-30-01-P-80	GJL1211919R8010	5	0.345
				380 …	380 …	1	0	VB6A-30-10-P-85	GJL1211919R8105	5	0.345
				415	415	0	1	VB6A-30-01-P-85	GJL1211919R8015	5	0.345
VB7A mini reversing contactors with safety blocking function											
5.5	12	5	600 V / 16 A	24	24	1	0	VB7A-30-10-P-01	GJL1311919R0101	5	0.345
						0	1	VB7A-30-01-P-01	GJL1311919R0011	5	0.345
				42	42	1	0	VB7A-30-10-P-02	GJL1311919R0102	5	0.345
						0	1	VB7A-30-01-P-02	GJL1311919R0012	5	0.345
				48	48	1	0	VB7A-30-10-P-03	GJL1311919R0103	5	0.345
						0	1	VB7A-30-01-P-03	GJL1311919R0013	5	0.345
				110 …	110 …	1	0	VB7A-30-10-P-84	GJL1311919R8104	5	0.345
				127	127	0	1	VB7A-30-01-P-84	GJL1311919R8014	5	0.345
				220 …	220 …	1	0	VB7A-30-10-P-80	GJL1311919R8100	5	0.345
				240	240	0	1	VB7A-30-01-P-80	GJL1311919R8010	5	0.345
				380 …	380 …	1	0	VB7A-30-10-P-85	GJL1311919R8105	5	0.345
				415	415	0	1	VB7A-30-01-P-85	GJL1311919R8015	5	0.345

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini reversing contactors – with soldering pins
VBC7A



VBC7A-30-10-P

4 to 5.5 kW - DC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
VBC7A mini reversing contactors with safety blocking function										
5.5	12	5	600 V / 16 A	12	1	0	VBC7A-30-10-P-07	GJL1313919R0107	5	0.345
					0	1	VBC7A-30-01-P-07	GJL1313919R0017	5	0.345
				24	1	0	VBC7A-30-10-P-01	GJL1313919R0101	5	0.345
					0	1	VBC7A-30-01-P-01	GJL1313919R0011	5	0.345
				48	1	0	VBC7A-30-10-P-16	GJL1313919R1106	5	0.345
					0	1	VBC7A-30-01-P-16	GJL1313919R1016	5	0.345
				60	1	0	VBC7A-30-10-P-03	GJL1313919R0103	5	0.345
					0	1	VBC7A-30-01-P-03	GJL1313919R0013	5	0.345
				110 ... 125	1	0	VBC7A-30-10-P-04	GJL1313919R0104	5	0.345
					0	1	VBC7A-30-01-P-04	GJL1313919R0014	5	0.345
				220 ... 240	1	0	VBC7A-30-10-P-05	GJL1313919R0105	5	0.345
					0	1	VBC7A-30-01-P-05	GJL1313919R0015	5	0.345

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini contactors – with soldering pins

BC6, BC7



BC7-30-10-P

4 to 5.5 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational power 400 V AC-3	Rated operational current θ ≤ 40 °C AC-1	3-phase motor rating 480 V	General use rating							
kW	A	hp		V DC						kg
DC operation 24 V / 1.4 W										
4	12	3	300 V / 12 A	24	1	0	BC6-30-10-P-1.4-81	GJL1213009R8101	10	0.170
					0	1	BC6-30-01-P-1.4-81	GJL1213009R8011	10	0.170
5.5	12	5	600 V / 16 A	24	1	0	BC7-30-10-P-1.4-81	GJL1313009R8101	10	0.170
					0	1	BC7-30-01-P-1.4-81	GJL1313009R8011	10	0.170
DC operation 17 ... 32 V / 2.4 W, Ith < 8 A										
4	12	3	300 V / 12 A	17 ... 32	1	0	BC6-30-10-P-2.4-51	GJL1213009R5101	10	0.170
					0	1	BC6-30-01-P-2.4-51	GJL1213009R5011	10	0.170
5.5	12	5	600 V / 16 A	17 ... 32	1	0	BC7-30-10-P-2.4-51	GJL1313009R5101	10	0.170
					0	1	BC7-30-01-P-2.4-51	GJL1313009R5011	10	0.170

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

4-pole mini contactor relays – with soldering pins
K6



K6-22Z-P

AC operated

Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
50 Hz V AC	60 Hz V AC				kg
2 N.O. + 2 N.C. main poles					
24	24	K6-22Z-P-01	GJH1211009R0221	10	0.170
42	42	K6-22Z-P-02	GJH1211009R0222	10	0.170
48	48	K6-22Z-P-03	GJH1211009R0223	10	0.170
110 ...127	110 ...127	K6-22Z-P-84	GJH1211009R8224	10	0.170
220 ... 240	220 ... 240	K6-22Z-P-80	GJH1211009R8220	10	0.170
380 ... 415	380 ... 415	K6-22Z-P-85	GJH1211009R8225	10	0.170
3 N.O. + 1 N.C. main poles					
24	24	K6-31Z-P-01	GJH1211009R0311	10	0.170
42	42	K6-31Z-P-02	GJH1211009R0312	10	0.170
48	48	K6-31Z-P-03	GJH1211009R0313	10	0.170
110 ...127	110 ...127	K6-31Z-P-84	GJH1211009R8314	10	0.170
220 ... 240	220 ... 240	K6-31Z-P-80	GJH1211009R8310	10	0.170
380 ... 415	380 ... 415	K6-31Z-P-85	GJH1211009R8315	10	0.170
4 N.O. main poles					
24	24	K6-40E-P-01	GJH1211009R0401	10	0.170
42	42	K6-40E-P-02	GJH1211009R0402	10	0.170
48	48	K6-40E-P-03	GJH1211009R0403	10	0.170
110 ...127	110 ...127	K6-40E-P-84	GJH1211009R8404	10	0.170
220 ... 240	220 ... 240	K6-40E-P-80	GJH1211009R8400	10	0.170
380 ... 415	380 ... 415	K6-40E-P-85	GJH1211009R8405	10	0.170

Other types on request.

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

4-pole mini contactor relays – with soldering pins
KC6



KC6-22Z-P



KC6-31Z-P

DC operated

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
2 N.O. + 2 N.C. main poles				
12	KC6-22Z-P-07	GJH1213009R0227	10	0.170
24	KC6-22Z-P-01	GJH1213009R0221	10	0.170
48	KC6-22Z-P-16	GJH1213009R1226	10	0.170
110 ... 125	KC6-22Z-P-04	GJH1213009R0224	10	0.170
220 ... 240	KC6-22Z-P-05	GJH1213009R0225	10	0.170
3 N.O. + 1 N.C. main poles				
24	KC6-31Z-P-01	GJH1213009R0311	10	0.170
48	KC6-31Z-P-16	GJH1213009R1316	10	0.170
110 ... 125	KC6-31Z-P-04	GJH1213009R0314	10	0.170
220 ... 240	KC6-31Z-P-05	GJH1213009R0315	10	0.170
4 N.O. main poles				
12	KC6-40E-P-07	GJH1213009R0407	10	0.170
24	KC6-40E-P-01	GJH1213009R0401	10	0.170
48	KC6-40E-P-16	GJH1213009R1406	10	0.170
110 ... 125	KC6-40E-P-04	GJH1213009R0404	10	0.170
220 ... 240	KC6-40E-P-05	GJH1213009R0405	10	0.170

Other types on request.



KC6-31Z-P-1.4

DC operated - low consumption

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
DC operation 24 V / 1.4 W				
24	KC6-31Z-P-1.4-81	GJH1213009R8311	10	0.170
24	KC6-40E-P-1.4-81	GJH1213009R8401	10	0.170
DC operation 17 ... 32 V / 2.4 W				
17 ... 32	KC6-31Z-P-2.4-51	GJH1213009R5311	10	0.170
17 ... 32	KC6-40E-P-2.4-51	GJH1213009R5401	10	0.170

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini contactors – with flat pin connection

B6, B7



B6-30-10-F



B7-30-10-F

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating	50 Hz	60 Hz						
power 400 V AC-3	current θ ≤ 40 °C AC-1										
kW	A	hp		V AC	V AC						kg
B6 mini contactors											
4	20	3	300 V / 12 A	24	24	1	0	B6-30-10-F-01	GJL1211003R0101	10	0.170
						0	1	B6-30-01-F-01	GJL1211003R0011	10	0.170
				42	42	1	0	B6-30-10-F-02	GJL1211003R0102	10	0.170
						0	1	B6-30-01-F-02	GJL1211003R0012	10	0.170
				48	48	1	0	B6-30-10-F-03	GJL1211003R0103	10	0.170
						0	1	B6-30-01-F-03	GJL1211003R0013	10	0.170
				110 ...	110 ...	1	0	B6-30-10-F-84	GJL1211003R8104	10	0.170
				127	127	0	1	B6-30-01-F-84	GJL1211003R8014	10	0.170
				220 ...	220 ...	1	0	B6-30-10-F-80	GJL1211003R8100	10	0.170
				240	240	0	1	B6-30-01-F-80	GJL1211003R8010	10	0.170
				380 ...	380 ...	1	0	B6-30-10-F-85	GJL1211003R8105	10	0.170
				415	415	0	1	B6-30-01-F-85	GJL1211003R8015	10	0.170
B7 mini contactors											
5.5	20	5	600 V / 16 A	24	24	1	0	B7-30-10-F-01	GJL1311003R0101	10	0.170
						0	1	B7-30-01-F-01	GJL1311003R0011	10	0.170
				42	42	1	0	B7-30-10-F-02	GJL1311003R0102	10	0.170
						0	1	B7-30-01-F-02	GJL1311003R0012	10	0.170
				48	48	1	0	B7-30-10-F-03	GJL1311003R0103	10	0.170
						0	1	B7-30-01-F-03	GJL1311003R0013	10	0.170
				110 ...	110 ...	1	0	B7-30-10-F-84	GJL1311003R8104	10	0.170
				127	127	0	1	B7-30-01-F-84	GJL1311003R8014	10	0.170
				220 ...	220 ...	1	0	B7-30-10-F-80	GJL1311003R8100	10	0.170
				240	240	0	1	B7-30-01-F-80	GJL1311003R8010	10	0.170
				380 ...	380 ...	1	0	B7-30-10-F-85	GJL1311003R8105	10	0.170
				415	415	0	1	B7-30-01-F-85	GJL1311003R8015	10	0.170

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini contactors – with flat pin connection

BC6, BC7



BC6-30-10-F



BC7-30-10-F

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
BC6 mini contactors										
4	20	3	300 V / 12 A	12	1	0	BC6-30-10-F-07	GJL1213003R0107	10	0.170
					0	1	BC6-30-01-F-07	GJL1213003R0017	10	0.170
				24	1	0	BC6-30-10-F-01	GJL1213003R0101	10	0.170
					0	1	BC6-30-01-F-01	GJL1213003R0011	10	0.170
				48	1	0	BC6-30-10-F-16	GJL1213003R1106	10	0.170
					0	1	BC6-30-01-F-16	GJL1213003R1016	10	0.170
				60	1	0	BC6-30-10-F-03	GJL1213003R0103	10	0.170
					0	1	BC6-30-01-F-03	GJL1213003R0013	10	0.170
				110 ... 125	1	0	BC6-30-10-F-04	GJL1213003R0104	10	0.170
					0	1	BC6-30-01-F-04	GJL1213003R0014	10	0.170
				220 ... 240	1	0	BC6-30-10-F-05	GJL1213003R0105	10	0.170
					0	1	BC6-30-01-F-05	GJL1213003R0015	10	0.170
BC7 mini contactors										
5.5	20	5	600 V / 16 A	12	1	0	BC7-30-10-F-07	GJL1313003R0107	10	0.170
					0	1	BC7-30-01-F-07	GJL1313003R0017	10	0.170
				24	1	0	BC7-30-10-F-01	GJL1313003R0101	10	0.170
					0	1	BC7-30-01-F-01	GJL1313003R0011	10	0.170
				48	1	0	BC7-30-10-F-16	GJL1313003R1106	10	0.170
					0	1	BC7-30-01-F-16	GJL1313003R1016	10	0.170
				60	1	0	BC7-30-10-F-03	GJL1313003R0103	10	0.170
					0	1	BC7-30-01-F-03	GJL1313003R0013	10	0.170
				110 ... 125	1	0	BC7-30-10-F-04	GJL1313003R0104	10	0.170
					0	1	BC7-30-01-F-04	GJL1313003R0014	10	0.170
				220 ... 240	1	0	BC7-30-10-F-05	GJL1313003R0105	10	0.170
					0	1	BC7-30-01-F-05	GJL1313003R0015	10	0.170

Other types on request

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

3-pole mini reversing contactors – with flat pin connection

VB7, VBC7



VB7-30-10-F

4 to 5.5 kW - C operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating								
power 400 V AC-3	current θ ≤ 40 °C AC-1			50 Hz	60 Hz						
kW	A	hp		V AC	V AC						kg
VB7 mini reversing contactors											
5.5	20	5	600 V / 16 A	24	24	1	0	VB7-30-10-F-01	GJL1311903R0101	5	0.345
						0	1	VB7-30-01-F-01	GJL1311903R0011	5	0.345
				42	42	1	0	VB7-30-10-F-02	GJL1311903R0102	5	0.345
						0	1	VB7-30-01-F-02	GJL1311903R0012	5	0.345
				48	48	1	0	VB7-30-10-F-03	GJL1311903R0103	5	0.345
						0	1	VB7-30-01-F-03	GJL1311903R0013	5	0.345
				110 ... 127	110 ... 127	1	0	VB7-30-10-F-84	GJL1311903R8104	5	0.345
						0	1	VB7-30-01-F-84	GJL1311903R8014	5	0.345
				220 ... 240	220 ... 240	1	0	VB7-30-10-F-80	GJL1311903R8100	5	0.345
						0	1	VB7-30-01-F-80	GJL1311903R8010	5	0.345
				380 ... 415	380 ... 415	1	0	VB7-30-10-F-85	GJL1311903R8105	5	0.345
						0	1	VB7-30-01-F-85	GJL1311903R8015	5	0.345

Other types on request



VBC7-30-10-F

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
VBC7 mini reversing contactors										
5.5	20	5	600 V / 16 A	12	1	0	VBC7-30-10-F-07	GJL1313903R0107	5	0.345
					0	1	VBC7-30-01-F-07	GJL1313903R0017	5	0.345
				24	1	0	VBC7-30-10-F-01	GJL1313903R0101	5	0.345
					0	1	VBC7-30-01-F-01	GJL1313903R0011	5	0.345
				48	1	0	VBC7-30-10-F-16	GJL1313903R1106	5	0.345
					0	1	VBC7-30-01-F-16	GJL1313903R1016	5	0.345
				60	1	0	VBC7-30-10-F-03	GJL1313903R0103	5	0.345
					0	1	VBC7-30-01-F-03	GJL1313903R0013	5	0.345
				110 ... 125	1	0	VBC7-30-10-F-04	GJL1313903R0104	5	0.345
					0	1	VBC7-30-01-F-04	GJL1313903R0014	5	0.345
				220 ... 240	1	0	VBC7-30-10-F-05	GJL1313903R0105	5	0.345
					0	1	VBC7-30-01-F-05	GJL1313903R0015	5	0.345

Other types on request

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3-pole mini reversing contactors – with flat pin connection

VB7A, VBC7A



VB7A-30-10-F

4 to 5.5 kW - AC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating	50 Hz	60 Hz						
power 400 V AC-3	current θ ≤ 40 °C AC-1										
kW	A	hp		V AC	V AC						kg
VB7A mini reversing contactors with safety blocking function											
5.5	20	5	600 V / 16 A	24	24	1	0	VB7A-30-10-F-01	GJL1311913R0101	5	0.345
						0	1	VB7A-30-01-F-01	GJL1311913R0011	5	0.345
				42	42	1	0	VB7A-30-10-F-02	GJL1311913R0102	5	0.345
						0	1	VB7A-30-01-F-02	GJL1311913R0012	5	0.345
				48	48	1	0	VB7A-30-10-F-03	GJL1311913R0103	5	0.345
						0	1	VB7A-30-01-F-03	GJL1311913R0013	5	0.345
				110 ...	110 ...	1	0	VB7A-30-10-F-84	GJL1311913R8104	5	0.345
				127	127	0	1	VB7A-30-01-F-84	GJL1311913R8014	5	0.345
				220 ...	220 ...	1	0	VB7A-30-10-F-80	GJL1311913R8100	5	0.345
				240	240	0	1	VB7A-30-01-F-80	GJL1311913R8010	5	0.345
				380 ...	380 ...	1	0	VB7A-30-10-F-85	GJL1311913R8105	5	0.345
				415	415	0	1	VB7A-30-01-F-85	GJL1311913R8015	5	0.345

Other types on request



VBC7A-30-10-F

4 to 5.5 kW - DC operated – with safety blocking function

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
VBC7A mini reversing contactors with safety blocking function										
5.5	20	5	600 V / 16 A	12	1	0	VBC7A-30-10-F-07	GJL1313913R0107	5	0.345
					0	1	VBC7A-30-01-F-07	GJL1313913R0017	5	0.345
				24	1	0	VBC7A-30-10-F-01	GJL1313913R0101	5	0.345
					0	1	VBC7A-30-01-F-01	GJL1313913R0011	5	0.345
				48	1	0	VBC7A-30-10-F-16	GJL1313913R1106	5	0.345
					0	1	VBC7A-30-01-F-16	GJL1313913R1016	5	0.345
				60	1	0	VBC7A-30-10-F-03	GJL1313913R0103	5	0.345
					0	1	VBC7A-30-01-F-03	GJL1313913R0013	5	0.345
				110 ... 125	1	0	VBC7A-30-10-F-04	GJL1313913R0104	5	0.345
					0	1	VBC7A-30-01-F-04	GJL1313913R0014	5	0.345
				220 ... 240	1	0	VBC7A-30-10-F-05	GJL1313913R0105	5	0.345
					0	1	VBC7A-30-01-F-05	GJL1313913R0015	5	0.345

Other types on request

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3-pole mini contactors – with flat pin connection

BC6, BC7



BC6-30-10-F



BC7-30-10-F

4 to 5.5 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating							
power 400 V AC-3	current θ ≤ 40 °C AC-1									
kW	A	hp		V DC						kg
DC operation 24 V / 1.4 W										
4	20	3	300 V / 12 A	24	1	0	BC6-30-10-F-1.4-81	GJL1213003R8101	10	0.170
					0	1	BC6-30-01-F-1.4-81	GJL1213003R8011	10	0.170
5.5	20	5	600 V / 16 A	24	1	0	BC7-30-10-F-1.4-81	GJL1313003R8101	10	0.170
					0	1	BC7-30-01-F-1.4-81	GJL1313003R8011	10	0.170
DC operation 17 ... 32 V / 2.4 W										
4	20	3	300 V / 12 A	17 ... 32	1	0	BC6-30-10-F-2.4-51	GJL1213003R5101	10	0.170
					0	1	BC6-30-01-F-2.4-51	GJL1213003R5011	10	0.170
5.5	20	5	600 V / 16 A	17 ... 32	1	0	BC7-30-10-F-2.4-51	GJL1313003R5101	10	0.170
					0	1	BC7-30-01-F-2.4-51	GJL1313003R5011	10	0.170

Other types on request

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4-pole mini contactor relays – with flat pin connection

K6



K6-22Z-F

AC operated

Rated control circuit voltage Uc		Type	Order code	Pkg qty	Weight (1 pce)
50 Hz	60 Hz				
V AC	V AC				kg
2 N.O. + 2 N.C. main poles					
24	24	K6-22Z-F-01	GJH1211003R0221	10	0.170
42	42	K6-22Z-F-02	GJH1211003R0222	10	0.170
48	48	K6-22Z-F-03	GJH1211003R0223	10	0.170
110 ...127	110 ...127	K6-22Z-F-84	GJH1211003R8224	10	0.170
220 ... 240	220 ... 240	K6-22Z-F-80	GJH1211003R8220	10	0.170
380 ... 415	380 ... 415	K6-22Z-F-85	GJH1211003R8225	10	0.170
3 N.O. + 1 N.C. main poles					
24	24	K6-31Z-F-01	GJH1211003R0311	10	0.170
42	42	K6-31Z-F-02	GJH1211003R0312	10	0.170
48	48	K6-31Z-F-03	GJH1211003R0313	10	0.170
110 ...127	110 ...127	K6-31Z-F-84	GJH1211003R8314	10	0.170
220 ... 240	220 ... 240	K6-31Z-F-80	GJH1211003R8310	10	0.170
380 ... 415	380 ... 415	K6-31Z-F-85	GJH1211003R8315	10	0.170
4 N.O. main poles					
24	24	K6-40E-F-01	GJH1211003R0401	10	0.170
42	42	K6-40E-F-02	GJH1211003R0402	10	0.170
48	48	K6-40E-F-03	GJH1211003R0403	10	0.170
110 ...127	110 ...127	K6-40E-F-84	GJH1211003R8404	10	0.170
220 ... 240	220 ... 240	K6-40E-F-80	GJH1211003R8400	10	0.170
380 ... 415	380 ... 415	K6-40E-F-85	GJH1211003R8405	10	0.170

Other types on request.

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4-pole mini contactor relays – with flat pin connection

KC6



KC6-22Z-F-01

DC operated

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
2 N.O. + 2 N.C. main poles				
12	KC6-22Z-F-07	GJH1213003R0227	10	0.170
24	KC6-22Z-F-01	GJH1213003R0221	10	0.170
48	KC6-22Z-F-16	GJH1213003R1226	10	0.170
110 ... 125	KC6-22Z-F-04	GJH1213003R0224	10	0.170
220 ... 240	KC6-22Z-F-05	GJH1213003R0225	10	0.170
3 N.O. + 1 N.C. main poles				
12	KC6-31Z-F-07	GJH1213003R0317	10	0.170
24	KC6-31Z-F-01	GJH1213003R0311	10	0.170
48	KC6-31Z-F-16	GJH1213003R1316	10	0.170
110 ... 125	KC6-31Z-F-04	GJH1213003R0314	10	0.170
220 ... 240	KC6-31Z-F-05	GJH1213003R0315	10	0.170
4 N.O. main poles				
24	KC6-40E-F-01	GJH1213003R0401	10	0.170
48	KC6-40E-F-16	GJH1213003R1406	10	0.170
110 ... 125	KC6-40E-F-04	GJH1213003R0404	10	0.170
220 ... 240	KC6-40E-F-05	GJH1213003R0405	10	0.170

Other types on request.



KC6-31Z-F-05

DC operated - low consumption

Rated control circuit voltage Uc V DC	Type	Order code	Pkg qty	Weight (1 pce) kg
DC operation 24 V / 1.4 W				
24	KC6-31Z-F-1.4-81	GJH1213003R8311	10	0.170
24	KC6-40E-F-1.4-81	GJH1213003R8401	10	0.170
DC operation 17 ... 32 V / 2.4 W				
17 ... 32	KC6-31Z-F-51	GJH1213003R5311	10	0.170
17 ... 32	KC6-40E-F-51	GJH1213003R5401	10	0.170

Other types on request

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Accessories for B mini contactors



CAF6-11N



CA6-11E



CA6-11E-P



CA6-11E-F



RV-BC6/250



BSM6-30



LT6-B

Suitable for	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Front mounted instantaneous auxiliary contact blocks (not allowed for mounting on B6S, B7S, interface contactors)[1, 2]						
B6-, B7-40-00, BC6-, BC7-40-00	1	1	CAF6-11E	GJL1201330R0002	10	0.020
VB6, VB7, VBC6, VBC7, VB6A, VB7A	2	0	CAF6-20E	GJL1201330R0006	10	0.020
VBC6A, VBC7A	0	2	CAF6-02E	GJL1201330R0010	10	0.020
B6-, B7-30-10, BC6-, BC7-30-10	1	1	CAF6-11M	GJL1201330R0003	10	0.020
VB6, VB7, VBC6, VBC7, VB6A, VB7A	2	0	CAF6-20M	GJL1201330R0007	10	0.020
VBC6A, VBC7A	0	2	CAF6-02M	GJL1201330R0011	10	0.020
B6-, B7-30-01, BC6-, BC7-30-01	1	1	CAF6-11N	GJL1201330R0004	10	0.020
VB6, VB7, VBC6, VBC7, VB6A, VB7A	2	0	CAF6-20N	GJL1201330R0008	10	0.020
VBC6A, VBC7A	0	2	CAF6-02N	GJL1201330R0012	10	0.020
Side mounted instantaneous auxiliary contact block[1, 2]						
B6-, B7-40-00, BC6-, BC7-40-00	1	1	CA6-11E	GJL1201317R0002	10	0.030
B6-, B7-30-10, BC6-, BC7-30-10	1	1	CA6-11M	GJL1201317R0003	10	0.030
B6-, B7-30-01, BC6-, BC7-30-01	1	1	CA6-11N	GJL1201317R0004	10	0.030
Side mounted instantaneous auxiliary contact block with soldering pins[1, 2]						
B6-, B7-40-00-P, BC6-,BC7-40-00-P	1	1	CA6-11E-P	GJL1201319R0002	10	0.025
B6-, B7-30-10-P, BC6-, BC7-30-10-P	1	1	CA6-11M-P	GJL1201319R0003	10	0.025
B6-, B7-30-01-P, BC6-, BC7-30-01-P	1	1	CA6-11N-P	GJL1201319R0004	10	0.025
Side mounted instantaneous auxiliary contact block with flat pin connection[1, 2]						
B6-, B7-40-00-F, BC6-,BC7-40-00-F	1	1	CA6-11E-F	GJL1201318R0002	10	0.025
B6-, B7-30-10-F, BC6-, BC7-30-10-F	1	1	CA6-11M-F	GJL1201318R0003	10	0.025
B6-, B7-30-01-F, BC6-, BC7-30-01-F	1	1	CA6-11N-F	GJL1201318R0004	10	0.025
Soldering socket (Ith = 10 A, AC-3: 500 V / 8 A, 690 V / 3.5 A, UL: 300 V / 8 A)						
B6, B7, BC6, BC7			LB6	GJL1201902R0001	10	0.020
2-pole aux.contact blocks CA			LB6-CA	GJL1201903R0001	10	0.010

[1]CA6 and CAF6 must not be fitted simultaneously.
[2]The auxiliary contacts in the front or side blocks are not Mirror contacts

Suitable for	Rated control circuit voltage UC	Connection type	Type	Order code	Pkg qty	Weight (1 pce)
	V DC					kg
Surge suppressors for contactor coils						
BC6, BC7	24 ... 60	Cable lug	RV-BC6/60	GHV2501902R0002	10	0.005
	50 ... 250	Cable lug	RV-BC6/250	GHV2501903R0002	10	0.005

Note: Mini contactors for AC operation have an integrated protective circuit

Connecting links with manual motor starters				
To connect B..VB.. mini contactor to MS116, MS132	BEA7/132	1SBN080906R1002	10	0.013
To connect B..VB.. mini contactors to MS325	BEA7/325	1SBN080906R1001	10	0.021
Connection sets for reversing contactors				
VB6, VB7, VBC6, VBC7, VB6A, VB7A, VBC6A, VBC7A, cross-section 1.8 mm²	BSM6-30	GJL1201908R0001	10	0.010
Parallel connecting link				
B6, B7, BC6, BC7	LP6	GJL1201907R0001	100	0.009
Cover cap, transparent fitting to DIN rail design, sealable				
B6, B7, BC6, BC7	LT6-B	GJL1201906R0001	10	0.015
Plastic label for markings				
B6, B7, BC6, BC7	BA5-50	1SBN110000R1000	50	0.020

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Accessories for K mini contactor relays



CAF6-11K



CA6-11K



CA6-11K-P



CA6-11K-F



LT6-B



RV-BC6/250

Suitable for	Auxiliary contacts		Type	Order code	Pkg qty	Weight (1 pce)
						kg
Front mounted instantaneous auxiliary contact blocks[1, 2]						
K6, KC6	1	1	CAF6-11K	GJL1201330R0001	10	0.020
	2	0	CAF6-20K	GJL1201330R0005	10	0.020
	0	2	CAF6-02K	GJL1201330R0009	10	0.020
Side mounted instantaneous auxiliary contact block[1, 2]						
K6, KC6	1	1	CA6-11K	GJL1201317R0001	10	0.030
Side mounted instantaneous auxiliary contact block with soldering pins[1, 2]						
K6..P, KC6..P	1	1	CA6-11K-P	GJL1201319R0001	10	0.025
Side mounted instantaneous auxiliary contact block with flat pin connection[1, 2]						
K6..F, KC6..F	1	1	CA6-11K-F	GJL1201318R0001	10	0.025
Soldering socket (Ie < 8 A)						
K6, KC6			LB6	GJL1201902R0001	10	0.020
2-pole auxiliary contact blocks CA			LB6-CA	GJL1201903R0001	10	0.010

[1]CA6 and CAF6 must not be fitted simultaneously.
[2]The auxiliary contacts in the front or side blocks are not Mechanically linked contacts

Suitable for	Rated control circuit voltage UC	Connection type	Type	Order code	Pkg qty	Weight (1 pce)
	V DC					kg
Surge suppressors for contactor coils						
KC6	24 ... 60	Cable lug	RV-BC6/60	GHV2501902R0002	10	0.005
	50 ... 250	Cable lug	RV-BC6/250	GHV2501903R0002	10	0.005

Note: Mini contactors for AC operation have an integrated protective circuit

Cover cap, transparent fitting to DIN rail design, sealable					
K6, KC6	LT6-B	GJL1201906R0001	10	0.015	

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M mini contactors




				Screw terminals		Screw terminals for ring tongue ferrules	
AC Control supply							
3-pole contactors	Coil consumption (50 Hz) 5.3 VA		Type	**MC1A..T**	**MC2A..T**	**MC1A..R**	**MC2A..R**
4-pole contactors	Coil consumption (50 Hz) 5.3 VA		Type	**MC1A..T**	**MC2A..T**	**MC1A..R**	**–**
DC Control supply							
3-pole contactors	Coil consumption 3 W		Type	**MC1C..T**	**MC2C..T**	**MC1C..R**	**–**
3-pole low consumption contactors	Coil consumption 1.2 / 2 W		Type	**MC1I..T / MC1K..T**	**MC2I..T / MC2K..T**	**MC1K..R**	**–**
3-pole extended limits coil contactors	Coil consumption 4 W		Type	**MC1C..TW**	**MC2C..TW**	**–**	**–**
4-pole contactors	Coil consumption 3 W		Type	**MC1C..T**	**–**	**MC1C..R**	**–**
4-pole low consumption contactors	Coil consumption 1.2 / 2 W		Type	**MC1I..T / MC1K..T**	**–**	**MC1K..R**	**–**
4-pole extended limits coil contactors	Coil consumption 4 W		Type	**MC1C..TW**	**MC2C..TW**	**–**	**–**
IEC	Rated operational power AC-3	230 V	kW	2.2	3	2.2	3
		400 V	kW	4	5.5	4	5.5
		500 V	kW	4	5.5	4	5.5
		690 V	kW	4[1]	4[1]	4[1]	4[1]
	Rated operational current AC-1	400 V, θ ≤ 55 °C	A	20	20	20	20
UL/CSA	3-phase motor rating	200 V AC	hp	3	3	3	3
		240 V AC	hp	3	3	3	3
		380-425 V AC	hp	3	5	3	5
		440-480 V AC	hp	5	7.5	5	7.5
		500-600 V AC	hp	5	10	5	10
	General use rating		A	20 (600 V)	20 (600 V)	20 (600 V)	20 (600 V)
Main accessories							
Auxiliary contact blocks		Front mounting		MACN / MARN			
		Side mounting		MACL / MARL			
Electronic timers				MREBC			
Connection sets		For reversing contactors		WKMIU			
Surge suppressors				MP0			
Overload relays							
Thermal overload relays Thermal and phase failure protection, with single setup possible			Class 10	T16			

[1]Valid for N.O. contacts only.

M mini contactor relays




				Screw terminals	Screw terminals for ring tongue ferrules
AC Control supply					
4-pole contactor relays	Coil consumption (50 Hz) 5.3 VA		Type	**MCRA..T**	**MCRA..R**
DC Control supply					
4-pole contactor relays	Coil consumption 3 W		Type	**MCRC..T**	**MCRC..R**
4-pole low consumption contactor relays	Coil consumption 1.2 / 2 W		Type	**MCRI..T / MCRK..T**	**MCRK..R**
4-pole extended limits coil contactor relays	Coil consumption 4 W		Type	**MCRC..TW**	**–**
IEC	Rated operational current AC-15	240 V	A	6	6
		400 V	A	4	4
	Rated operational current DC-13	24 V	A	5	5
UL/CSA Pilot duty				A600, Q600	
Main accessories					
Auxiliary contact blocks		Front mounting		MARN	
		Side mounting		MARL	
Electronic timers				MREBC	
Surge suppressor				MP0	

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3-pole mini contactors with screw terminals

MC1A, MC2A



MC1A310AT

4 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
4	20	5	20	24	24	1	0	MC1A-3-10-AT-1	1SAL102617R9901	0.170
						0	1	MC1A-3-01-AT-1	1SAL102638R9901	0.170
				48	48	1	0	MC1A-3-10-AT-9	1SAL100298R9901	0.170
						0	1	MC1A-3-01-AT-9	1SAL100320R9901	0.170
				110...115	110...120	1	0	MC1A-3-10-AT-J	1SAL100213R9901	0.170
						0	1	MC1A-3-01-AT-J	1SAL100223R9901	0.170
				120	120	1	0	MC1A-3-10-AT-4	1SAL102620R9901	0.170
						0	1	MC1A-3-01-AT-4	1SAL102641R9901	0.170
				–	208...220	1	0	MC1A-3-10-AT-M	1SAL102611R9901	0.170
						0	1	MC1A-3-01-AT-M	1SAL220348R9901	0.170
				220...230	220...230	1	0	MC1A-3-10-AT-6	1SAL102622R9901	0.170
						0	1	MC1A-3-01-AT-6	1SAL102643R9901	0.170
				220...240	240...277	1	0	MC1A-3-10-AT-N	1SAL100214R9901	0.170
						0	1	MC1A-3-01-AT-N	1SAL100224R9901	0.170
				240	240	1	0	MC1A-3-10-AT-7	1SAL102623R9901	0.170
						0	1	MC1A-3-01-AT-7	1SAL102995R9901	0.170
				380...400	440	1	0	MC1A-3-10-AT-U	1SAL100215R9901	0.170
						0	1	MC1A-3-01-AT-U	1SAL100225R9901	0.170
				415...440	480	1	0	MC1A-3-10-AT-W	1SAL102615R9901	0.170
						0	1	MC1A-3-01-AT-W	1SAL102636R9901	0.170
				500	600	1	0	MC1A-3-10-AT-Y	1SAL102616R9901	0.170
						0	1	MC1A-3-01-AT-Y	1SAL102637R9901	0.170



MC2A310AT

5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
5.5	20	7.5	20	24	24	1	0	MC2A-3-10-AT-1	1SAL103577R9902	0.170
						0	1	MC2A-3-01-AT-1	1SAL103569R9902	0.170
				48	48	1	0	MC2A-3-10-AT-9	1SAL103268R9902	0.170
						0	1	MC2A-3-01-AT-9	1SAL103269R9902	0.170
				110...115	110...120	1	0	MC2A-3-10-AT-J	1SAL103573R9902	0.170
						0	1	MC2A-3-01-AT-J	1SAL103565R9902	0.170
				120	120	1	0	MC2A-3-10-AT-4	1SAL101644R9902	0.170
						0	1	MC2A-3-01-AT-4	1SAL101641R9902	0.170
				–	208...220	1	0	MC2A-3-10-AT-M	1SAL103835R9902	0.170
						0	1	MC2A-3-01-AT-M	1SAL100046R9902	0.170
				220...230	220...230	1	0	MC2A-3-10-AT-6	1SAL103579R9902	0.170
						0	1	MC2A-3-01-AT-6	1SAL103571R9902	0.170
				220...240	240...277	1	0	MC2A-3-10-AT-N	1SAL103574R9902	0.170
						0	1	MC2A-3-01-AT-N	1SAL103566R9902	0.170
				240	240	1	0	MC2A-3-10-AT-7	1SAL101875R9902	0.170
						0	1	MC2A-3-01-AT-7	1SAL101877R9902	0.170
				380...400	440	1	0	MC2A-3-10-AT-U	1SAL103575R9902	0.170
						0	1	MC2A-3-01-AT-U	1SAL103567R9902	0.170
				415...440	480	1	0	MC2A-3-10-AT-W	1SAL135704R9902	0.170
						0	1	MC2A-3-01-AT-W	1SAL135705R9902	0.170
				500	600	1	0	MC2A-3-10-AT-Y	1SAL101876R9902	0.170
						0	1	MC2A-3-01-AT-Y	1SAL101907R9902	0.170

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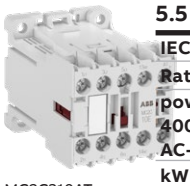
3-pole mini contactors with screw terminals
MC1C, MC2C


MC1C310AT

4 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
MC1C mini contactors									
4	20	5	20	12	1	0	MC1C-3-10-AT-B	1SAL100210R9901	0.250
					0	1	MC1C-3-01-AT-B	1SAL100220R9901	0.250
				24	1	0	MC1C-3-10-AT-D	1SAL100216R9901	0.250
					0	1	MC1C-3-01-AT-D	1SAL100226R9901	0.250
				24 with Diode	1	0	MC1C-3-10-AT-DD	1SAL113312R9901	0.250
					0	1	MC1C-3-01-AT-DD	1SAL113328R9901	0.250
MC1C mini contactors with extended operating limits coil									
4	20	5	20	24[1]	1	0	MC1C-3-10-AT-WD	1SAL220373R9901	0.250
					0	1	MC1C-3-01-AT-WD	1SAL220372R9901	0.250
				48[1]	1	0	MC1C-3-10-AT-WG	1SAL100380R9901	0.250
					0	1	MC1C-3-01-AT-WG	1SAL200795R9901	0.250
				110[1]	1	0	MC1C-3-10-AT-WJ	1SAL220371R9901	0.250
					0	1	MC1C-3-01-AT-WJ	1SAL220370R9901	0.250
				125[1]	1	0	MC1C-3-10-AT-WL	1SAL220460R9901	0.250
					0	1	MC1C-3-01-AT-WL	1SAL220459R9901	0.250
				220[1]	1	0	MC1C-3-10-AT-WN	1SAL220369R9901	0.250
					0	1	MC1C-3-01-AT-WN	1SAL220368R9901	0.250

[1]With the extended operating limits coils:
- at nominal voltage, Uc, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages, -30% ≤ Uc ≤ +30%, can be used for the operation with a limitation of the number of auxiliary contacts.


MC2C310AT

5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
MC2C mini contactors									
5.5	20	7.5	20	12	1	0	MC2C-3-10-AT-B	1SAL103588R9902	0.250
					0	1	MC2C-3-01-AT-B	1SAL103589R9902	0.250
				24	1	0	MC2C-3-10-AT-D	1SAL103584R9902	0.250
					0	1	MC2C-3-01-AT-D	1SAL103580R9902	0.250
				24 with Diode	1	0	MC2C-3-10-AT-DD	1SAL101926R9902	0.250
					0	1	MC2C-3-01-AT-DD	1SAL101955R9902	0.250
MC2C mini contactors with extended operating limits coil									
5.5	20	7.5	20	24[1]	1	0	MC2C-3-10-AT-WD	1SAL102378R9902	0.250
					0	1	MC2C-3-01-AT-WD	1SAL102379R9902	0.250
				48[1]	1	0	MC2C-3-10-AT-WG	1SAL101951R9902	0.250
					0	1	MC2C-3-01-AT-WG	1SAL101958R9902	0.250
				110[1]	1	0	MC2C-3-10-AT-WJ	1SAL102381R9902	0.250
					0	1	MC2C-3-01-AT-WJ	1SAL102382R9902	0.250
				125[1]	1	0	MC2C-3-10-AT-WL	1SAL204887R9902	0.250
					0	1	MC2C-3-01-AT-WL	1SAL204886R9902	0.250
				220[1]	1	0	MC2C-3-10-AT-WN	1SAL100442R9902	0.250
					0	1	MC2C-3-01-AT-WN	1SAL100435R9902	0.250

[1]With the extended operating limits coils:
- at nominal voltage, Uc, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages, -30% ≤ Uc ≤ +30%, can be used for the operation with a limitation of the number of auxiliary contacts.

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3- pole mini contactors with screw terminals

MC1I, MC1K, MC2I, MC2K



MC1I310AT



MC2I310AT



MC1K310AT



MC2K310AT

4 to 5.5 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
DC operation 24 V / 1.2 W									
4	20	7.5	20	24	1	0	MC1I-3-10-AT-D	1SAL100572R9901	0.250
					0	1	MC1I-3-01-AT-D	1SAL100573R9901	0.250
5.5	20	7.5	20	24	1	0	MC2I-3-10-AT-D	1SAL100559R9902	0.250
					0	1	MC2I-3-01-AT-D	1SAL100538R9902	0.250
DC operation 24 V / 2 W									
4	20	7.5	20	24	1	0	MC1K-3-10-AT-D	1SAL100576R9901	0.250
					0	1	MC1K-3-01-AT-D	1SAL100577R9901	0.250
5.5	20	7.5	20	24	1	0	MC2K-3-10-AT-D	1SAL103590R9902	0.250
					0	1	MC2K-3-01-AT-D	1SAL103591R9902	0.250

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3-pole mini contactors for ring tongue ferrules

MC1A..R, MC2A..R, MC1C..R, MC1K..R



MC1A310AR



MC2A310AR

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
MC1A mini contactors										
4	20	5	20	24	24	1	0	MC1A-3-10-AR-1	1SAL103386R9901	0.170
						0	1	MC1A-3-01-AR-1	1SAL103399R9901	0.170
				110 ... 115	110 ... 120	1	0	MC1A-3-10-AR-J	1SAL100182R9901	0.170
						0	1	MC1A-3-01-AR-J	1SAL100175R9901	0.170
				220 ... 230	220 ... 230	1	0	MC1A-3-10-AR-6	1SAL102157R9901	0.170
						0	1	MC1A-3-01-AR-6	1SAL102158R9901	0.170
MC2A mini contactors										
5.5	20	7.5	20	24	24	1	0	MC2A-3-10-AR-1	1SAL103412R9902	0.170
						0	1	MC2A-3-01-AR-1	1SAL103425R9902	0.170
				110 ... 115	110 ... 120	1	0	MC2A-3-10-AR-J	1SAL103414R9902	0.170
						0	1	MC2A-3-01-AR-J	1SAL103427R9902	0.170
				220 ... 230	220 ... 230	1	0	MC2A-3-10-AR-6	1SAL102175R9902	0.170
						0	1	MC2A-3-01-AR-6	1SAL102176R9902	0.170



MC1C310AR

4 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
4	20	5	20	12	1	0	MC1C-3-10-AR-B	1SAL101847R9901	0.250
					0	1	MC1C-3-01-AR-B	1SAL101848R9901	0.250



MC1K310AR

4 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
DC operation 24 V / 2 W									
4	20	5	20	24	1	0	MC1K-3-10-AR-D	1SAL103446R9901	0.250
					0	1	MC1K-3-01-AR-D	1SAL101858R9901	0.250

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4-pole mini contactors with screw terminals
MC1A


MC1A400AT

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
4 N.O. main poles										
4	20	5	20	24	24	0	0	MC1A-4-00-AT-1	1SAL102986R9901	0.170
				48	48	0	0	MC1A-4-00-AT-9	1SAL100296R9901	0.170
				110 ... 115	110 ... 120	0	0	MC1A-4-00-AT-J	1SAL100363R9901	0.170
				120	120	0	0	MC1A-4-00-AT-4	1SAL102989R9901	0.170
				–	208 ... 220	0	0	MC1A-4-00-AT-M	1SAL102980R9901	0.170
				220 ... 230	220 ... 230	0	0	MC1A-4-00-AT-6	1SAL102991R9901	0.170
				220 ... 240	240 ... 277	0	0	MC1A-4-00-AT-N	1SAL100364R9901	0.170
				240	240	0	0	MC1A-4-00-AT-7	1SAL103101R9901	0.170
				380 ... 400	440	0	0	MC1A-4-00-AT-U	1SAL100365R9901	0.170
				415 ... 440	480	0	0	MC1A-4-00-AT-W	1SAL102984R9901	0.170
				500	600	0	0	MC1A-4-00-AT-Y	1SAL102985R9901	0.170
2 N.O. + 2 N.C. main poles										
4	20	5	20	24	24	0	0	MC1A-B-00-AT-1	1SAL103007R9901	0.170
				48	48	0	0	MC1A-B-00-AT-9	1SAL100400R9901	0.170
				110 ... 115	110 ... 120	0	0	MC1A-B-00-AT-J	1SAL100373R9901	0.170
				120	120	0	0	MC1A-B-00-AT-4	1SAL103010R9901	0.170
				–	208 ... 220	0	0	MC1A-B-00-AT-M	1SAL103001R9901	0.170
				220 ... 230	220 ... 230	0	0	MC1A-B-00-AT-6	1SAL103012R9901	0.170
				240	240	0	0	MC1A-B-00-AT-7	1SAL103099R9901	0.170
				220 ... 240	240 ... 277	0	0	MC1A-B-00-AT-N	1SAL100374R9901	0.170
				380 ... 400	440	0	0	MC1A-B-00-AT-U	1SAL100375R9901	0.170
				415 ... 440	480	0	0	MC1A-B-00-AT-W	1SAL101834R9901	0.170
				500	600	0	0	MC1A-B-00-AT-Y	1SAL103006R9901	0.170

Note: Other contact configuration available. Please consult your ABB local sales organization.

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4-pole mini contactors with screw terminals
MC2A


MC2A400AT

4 to 5.5 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
4 N.O. main poles										
5.5	20	7.5	20	24	24	0	0	MC2A-4-00-AT-1	1SAL101645R9902	0.170
				48	48	0	0	MC2A-4-00-AT-9	1SAL116195R9902	0.170
				110 ... 115	110 ... 120	0	0	MC2A-4-00-AT-J	1SAL116184R9902	0.170
				120	120	0	0	MC2A-4-00-AT-4	1SAL101647R9902	0.170
				–	208 ... 220	0	0	MC2A-4-00-AT-M	1SAL101912R9902	0.170
				220 ... 230	220 ... 230	0	0	MC2A-4-00-AT-6	1SAL103595R9902	0.170
				220 ... 240	240 ... 277	0	0	MC2A-4-00-AT-N	1SAL116177R9902	0.170
				240	240	0	0	MC2A-4-00-AT-7	1SAL101910R9902	0.170
				380 ... 400	440	0	0	MC2A-4-00-AT-U	1SAL103292R9902	0.170
				415 ... 440	480	0	0	MC2A-4-00-AT-W	1SAL116193R9902	0.170
				500	600	0	0	MC2A-4-00-AT-Y	1SAL101915R9902	0.170
2 N.O. + 2 N.C. main poles										
5.5	20	7.5	20	24	24	0	0	MC2A-B-00-AT-1	1SAL101648R9902	0.170
				48	48	0	0	MC2A-B-00-AT-9	1SAL248068R9902	0.170
				110 ... 115	110 ... 120	0	0	MC2A-B-00-AT-J	1SAL110548R9902	0.170
				120	120	0	0	MC2A-B-00-AT-4	1SAL101650R9902	0.170
				–	208 ... 220	0	0	MC2A-B-00-AT-M	1SAL101918R9902	0.170
				220 ... 230	220 ... 230	0	0	MC2A-B-00-AT-6	1SAL103027R9902	0.170
				220 ... 240	240 ... 277	0	0	MC2A-B-00-AT-N	1SAL135699R9902	0.170
				240	240	0	0	MC2A-B-00-AT-7	1SAL101917R9902	0.170
				380 ... 400	440	0	0	MC2A-B-00-AT-U	1SAL101919R9902	0.170
				415 ... 440	480	0	0	MC2A-B-00-AT-W	1SAL247441R9902	0.170
				500	600	0	0	MC2A-B-00-AT-Y	1SAL101923R9902	0.170

Note: Other contact configuration available. Please consult your ABB local sales organization.

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4-pole mini contactors with screw terminals

MC1C, MC2C, MC1I, MC1K



MC1C400AT



MC2C400AT

4 to 5.5 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
4 N.O. main poles									
4	20	5	20	12	0	0	MC1C-4-00-AT-B	1SAL100360R9901	0.250
				24	0	0	MC1C-4-00-AT-D	1SAL100366R9901	0.250
				24 with Diode	0	0	MC1C-4-00-AT-DD	1SAL101841R9901	0.250
4 N.O. main poles mini contactors with extended operating limits coil									
4	20	5	20	24[1]	0	0	MC1C-4-00-AT-WD	1SAL220344R9901	0.250
				48[1]	0	0	MC1C-4-00-AT-WG	1SAL220364R9901	0.250
				110[1]	0	0	MC1C-4-00-AT-WJ	1SAL220342R9901	0.250
				125[1]	0	0	MC1C-4-00-AT-WL	1SAL220462R9901	0.250
				220[1]	0	0	MC1C-4-00-AT-WN	1SAL220340R9901	0.250
5.5	20	7.5	20	24[1]	0	0	MC2C-4-00-AT-WD	1SAL101961R9902	0.250
				48[1]	0	0	MC2C-4-00-AT-WG	1SAL101962R9902	0.250
				110[1]	0	0	MC2C-4-00-AT-WJ	1SAL101963R9902	0.250
				125[1]	0	0	MC2C-4-00-AT-WL	1SAL101964R9902	0.250
				220[1]	0	0	MC2C-4-00-AT-WN	1SAL100445R9902	0.250
2 N.O. + 2 N.C. main poles mini contactors with extended operating limits coil									
4	20	5	20	24[1]	0	0	MC1C-B-00-AT-WD	1SAL220345R9901	0.250
				48[1]	0	0	MC1C-B-00-AT-WG	1SAL220366R9901	0.250
				110[1]	0	0	MC1C-B-00-AT-WJ	1SAL220343R9901	0.250
				125[1]	0	0	MC1C-B-00-AT-WL	1SAL220461R9901	0.250
				220[1]	0	0	MC1C-B-00-AT-WN	1SAL220341R9901	0.250
5.5	20	7.5	20	24[1]	0	0	MC2C-B-00-AT-WD	1SAL101965R9902	0.250
				48[1]	0	0	MC2C-B-00-AT-WG	1SAL101966R9902	0.250
				110[1]	0	0	MC2C-B-00-AT-WJ	1SAL101967R9902	0.250
				125[1]	0	0	MC2C-B-00-AT-WL	1SAL204888R9902	0.250
				220[1]	0	0	MC2C-B-00-AT-WN	1SAL101968R9902	0.250

Note : Other contact configuration available. Please consult your ABB local sales organization.
[1]With the extended operating limits coils:
- at nominal voltage, Uc, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages, -30% ≤ Uc ≤ +30%, can be used for the operation with a limitation of the number of auxiliary contacts.



MC1I400AT

4 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC				
power 400 V AC-3	current θ ≤ 55 °C AC-1						
kW	A	hp	A	V DC			kg
DC operation 24 V / 1.2 W							
4	20	5	20	24	MC1I-4-00-AT-D	1SAL101840R9901	0.250
DC operation 24 V / 2 W							
4	20	5	20	24	MC1K-4-00-AT-D	1SAL100569R9901	0.250



MC1K400AT

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4-pole mini contactors for ring tongue ferrules

MC1A..R, MC1C..R, MC1K..R



MC1A400AR

4 kW - AC operated

IEC		UL/CSA		Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC							
power 400 V AC-3	current θ ≤ 55 °C AC-1									
kW	A	hp	A	V 50 Hz	V 60 Hz					kg
4 N.O. main poles										
4	20	5	20	24	24	0	0	MC1A-4-00-AR-1	1SAL102160R9901	0.170
				110 ... 115	110 ... 120	0	0	MC1A-4-00-AR-J	1SAL102166R9901	0.170
				220 ... 230	220 ... 230	0	0	MC1A-4-00-AR-6	1SAL102164R9901	0.170
2 N.O. + 2 N.C. main poles										
4	20	5	20	24	24	0	0	MC1A-B-00-AR-1	1SAL102172R9901	0.170
				110 ... 115	110 ... 120	0	0	MC1A-B-00-AR-J	1SAL102174R9901	0.170
				220 ... 230	220 ... 230	0	0	MC1A-B-00-AR-6	1SAL102173R9901	0.170



MC1C400AR

4 kW - DC operated

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC						
power 400 V AC-3	current θ ≤ 55 °C AC-1								
kW	A	hp	A	V DC					kg
4 N.O. main poles									
4	20	5	20	12	0	0	MC1C-4-00-AR-B	1SAL101859R9901	0.250



MC1K400AR

4 kW - DC operated - low consumption

IEC		UL/CSA		Rated control circuit voltage Uc	Type	Order code	Weight Pkg (1 pce)
Rated operational		3-phase motor rating 480 V	General use rating 600 V AC				
power 400 V AC-3	current θ ≤ 55 °C AC-1						
kW	A	hp	A	V DC			kg
4	20	5	20	24	MC1K-4-00-AR-D	1SAL101860R9901	0.250

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4-pole mini contactor relays with screw terminals
MCRA


MCRA040AT

AC operated

Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V 50 Hz	V 60 Hz					kg
4 N.O. poles						
24	24	4	0	MCRA-0-40-AT-1	1SAH102013R9900	0.170
48	48	4	0	MCRA-0-40-AT-9	1SAH108237R9900	0.170
110 ... 115	110 ... 120	4	0	MCRA-0-40-AT-J	1SAH100003R9900	0.170
120	120	4	0	MCRA-0-40-AT-4	1SAH102016R9900	0.170
–	208 ... 220	4	0	MCRA-0-40-AT-M	1SAH102007R9900	0.170
220 ... 230	220 ... 230	4	0	MCRA-0-40-AT-6	1SAH102018R9900	0.170
220 ... 240	240 ... 277	4	0	MCRA-0-40-AT-N	1SAH100004R9900	0.170
240	240	4	0	MCRA-0-40-AT-7	1SAH103106R9900	0.170
380 ... 400	440	4	0	MCRA-0-40-AT-U	1SAH100005R9900	0.170
415 ... 440	480	4	0	MCRA-0-40-AT-W	1SAH102011R9900	0.170
500	600	4	0	MCRA-0-40-AT-Y	1SAH102012R9900	0.170
3 N.O. + 1 N.C. poles						
24	24	3	1	MCRA-0-31-AT-1	1SAH102034R9900	0.170
48	48	3	1	MCRA-0-31-AT-9	1SAH108238R9900	0.170
110 ... 115	110 ... 120	3	1	MCRA-0-31-AT-J	1SAH100013R9900	0.170
120	120	3	1	MCRA-0-31-AT-4	1SAH102037R9900	0.170
–	208 ... 220	3	1	MCRA-0-31-AT-M	1SAH102028R9900	0.170
220 ... 230	220 ... 230	3	1	MCRA-0-31-AT-6	1SAH102039R9900	0.170
220 ... 240	240 ... 277	3	1	MCRA-0-31-AT-N	1SAH100014R9900	0.170
240	240	3	1	MCRA-0-31-AT-7	1SAH103105R9900	0.170
380 ... 400	440	3	1	MCRA-0-31-AT-U	1SAH100015R9900	0.170
415 ... 440	480	3	1	MCRA-0-31-AT-W	1SAH102032R9900	0.170
500	600	3	1	MCRA-0-31-AT-Y	1SAH102033R9900	0.170
2 N.O. + 2 N.C. poles						
24	24	2	2	MCRA-0-22-AT-1	1SAH220438R9900	0.170
48	48	2	2	MCRA-0-22-AT-9	1SAH108236R9900	0.170
110 ... 115	110 ... 120	2	2	MCRA-0-22-AT-J	1SAH100023R9900	0.170
120	120	2	2	MCRA-0-22-AT-4	1SAH102058R9900	0.170
–	208 ... 220	2	2	MCRA-0-22-AT-M	1SAH102049R9900	0.170
220 ... 230	220 ... 230	2	2	MCRA-0-22-AT-6	1SAH102060R9900	0.170
220 ... 240	240 ... 277	2	2	MCRA-0-22-AT-N	1SAH100024R9900	0.170
240	240	2	2	MCRA-0-22-AT-7	1SAH102061R9900	0.170
380 ... 400	440	2	2	MCRA-0-22-AT-U	1SAH100025R9900	0.170
415 ... 440	480	2	2	MCRA-0-22-AT-W	1SAH102053R9900	0.170
500	600	2	2	MCRA-0-22-AT-Y	1SAH102054R9900	0.170

Note : Other contact configuration available. Please consult your ABB local sales organization.

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4-pole mini contactor relays with screw terminals
MCRC


MCRC040AT

DC operated

Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V DC					kg
4 N.O. poles					
12	4	0	MCRC-0-40-AT-B	1SAH100000R9900	0.235
24	4	0	MCRC-0-40-AT-D	1SAH100006R9900	0.235
24 with Diode	4	0	MCRC-0-40-AT-DD	1SAH113311R9900	0.235
3 N.O. + 1 N.C. poles					
12	3	1	MCRC-0-31-AT-B	1SAH100010R9900	0.235
24	3	1	MCRC-0-31-AT-D	1SAH100016R9900	0.235
24 with Diode	3	1	MCRC-0-31-AT-DD	1SAH113325R9900	0.235
2 N.O. + 2 N.C. poles					
12	2	2	MCRC-0-22-AT-B	1SAH100020R9900	0.235
24	2	2	MCRC-0-22-AT-D	1SAH100026R9900	0.235
24 with Diode	2	2	MCRC-0-22-AT-DD	1SAH113324R9900	0.235
4 N.O. poles MCRC mini contactors relays with extended operating limits coil					
24[1]	4	0	MCRC-0-40-AT-WD	1SAH220410R9900	0.235
48[1]	4	0	MCRC-0-40-AT-WG	1SAH220463R9900	0.235
110[1]	4	0	MCRC-0-40-AT-WJ	1SAH220407R9900	0.235
125[1]	4	0	MCRC-0-40-AT-WL	1SAH220458R9900	0.235
220[1]	4	0	MCRC-0-40-AT-WN	1SAH220404R9900	0.235
3 N.O. + 1 N.C. poles mini contactors relays with extended operating limits coil					
24[1]	3	1	MCRC-0-31-AT-WD	1SAH220409R9900	0.235
48[1]	3	1	MCRC-0-31-AT-WG	1SAH100070R9900	0.235
110[1]	3	1	MCRC-0-31-AT-WJ	1SAH220406R9900	0.235
125[1]	3	1	MCRC-0-31-AT-WL	1SAH220457R9900	0.235
220[1]	3	1	MCRC-0-31-AT-WN	1SAH220403R9900	0.235
2 N.O. + 2 N.C. poles mini contactors relays with extended operating limits coil					
17 ... 32	2	2	MCRC-0-22-AT-WD	1SAH220408R9900	0.235
34 ... 62	2	2	MCRC-0-22-AT-WG	1SAH100082R9900	0.235
77 ... 143	2	2	MCRC-0-22-AT-WJ	1SAH107171R9900	0.235
87 ... 162	2	2	MCRC-0-22-AT-WL	1SAH220456R9900	0.235
154 ... 286	2	2	MCRC-0-22-AT-WN	1SAH220402R9900	0.235

Note : Other contact configuration available. Please consult your ABB local sales organization.
[1]With the extended operating limits coils:
- at nominal voltage, Uc, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages, -30% ≤ Uc ≤ +30%, can be used for the operation with a limitation of the number of auxiliary contacts.

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4-pole mini contactor relays with screw terminals

MCRI, MCRK



MCRI040AT



MCRK040AT

DC operated - low consumption

Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V DC					kg
DC operation 24 V / 1.2 W					
24	4	0	MCRI-0-40-AT-D	1SAH100530R9900	0.235
	3	1	MCRI-0-31-AT-D	1SAH100531R9900	0.235
	2	2	MCRI-0-22-AT-D	1SAH100532R9900	0.235
DC operation 24 V / 2 W					
24	4	0	MCRK-0-40-AT-D	1SAH100533R9900	0.235
	3	1	MCRK-0-31-AT-D	1SAH100534R9900	0.235
	2	2	MCRK-0-22-AT-D	1SAH100535R9900	0.235

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4-pole mini contactor relays for ring tongue ferrules

MCRA..R, MCRC..R, MCRK..R



MCRA040AR

AC operated

Rated control circuit voltage Uc		Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V 50 Hz	V 60 Hz					kg
4 N.O. poles						
24	24	4	0	MCRA-0-40-AR-1	1SAH102177R9900	0.170
110 ... 115	110 ... 120	4	0	MCRA-0-40-AR-J	1SAH102179R9900	0.170
220 ... 230	220 ... 230	4	0	MCRA-0-40-AR-6	1SAH102178R9900	0.170
3 N.O. + 1 N.C. poles						
24	24	3	1	MCRA-0-31-AR-1	1SAH102180R9900	0.170
110 ... 115	110 ... 120	3	1	MCRA-0-31-AR-J	1SAH102182R9900	0.170
220 ... 230	220 ... 230	3	1	MCRA-0-31-AR-6	1SAH102181R9900	0.170
2 N.O. + 2 N.C. poles						
24	24	2	2	MCRA-0-22-AR-1	1SAH102183R9900	0.170
110 ... 115	110 ... 120	2	2	MCRA-0-22-AR-J	1SAH100485R9900	0.170
220 ... 230	220 ... 230	2	2	MCRA-0-22-AR-6	1SAH102184R9900	0.170



MCRC040AR

DC operated

Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V DC					kg
12	4	0	MCRC-0-40-AR-B	1SAH101994R9900	0.245
	3	1	MCRC-0-31-AR-B	1SAH101996R9900	0.245
	2	2	MCRC-0-22-AR-B	1SAH101998R9900	0.245



MCRK040AR

DC operated - low consumption - 24 V / 2 W

Rated control circuit voltage Uc	Auxiliary contacts fitted		Type	Order code	Weight Pkg (1 pce)
V DC					kg
24	4	0	MCRK-0-40-AR-D	1SAH101995R9900	0.245
	3	1	MCRK-0-31-AR-D	1SAH101997R9900	0.245
	2	2	MCRK-0-22-AR-D	1SAH100540R9900	0.245

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Auxiliary contact blocks for MC1 and MC2 mini contactors

With screw terminals and specific screw terminals for ring tongue ferrules



MACN211AT



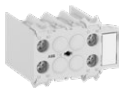
MACN422AT



MACL110AT

Screw terminals

Suitable for	Auxiliary contacts		Type	Order code	Weight Pkg (1 pce)
					kg
Front mounted instantaneous auxiliary contact blocks					
All MC1 and MC2 variants Contacts in accordance with EN 50012	1	1	MACN2-11-AT	1SAL100999R9906	0.030
	0	2	MACN2-02-AT	1SAL100998R9906	0.030
	3	1	MACN4-31-AT	1SAL100995R9906	0.040
	2	2	MACN4-22-AT	1SAL100996R9906	0.040
	1	3	MACN4-13-AT	1SAL100997R9906	0.040
All MC1 and MC2 variants Contacts in accordance with EN 50005	2	0	MARN2-20-AT	1SAL100994R9906	0.030
	1	1	MARN2-11-AT	1SAL100993R9906	0.030
	0	2	MARN2-02-AT	1SAL100992R9906	0.030
	4	0	MARN4-40-AT	1SAL100991R9906	0.040
	3	1	MARN4-31-AT	1SAL100990R9906	0.040
	2	2	MARN4-22-AT	1SAL100989R9906	0.040
	1	3	MARN4-13-AT	1SAL100988R9906	0.040
	0	4	MARN4-04-AT	1SAL100987R9906	0.040
Side mounted instantaneous auxiliary contact block					
All MC1 and MC2 variants Contacts in accordance with EN 50012	1	0	MACL1-10-AT	1SAL100560R9906	0.017
	0	1	MACL1-01-AT	1SAL100561R9906	0.017
All MC1 and MC2 variants Contacts in accordance with EN 50005	1	0	MARL1-10-ATS	1SAL100519R9906	0.017
	0	1	MARL1-01-ATS	1SAL100520R9906	0.017



MARN211AR



MARN422AR



MACL110AR

Specific screw terminals for ring tongue ferrules

Suitable for	Auxiliary contacts		Type	Order code	Weight Pkg (1 pce)
					kg
Front mounted instantaneous auxiliary contact blocks					
All MC1 and MC2 variants Contacts in accordance with EN 50012	1	1	MACN2-11-AR	1SAL103557R9906	0.030
	0	2	MACN2-02-AR	1SAL103558R9906	0.030
	3	1	MACN4-31-AR	1SAL103559R9906	0.040
	2	2	MACN4-22-AR	1SAL103560R9906	0.040
	1	3	MACN4-13-AR	1SAL103561R9906	0.040
All MC1 and MC2 variants Contacts in accordance with EN 50005	2	0	MARN2-20-AR	1SAL103349R9906	0.030
	1	1	MARN2-11-AR	1SAL103350R9906	0.030
	0	2	MARN2-02-AR	1SAL103351R9906	0.030
	4	0	MARN4-40-AR	1SAL103352R9906	0.040
	3	1	MARN4-31-AR	1SAL103353R9906	0.040
	2	2	MARN4-22-AR	1SAL103354R9906	0.040
	1	3	MARN4-13-AR	1SAL103355R9906	0.040
	0	4	MARN4-04-AR	1SAL103300R9906	0.040
Side mounted instantaneous auxiliary contact block					
All MC1 and MC2 variants Contacts in accordance with EN 50012	1	0	MACL1-10-AR	1SAL103555R9906	0.017
	0	1	MACL1-01-AR	1SAL103556R9906	0.017
All MC1 and MC2 variants Contacts in accordance with EN 50005	1	0	MARL1-10-ARS	1SAL103299R9906	0.017
	0	1	MARL1-01-ARS	1SAL103298R9906	0.017

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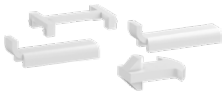
Other accessories for MC1 and MC2 mini contactors



MP0AAE1



MREBC10AC2



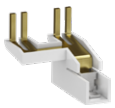
MMH0



WKMIU



MVB0R



MVP0C



MVB0L

Suitable for	Rated control circuit voltage Uc			Protection type	Type	Order code	Pkg qty	Weight (1 pce)
	V DC	V 50 Hz	V 60 Hz					kg
Surge suppressors for contactor coils								
All MC1 and MC2 DC operated variants	6 ... 250	–	–	Diode	MP0C-AE3	1SAL100546R9906	1	0.006
All MC1 and MC2 AC operated variants	–	12 ... 60	12 ... 60	R/C	MP0A-AE1	1SAL100544R9906	1	0.006
	–	72 ... 250	72 ... 250	R/C	MP0A-AE2	1SAL100545R9906	1	0.006
All MC1 and MC2 variants	24 ... 48	24 ... 48	24 ... 48	Varistor	MP0D-AE4	1SAL100536R9906	1	0.006
	50 ... 127	50 ... 127	50 ... 127	Varistor	MP0D-AE5	1SAL204848R9906	1	0.006
	130 ... 250	130 ... 250	130 ... 250	Varistor	MP0D-AE6	1SAL204849R9906	1	0.006
Electronic timers								
All MC1 and MC2 variants	24 ... 250	24 ... 250	24 ... 250	0.5 ... 60 sec.	MREB-C10-AC2	1SAL100541R9906	1	0.040
	-	-	-	0.2 ... 24 sec	MREB-C20-AC2	1SAL100542R9906	1	0.040
DIN rail adapter for electronic timers								
All MREBC variants					MVB-0R	1SAL100543R9906	1	0.003
Mechanical interlock								
All MC1 and MC2 variants					MMH-0	1SAL100547R9906	1	0.003
Parallel connecting link								
All MC1 and MC2 variants					MVP-0C	1SAL100600R9906	1	0.010
Connection sets for reversing contactors								
All MC1 and MC2 variants					WKM-IU	1SAL101421R9906	1	0.030
Lütze® rail adapter for contactors and contactor relays								
All MC1 and MC2 variants					MVB-0L	1SAL101830R9906	30	0.002

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Auxiliary contact blocks for MCR mini contactor relays

With screw terminals and specific screw terminals for ring tongue ferrules



MARN211AT



MARN422AT



MARL110AT

Screw terminals

Suitable for	Auxiliary contacts		Type	Order code	Weight Pkg (1 pce)
					kg
Front mounted instantaneous auxiliary contact blocks					
All MCR variants Contacts in accordance with EN 50005	2	0	MARN2-20-AT	1SAL100994R9906	0.030
	1	1	MARN2-11-AT	1SAL100993R9906	0.030
	0	2	MARN2-02-AT	1SAL100992R9906	0.030
	4	0	MARN4-40-AT	1SAL100991R9906	0.040
	3	1	MARN4-31-AT	1SAL100990R9906	0.040
	2	2	MARN4-22-AT	1SAL100989R9906	0.040
	1	3	MARN4-13-AT	1SAL100988R9906	0.040
	0	4	MARN4-04-AT	1SAL100987R9906	0.040
Side mounted instantaneous auxiliary contact block					
All MCR variants	1	0	MARL1-10-AT	1SAL100513R9906	0.017
	0	1	MARL1-01-AT	1SAL100514R9906	0.017
	1	0	MARL1-10-ATS	1SAL100519R9906	0.017
	0	1	MARL1-01-ATS	1SAL100520R9906	0.017



MARN211AR



MARN422AR



MARL110AR

Specific screw terminals for ring tongue ferrules

Suitable for	Auxiliary contacts		Type	Order code	Weight Pkg (1 pce)
					kg
Front mounted instantaneous auxiliary contact blocks					
All MCR variants Contacts in accordance with EN 50005	2	0	MARN2-20-AR	1SAL103349R9906	0.030
	1	1	MARN2-11-AR	1SAL103350R9906	0.030
	0	2	MARN2-02-AR	1SAL103351R9906	0.030
	4	0	MARN4-40-AR	1SAL103352R9906	0.040
	3	1	MARN4-31-AR	1SAL103353R9906	0.040
	2	2	MARN4-22-AR	1SAL103354R9906	0.040
	1	3	MARN4-13-AR	1SAL103355R9906	0.040
	0	4	MARN4-04-AR	1SAL103300R9906	0.040
Side mounted instantaneous auxiliary contact block					
All MCR variants	1	0	MARL1-10-AR	1SAL103356R9906	0.017
	0	1	MARL1-01-AR	1SAL103357R9906	0.017
	1	0	MARL1-10-ARS	1SAL103299R9906	0.017
	0	1	MARL1-01-ARS	1SAL103298R9906	0.017

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Other accessories for MCR mini contactor relays



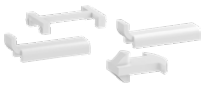
MP0AAE1



MREBC10AC2



MVB0R



MMH0



MVB0L

Suitable for	Rated control circuit voltage Uc			Protection type	Type	Order code	Pkg qty	Weight (1 pce)
	V DC	V 50 Hz	V 60 Hz					kg
Surge suppressors for contactor coils								
All MCR DC operated variants	6 ... 250	–	–	Diode	MP0C-AE3	1SAL100546R9906	1	0.006
All MC1 and MC2 AC operated variants	–	12 ... 60	12 ... 60	R/C	MP0A-AE1	1SAL100544R9906	1	0.006
	–	72 ... 250	72 ... 250	R/C	MP0A-AE2	1SAL100545R9906	1	0.006
All MCR variants	24 ... 48	24 ... 48	24 ... 48	Varistor	MP0D-AE4	1SAL100536R9906	1	0.006
	50 ... 127	50 ... 127	50 ... 127	Varistor	MP0D-AE5	1SAL204848R9906	1	0.006
	130 ... 250	130 ... 250	130 ... 250	Varistor	MP0D-AE6	1SAL204849R9906	1	0.006
Electronic timers								
All MCR variants	24 ... 250	24 ... 250	24 ... 250	0.5 ... 60 sec.	MREB-C10-AC2	1SAL100541R9906	1	0.040
	-	-	-	0.2 ... 24 sec	MREB-C20-AC2	1SAL100542R9906	1	0.040
DIN rail adapter for electronic timers								
All MREBC variants					MVB-0R	1SAL100543R9906	1	0.003
Mechanical interlock								
All MCR variants					MMH-0	1SAL100547R9906	1	0.003
Lütze® rail adapter for contactors and contactor relays								
All MCR variants					MVB-0L	1SAL101830R9906	30	0.002

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Thermal and electronic overload relays

Thermal overload relays






IEC: rated operational power AC-3	400 V	0.06 ... 7.5 kW	0.06 ... 7.5 kW	0.06 ... 18.5 kW	11 ... 37 kW
UL/CSA: 3-phase hp-ratings	480 V	1/2 ... 10 hp	1/2 ... 10 hp	1/2 ... 25 hp	15 ... 50 hp
Fitting to contactors		B6, B7	AS09 ... AS16	AF09 ... AF38	AF40, AF52, AF65
Type		**T16**	**T16**	**TF42**	**TF65**
Current range		0.10 ... 16 A	0.10 ... 16 A	0.10 ... 38 A	22 ... 67 A
Trip class		10	10	10	10
Single mounting kit		DB16	DB16	DB42	DB65

Electronic overload relays with integrated CT






IEC: rated operational power AC-3	400 V	0.06 ... 7.5 kW	0.06 ... 7.5 kW	4 ... 22 kW	7.5 ... 37 kW
UL/CSA: 3-phase hp-ratings	480 V	1/2 ... 10 hp	1/2 ... 10 hp	5 ... 30 hp	15 ... 50 hp
Fitting to contactors		B6, B7, BC6, BC7, VB6, VB7, VBC6, VBC7	AF09 ... AF38	AF26 ... AF38	AF40, AF52, AF65
Type		**E16DU**	**EF19**	**EF45**	**EF65**
Current range		0.10 ... 18.9 A	0.10 ... 18.9 A	9 ... 45 A	20 ... 70 A
Trip class		10E, 20E, 30E selectable			
Single mounting kit		DB16E	DB19EF	DB45EF	-

Electronic overload relays with external separate CT



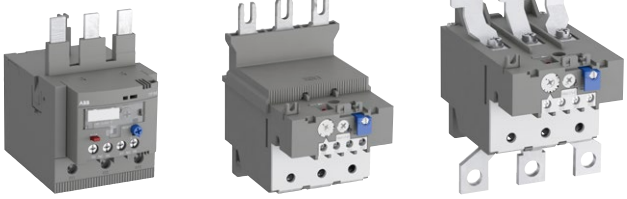


IEC: rated operational power AC-3	400 V	75 ... 250 kW	132 ... 400 kW	250 ... 710 kW
UL/CSA: 3-phase hp-ratings	480 V	100 ... 400 hp	200 ... 500 hp	600 ... 900 hp
Fitting to contactors		AF400, AF460	AF580, AF750, AF1250	AF1350, AF1650, AF2050
Type		**EF460**	**EF750**	**EF1250DU**
Current range		150 ... 500 A	250 ... 800 A	375 ... 1250 A
Trip class		10E, 20E, 30E selectable		

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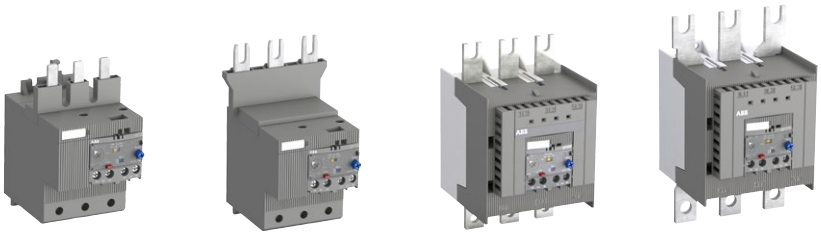
Thermal and electronic overload relays

Thermal overload relays



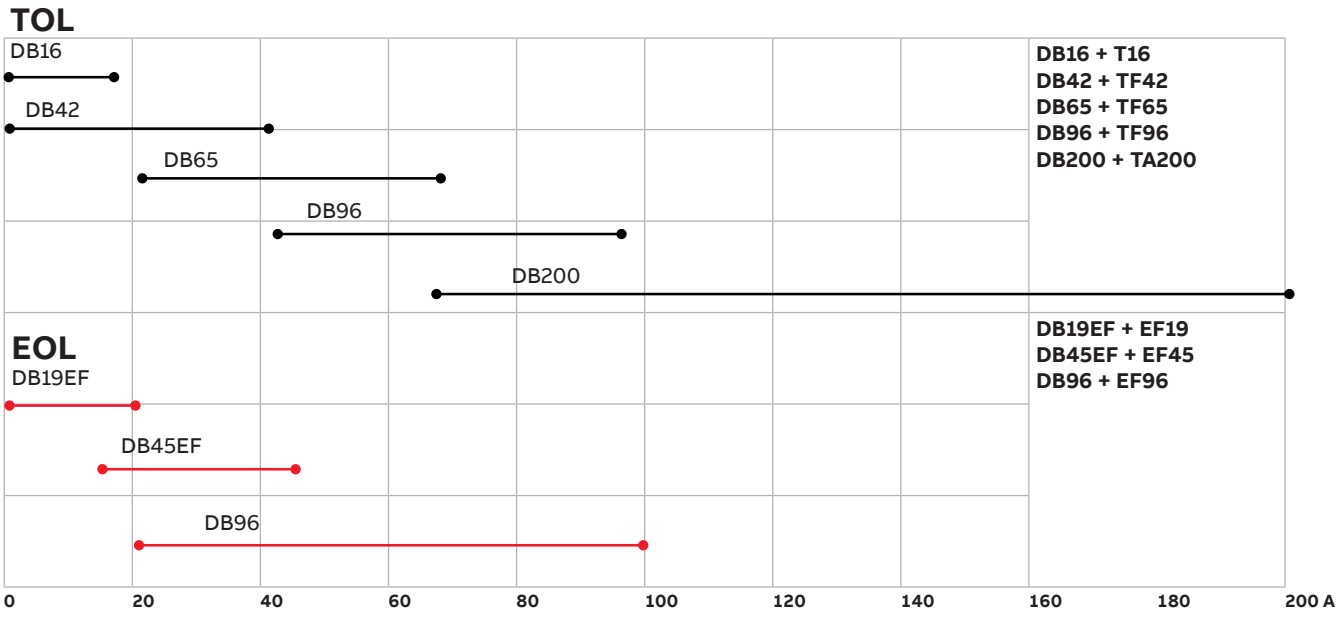
IEC: rated operational power AC-3	400 V	18.5 ... 45 kW	37 ... 75 kW	37 ... 110 kW	
UL/CSA: 3-phase hp-ratings	480 V	30 ... 75 hp	50 ... 100 hp	50 ... 150 hp	
Fitting to contactors		AF80, AF96	AF116, AF140, AF146	AF190, AF205	
Type		**TF96**	**TF140DU**	**TA200DU**	
Current range		40 ... 96 A	66 ... 142 A	66 ... 200 A	
Trip class		10	10A	10A	
Single mounting kit		DB96	-	DB200	

Electronic overload relays with integrated CT



IEC: rated operational power AC-3	400 V	22 ... 55 kW	30 ... 75 kW	37 ... 110 kW	75 ... 200 kW
UL/CSA: 3-phase hp-ratings	480 V	30 ... 75 hp	50 ... 100 hp	50 ... 150 hp	100 ... 300 hp
Fitting to contactors		AF80, AF96	AF116, AF140, AF146	AF190, AF205	AF265, AF305, AF370
Type		**EF96**	**EF146**	**EF205**	**EF370**
Current range		20 ... 100 A	54 ... 150 A	63 ... 210 A	115 ... 380 A
Trip class		10E, 20E, 30E selectable			
Single mounting kit		DB96	-	-	-

Single mounting kit overview



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Thermal overload relays
T16



T16



T16 + DB16



KPR-101L



DB16

0.10 to 16.0 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AS09...AS16, B6 and B7 all variants					
0.10 ... 0.13	0.5 A, fuse type T	10	T16-0.13	1SAZ711201R1005	0.100
0.13 ... 0.17	1.0 A, fuse type T	10	T16-0.17	1SAZ711201R1008	0.100
0.17 ... 0.23	1.0 A, fuse type T	10	T16-0.23	1SAZ711201R1009	0.100
0.23 ... 0.31	1.0 A, fuse type T	10	T16-0.31	1SAZ711201R1013	0.100
0.31 ... 0.41	2.0 A, fuse type gG	10	T16-0.41	1SAZ711201R1014	0.100
0.41 ... 0.55	2.0 A, fuse type gG	10	T16-0.55	1SAZ711201R1017	0.100
0.55 ... 0.74	4.0 A, fuse type gG	10	T16-0.74	1SAZ711201R1021	0.100
0.74 ... 1.00	6.0 A, fuse type gG	10	T16-1.0	1SAZ711201R1023	0.100
1.00 ... 1.30	6.0 A, fuse type gG	10	T16-1.3	1SAZ711201R1025	0.100
1.30 ... 1.70	10.0 A, fuse type gG	10	T16-1.7	1SAZ711201R1028	0.100
1.70 ... 2.30	10.0 A, fuse type gG	10	T16-2.3	1SAZ711201R1031	0.100
2.30 ... 3.10	10.0 A, fuse type gG	10	T16-3.1	1SAZ711201R1033	0.100
3.10 ... 4.20	20.0 A, fuse type gG	10	T16-4.2	1SAZ711201R1035	0.100
4.20 ... 5.70	20.0 A, fuse type gG	10	T16-5.7	1SAZ711201R1038	0.100
5.70 ... 7.60	35.0 A, fuse type gG	10	T16-7.6	1SAZ711201R1040	0.100
7.60 ... 10.0	35.0 A, fuse type gG	10	T16-10	1SAZ711201R1043	0.104
10.0 ... 13.0	40.0 A, fuse type gG	10	T16-13	1SAZ711201R1045	0.104
13.0 ... 16.0	40.0 A, fuse type gG	10	T16-16	1SAZ711201R1047	0.104

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	T16	DB16	1SAZ701901R0001	0.032
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.027

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Thermal overload relays
TF42


TF42


TF42 + DB42

0.10 to 38.0 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AF09...AF38 contactors					
0.10 ... 0.13	0.5 A, fuse type T	10	TF42-0.13	1SAZ721201R1005	0.130
0.13 ... 0.17	1.0 A, fuse type T	10	TF42-0.17	1SAZ721201R1008	0.130
0.17 ... 0.23	1.0 A, fuse type T	10	TF42-0.23	1SAZ721201R1009	0.130
0.23 ... 0.31	1.0 A, fuse type T	10	TF42-0.31	1SAZ721201R1013	0.130
0.31 ... 0.41	2.0 A, fuse type gG	10	TF42-0.41	1SAZ721201R1014	0.130
0.41 ... 0.55	2.0 A, fuse type gG	10	TF42-0.55	1SAZ721201R1017	0.130
0.55 ... 0.74	4.0 A, fuse type gG	10	TF42-0.74	1SAZ721201R1021	0.130
0.74 ... 1.00	6.0 A, fuse type gG	10	TF42-1.0	1SAZ721201R1023	0.130
1.00 ... 1.30	6.0 A, fuse type gG	10	TF42-1.3	1SAZ721201R1025	0.130
1.30 ... 1.70	10.0 A, fuse type gG	10	TF42-1.7	1SAZ721201R1028	0.130
1.70 ... 2.30	10.0 A, fuse type gG	10	TF42-2.3	1SAZ721201R1031	0.130
2.30 ... 3.10	10.0 A, fuse type gG	10	TF42-3.1	1SAZ721201R1033	0.130
3.10 ... 4.20	20.0 A, fuse type gG	10	TF42-4.2	1SAZ721201R1035	0.130
4.20 ... 5.70	20.0 A, fuse type gG	10	TF42-5.7	1SAZ721201R1038	0.130
5.70 ... 7.60	35.0 A, fuse type gG	10	TF42-7.6	1SAZ721201R1040	0.130
7.60 ... 10.0	35.0 A, fuse type gG	10	TF42-10	1SAZ721201R1043	0.130
10.0 ... 13.0	40.0 A, fuse type gG	10	TF42-13	1SAZ721201R1045	0.130
13.0 ... 16.0	40.0 A, fuse type gG	10	TF42-16	1SAZ721201R1047	0.130
16.0 ... 20.0	63.0 A, fuse type gG	10	TF42-20	1SAZ721201R1049	0.145
20.0 ... 24.0	63.0 A, fuse type gG	10	TF42-24	1SAZ721201R1051	0.145
24.0 ... 29.0	63.0 A, fuse type gG	10	TF42-29	1SAZ721201R1052	0.145
29.0 ... 35.0	80.0 A, fuse type gG	10	TF42-35	1SAZ721201R1053	0.145
35.0 ... 38.0/40.0	80.0 A, fuse type gG	10	TF42-38	1SAZ721201R1055	0.145


DB42

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	TF42	DB42	1SAZ701902R0001	0.087
Reset push button	EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.019
Remote reset coil 24-30 V AC/DC	TF42, TF65, TF96	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V AC/DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V AC/DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V AC/DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V DC		DRS-F-TF-01	1SAZ701904R1001	0.077
Remote stop coil 48-60 V DC		DRS-F-TF-02	1SAZ701904R1002	0.077
Remote stop coil 110-127 V DC		DRS-F-TF-03	1SAZ701904R1003	0.077
Remote stop coil 220-240 V DC		DRS-F-TF-04	1SAZ701904R1004	0.077


KPR-101L


DRS-F

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Thermal overload relays
TF65


TF65


DB65


DB65 + TF65


KPR-101L


DRS-F

22.0 to 67.0 A

Setting range A	Short-circuit protective device	Trip class	Type[1]	Order code	Weight (1 pce) kg
Suitable for AF40...AF65 contactors					
22.0 ... 28.0	80 A, gG Type Fuses	10	TF65-28	1SAZ811201R1001	0.456
25.0 ... 33.0	80 A, gG Type Fuses	10	TF65-33	1SAZ811201R1002	0.456
30.0 ... 40.0	100 A, gG Type Fuses	10	TF65-40	1SAZ811201R1003	0.456
36.0 ... 47.0	125 A, gG Type Fuses	10	TF65-47	1SAZ811201R1004	0.456
44.0 ... 53.0	125 A, gG Type Fuses	10	TF65-53	1SAZ811201R1005	0.456
50.0 ... 60.0	125 A, gG Type Fuses	10	TF65-60	1SAZ811201R1006	0.466
57.0 ... 67.0	160 A, gG Type Fuses	10	TF65-67	1SAZ811201R1007	0.466

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	TF65	DB65	1SAZ801901R1001	0.132
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.019
Remote reset coil 24-30 V AC / DC	TF42, TF65, TF96	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V AC / DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V AC / DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V AC / DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V DC		DRS-F-TF-01	1SAZ701904R1001	0.077
Remote stop coil 48-60 V DC		DRS-F-TF-02	1SAZ701904R1002	0.077
Remote stop coil 110-127 V DC		DRS-F-TF-03	1SAZ701904R1003	0.077
Remote stop coil 220-240 V DC		DRS-F-TF-04	1SAZ701904R1004	0.077

[1]ATEX is valid for products, produced from week 26, 2015.

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Thermal overload relays
TF96


TF96


DB96


DB96 + TF96


KPR-101L


DRS-F

40.0 to 96.0 A

Setting range A	Short-circuit protective device	Trip class	Type[1]	Order code	Weight (1 pce) kg
Suitable for AF80, AF96 contactors					
40.0 ... 51.0	125 A, gG Type Fuses	10	TF96-51	1SAZ911201R1001	0.620
48.0 ... 60.0	160 A, gG Type Fuses	10	TF96-60	1SAZ911201R1002	0.620
57.0 ... 68.0	160 A, gG Type Fuses	10	TF96-68	1SAZ911201R1003	0.620
65.0 ... 78.0	200 A, gG Type Fuses	10	TF96-78	1SAZ911201R1004	0.620
75.0 ... 87.0	200 A, gG Type Fuses	10	TF96-87	1SAZ911201R1005	0.620
84.0 ... 96.0	250 A, gG Type Fuses	10	TF96-96	1SAZ911201R1006	0.630

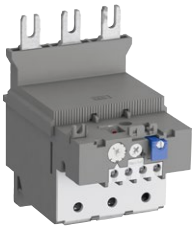
Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	TF96, EF96	DB96	1SAZ901901R1001	0.190
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.019
Remote reset coil 24-30 V AC/DC	TF42, TF65, TF96	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V AC/DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V AC/DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V AC/DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V DC		DRS-F-TF-01	1SAZ701904R1001	0.077
Remote stop coil 48-60 V DC		DRS-F-TF-02	1SAZ701904R1002	0.077
Remote stop coil 110-127 V DC		DRS-F-TF-03	1SAZ701904R1003	0.077
Remote stop coil 220-240 V DC		DRS-F-TF-04	1SAZ701904R1004	0.077

[1]ATEX is valid for products, produced from week 26, 2015.

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Thermal overload relays
TF140DU


TF140DU


KPR-101L

66 to 142 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AF116...AF140 contactors					
66 ... 90	200 A, fuse type gG	10A	TF140DU-90	1SAZ431201R1001	0.820
80 ... 110	224 A, fuse type gG	10A	TF140DU-110	1SAZ431201R1002	0.820
100 ... 135	224 A, fuse type gG	10A	TF140DU-135	1SAZ431201R1003	0.820
110 ... 142	250 A, fuse type gG	10A	TF140DU-142	1SAZ431201R1004	0.820
66 ... 90	200 A, fuse type gG	10A	TF140DU-90-V1000[1]	1SAZ431301R1001	0.820
80 ... 110	224 A, fuse type gG	10A	TF140DU-110-V1000[1]	1SAZ431301R1002	0.820
100 ... 135	224 A, fuse type gG	10A	TF140DU-135-V1000[1]	1SAZ431301R1003	0.820
110 ... 142	250 A, fuse type gG	10A	TF140DU-142-V1000[1]	1SAZ431301R1004	0.820

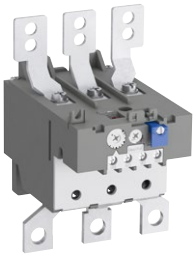
[1]Note: ATEX variant

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.027

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Thermal overload relays
TA200DU


TA200DU



KPR-101L

66 to 200 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AF145...AF2050 contactors					
66 ... 90	200 A, fuse type gG / 125 A aM	10A	TA200DU-90	1SAZ421201R1001	0.755
80 ... 110	224 A, fuse type gG / 160 A aM	10A	TA200DU-110	1SAZ421201R1002	0.760
100 ... 135	224 A, fuse type gG / 200 A aM	10A	TA200DU-135	1SAZ421201R1003	0.760
110 ... 150	250 A, fuse type gG / 200 A aM	10A	TA200DU-150	1SAZ421201R1004	0.760
130 ... 175	315 A, fuse type gG / 250 A aM	10A	TA200DU-175	1SAZ421201R1005	0.770
150 ... 200	315 A, fuse type gG / 250 A aM	10A	TA200DU-200	1SAZ421201R1006	0.785
66 ... 90	200 A, fuse type gG / 125 A aM	10A	TA200DU-90-V1000[1]	1SAZ421301R1001	0.755
80 ... 110	224 A, fuse type gG / 160 A aM	10A	TA200DU-110-V1000[1]	1SAZ421301R1002	0.760
100 ... 135	224 A, fuse type gG / 200 A aM	10A	TA200DU-135-V1000[1]	1SAZ421301R1003	0.760
110 ... 150	250 A, fuse type gG / 200 A aM	10A	TA200DU-150-V1000[1]	1SAZ421301R1004	0.760
130 ... 175	315 A, fuse type gG / 250 A aM	10A	TA200DU-175-V1000[1]	1SAZ421301R1005	0.770
150 ... 200	315 A, fuse type gG / 250 A aM	10A	TA200DU-200-V1000[1]	1SAZ421301R1006	0.785

[1]ATEX variant

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Terminal shroud	TA200DU	LT200/A	1SAZ401901R1001	0.090
Single mounting kit	TA200DU	DB200	1SAZ401110R0001	0.225
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.027

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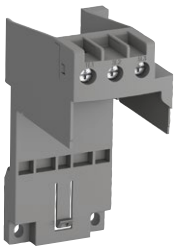
Electronic overload relays
EF19, EF45



EF19-18.9



EF45-30



DB19EF



DB45EF



KPR-101L



DRS-F

0.10 to 45.0 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
EF19 electronic overload relays, suitable for AF09 ... AF26[1]					
0.10 ... 0.32	1 A, fuse type gG	10E, 20E, 30E	EF19-0.32	1SAX121001R1101	0.158
0.30 ... 1.00	4 A, fuse type gG	10E, 20E, 30E	EF19-1.0	1SAX121001R1102	0.158
0.80 ... 2.70	10 A, fuse type gG	10E, 20E, 30E	EF19-2.7	1SAX121001R1103	0.158
1.90 ... 6.30	20 A, fuse type gG	10E, 20E, 30E	EF19-6.3	1SAX121001R1104	0.158
5.70 ... 18.9	50 A, fuse type gG	10E, 20E, 30E	EF19-18.9	1SAX121001R1105	0.158
EF45 electronic overload relays, suitable for AF26 ... AF38[1]					
9.00 ... 30.0	160 A, fuse type gG	10E, 20E, 30E	EF45-30	1SAX221001R1101	0.362
15.0 ... 45.0	160 A, fuse type gG	10E, 20E, 30E	EF45-45	1SAX221001R1102	0.362

[1]ATEX is valid for products produced from week 42, 2014. IECEx is valid for products produced from week 15, 2017.

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	E16DU	DB16E	1SAX101110R0001	0.035
Single mounting kit	EF19	DB19EF	1SAX101910R1001	0.046
Single mounting kit	EF45	DB45EF	1SAX201910R0001	0.100
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.019
Remote reset coil 24-30 V DC	EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460, EF750	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V AC/DC		DRS-F-EF-01	1SAX101911R1011	0.077
Remote stop coil 48-60 V AC/DC		DRS-F-EF-02	1SAX101911R1012	0.077
Remote stop coil 110-127 V AC/DC		DRS-F-EF-03	1SAX101911R1013	0.077
Remote stop coil 220-240 V AC/DC		DRS-F-EF-04	1SAX101911R1014	0.077

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Electronic overload relays
EF65, EF96, EF146


EF65-70


EF96-100


EF146-150


DB96


DB96 + EF96


KPR-101L


DRS-F

20 to 150 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AF40, AF52, AF65					
20 ... 56	160 A, fuse type gG	10E, 20E, 30E	EF65-56[1]	1SAX331001R1102	0.821
25 ... 70	160 A, fuse type gG	10E, 20E, 30E	EF65-70[1]	1SAX331001R1101	0.821
Suitable for AF80, AF96					
20 ... 56	160A, fuse type gG	10E, 20E, 30E	EF96-56[1]	1SAX341001R1102	0.802
36 ... 100	200 A, fuse type gG	10E, 20E, 30E	EF96-100[1]	1SAX341001R1101	0.802
Suitable for AF116, AF140, AF146					
54 ... 150	315 A, fuse type gG	10E, 20E, 30E	EF146-150[1]	1SAX351001R1101	0.879

[1] ATEX is valid for products produced from week 42, 2014. ATEX certification is valid for EF65-56 produced from week 47, 2015.IECEx is valid for products produced from week 15, 2017.

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Single mounting kit	EF96, TF96	DB96	1SAZ901901R1001	0.190
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.019
Remote reset coil 24-30 V DC	EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460, EF750	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V AC/DC		DRS-F-EF-01	1SAX101911R1011	0.077
Remote stop coil 48-60 V AC/DC		DRS-F-EF-02	1SAX101911R1012	0.077
Remote stop coil 110-127 V AC/DC		DRS-F-EF-03	1SAX101911R1013	0.077
Remote stop coil 220-240 V AC/DC		DRS-F-EF-04	1SAX101911R1014	0.077

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Electronic overload relays
EF205, EF370



EF205-210

63 to 380 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
Suitable for AF145, AF185, AF190, AF205					
63 ... 210	1250 A, fuse type gG	10E, 20E, 30E	EF205-210[1]	1SAX531001R1101	1.210
Suitable for AF210, AF260, AF265, AF300, AF305, AF370					
115 ... 380	1600 A, fuse type gG	10E, 20E, 30E	EF370-380[1]	1SAX611001R1101	1.430

[1] ATEX is valid for products produced from week 42, 2015. IECEx is valid for products produced from week 15, 2017.



EF370-380

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.027
Terminal shroud	EF205	LT200E	1SAX501904R0001	0.085
Terminal shroud	EF370	LT320E	1SAX601904R0001	0.105
Remote reset coil 24-30 V DC	EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460, EF750	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V AC/DC		DRS-F-EF-01	1SAX101911R1011	0.077
Remote stop coil 48-60 V AC/DC		DRS-F-EF-02	1SAX101911R1012	0.077
Remote stop coil 110-127 V AC/DC		DRS-F-EF-03	1SAX101911R1013	0.077
Remote stop coil 220-240 V AC/DC		DRS-F-EF-04	1SAX101911R1014	0.077



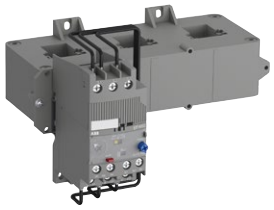
KPR-101L



DRS-F

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Electronic overload relays
EF460, EF750, EF1250DU


EF460-500


EF750-800


EF1250DU-1250



KPR-101L


DRS-F

150 to 1250 A

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
EF460 electronic overload relay, suitable for AF400, AF460[1]					
150 ... 500	690 V: 630 A, Type gG 1000 V: 1600 A, Type gG	10E, 20E, 30E	EF460-500	1SAX721001R1101	1.170
EF750 electronic overload relay, suitable for AF580, AF750[1]					
250 ... 800	690 V: 800 A, Type gG 1000 V: 1600 A, Type gG	10E, 20E, 30E	EF750-800	1SAX821001R1101	3.905
EF1250DU electronic overload relay, suitable for AF1350, AF1650, AF2050					
375 ... 1250	500 V: 1600 A, Type gG	10E, 20E, 30E	EF1250DU-1250	1SFA739001R1001	

[1] ATEX is valid for products produced from week 42, 2014. IECEx is valid for products produced from week 15, 2017.

Accessories

Description	Suitable for	Type	Order code	Weight (1 pce) kg
Reset push button	E16, EF, TF, T16, TA200	KPR-101L	1SFA616162R1014	0.027
Terminal shroud	EF460	LT460EF	1SAX701904R0002	0.320
Terminal shroud	EF750	LT750EF	1SAX801904R0002	0.440
DT500/AF460-S Mounting Kit short for mounting of EF460DU on AF460	EF460	DT500/AF460-S	1SAX701902R1011	0.635
DT500/AF460-L Mounting Kit long for mounting of EF460DU on AF460	EF460	DT500/AF460-L	1SAX701902R1001	0.740
DT800/AF750-S Mounting Kit short for mounting of EF750DU on AF750	EF750	DT800/AF750-S	1SAX801902R1011	1.000
DT800/AF750-L Mounting Kit long for mounting of EF750DU on AF750	EF750	DT800/AF750-L	1SAX801902R1001	1.475
Remote reset coil 24-30 V DC	EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460, EF750	DRS-F-01	1SAX101911R1001	0.077
Remote reset coil 48-60 V DC		DRS-F-02	1SAX101911R1002	0.077
Remote reset coil 110-127 V DC		DRS-F-03	1SAX101911R1003	0.077
Remote reset coil 220-240 V DC		DRS-F-04	1SAX101911R1004	0.077
Remote stop coil 24-30 V AC/DC		DRS-F-EF-01	1SAX101911R1011	0.077
Remote stop coil 48-60 V AC/DC		DRS-F-EF-02	1SAX101911R1012	0.077
Remote stop coil 110-127 V AC/DC		DRS-F-EF-03	1SAX101911R1013	0.077
Remote stop coil 220-240 V AC/DC		DRS-F-EF-04	1SAX101911R1014	0.077

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Thermal and electronic overload relays
General accessories



WRB-400



WRH-F

Suitable for	Description	Length mm	Type	Order code	Weight (1 pce) kg
Holder					
TF42, TF65, TF96, EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460, EF750	Holder for tool less direct mounting	–	WRH-F	1SAZ701903R1001	0.006
Bowden wire with actuator					
WRH-F	Bowden wire with actuator, hole diameter: 7.3 mm, maximum panel thickness: 12 mm	400	WRB-400	1SAZ701903R1011	0.030
		600	WRB-600	1SAZ701903R1012	0.040
		1000	WRB-1000	1SAZ701903R1013	0.060
IP54 gasket					
WRB-400 WRB-600 WRB-1000	IP54 Panel seal gasket	–	WRBG	1SAZ701903R1030	0.037

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CONTROL SECTION 3

Lighting contactors



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Visit our lighting contactor information page at:
electrification.us.abb.com/products/contactors

Authorized ABB distributors: please refer to our new product configurators on empower.

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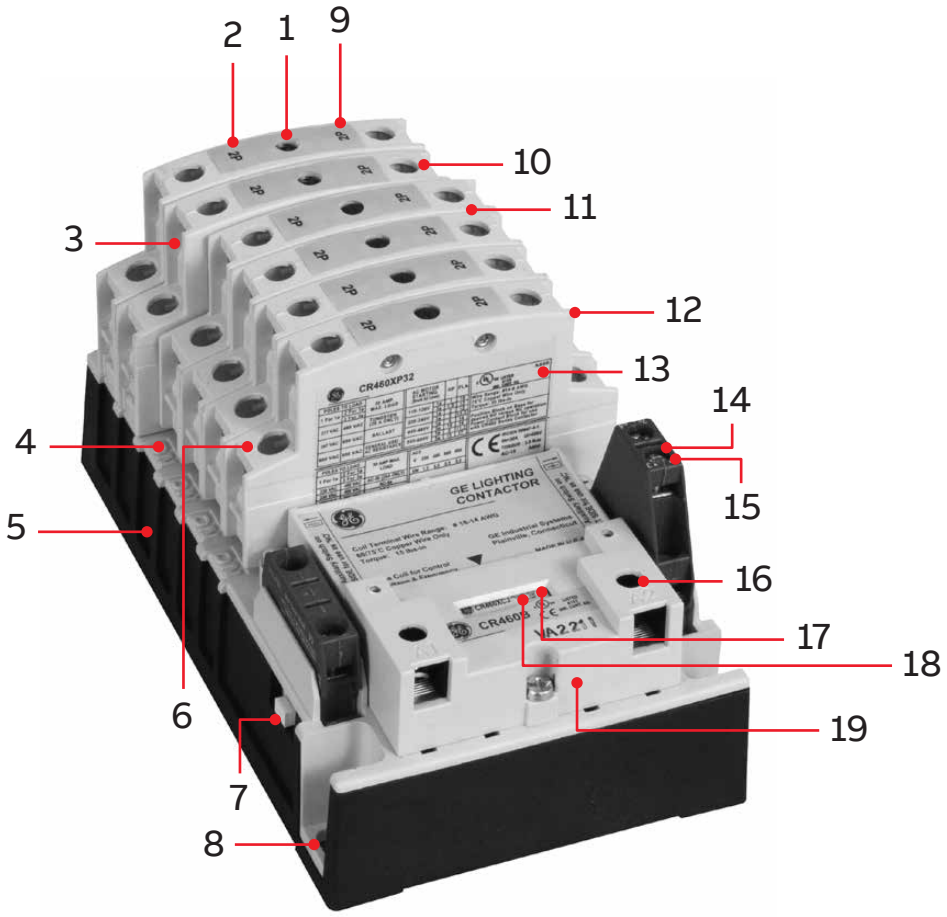
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Electrical features and benefits



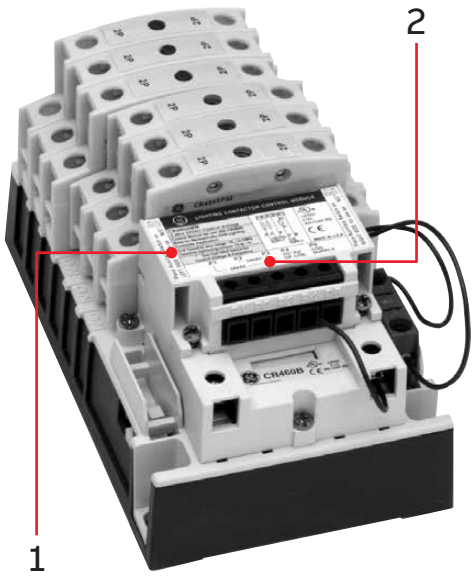
Electrically held contactor

CR460 Series lighting contactors deliver unprecedented versatility in application, simplicity in configuration and performance in operation. Ingenious design, rugged construction and a host of truly useful features make them uniquely appealing to all those who use them.

1. Contact position indication - when button protrudes, contact is closed.
2. Power poles are available as single or double poles, creating 74 different circuit combinations.
3. Convenient side access field power wiring
4. Contact configuration indicator
5. Standard base for all pole configurations
6. Robust pole terminals accept up to two #8 AWG wires
7. Manual operator
8. Fast, sure three-point mounting
9. Enclosed contacts resist contaminants for greater reliability
10. Combination slotted/#2 Phillips screws
11. Common, easily installed power poles change from NO to NC (or vice versa) simply by unlatching and rotating 180°
12. Power poles rated for the range of tasks:
    - 30A rated contacts
    - 15A motor rated
    - A600 Pilot duty rated
    - LED driver/electronic ballast rating: 3A/277V or 10A/120V
13. Easy-to-read rating label
14. Auxiliary contacts, rated A600, are suitable for use on low level circuits down to 12V, 5mA
15. Plug-in auxiliary contacts are NO when installed on the left side of the base, NC on the right
16. Finger and back-of-hand safe power terminals
17. Quick-view coil voltage
18. Easy-change coil
19. Low magnetic noise results in quiet operation

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Mechanical features and benefits

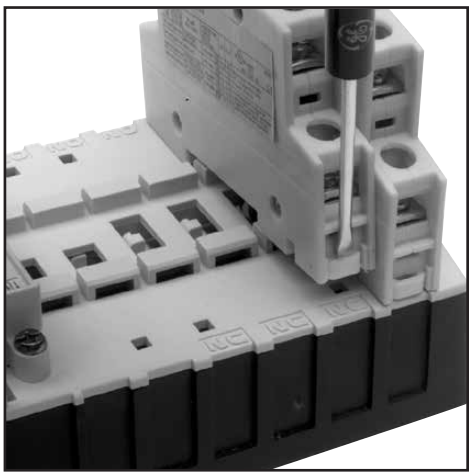


Mechanically held contactor

Mechanically held contactors also feature:

1. Two-or-three-wire control module:
   - low input VA permits long wire runs
   - verified contact status and has built-in delays that minimize excessively frequent signals from faulty controllers
   - come in a wide range of input voltages. Four modules cover input voltages from 24-277 VAC and 12-24 VDC. All modules may be used with coil voltage from 24 VAC-277 VAC.
2. Clear labeling shows control module rating, wire size and torque

Field configurable from standard electrically held contactor with simple, easy-to-install kits of control modules, latch mechanisms and auxiliary contacts.



Power poles latch easily onto the base, and designating them as NO or NC is a simple matter of left or right positioning. Additional poles may be added at any time.

The ultimate in versatility, simplicity and performance
All CR460 series lighting contactors deliver unprecedented versatility in application, simplicity in configuration and performance in operation. Their revolutionary design and unique features meet most lighting control needs better than ever before.

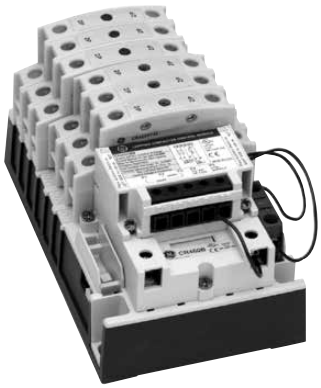
- Modular design permits fast, on-site configuration
- 2-12 power poles
- 30 amp rating (LED driver/electronic ballast rating: 3A/277V or 10A/120V)
- Snap-in auxiliary contacts
- Common components for both electrically and mechanically held versions
- Continuously rated, interchangeable coils
- Finger-safe terminals

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CR460 series



CR463L electrically held



CR463M mechanically held

Application information
CR460 lighting contactors switch ballast (fluorescent or HID), tungsten, LED driver/electronic ballast, and general-use loads and carry motor load, resistive and pilot duty ratings as well.

CR463L electrically held contactors
Operational mode
- 3-wire control is typically used when control is desired from multiple locations. The contactor is operated from a momentary pilot device and requires an auxiliary contact to be used as a holding interlock.
- 2-wire control is used for single location control with power continuously supplied to the coil for contactor operation.

CR463M mechanically held contactors
A mechanical latch with a 2- or 3-wire electronic control module delivers reliable performance and protection from such application abnormalities as line noise, leakage currents from controller outputs, or short repetitive commands burst from faulty controllers.

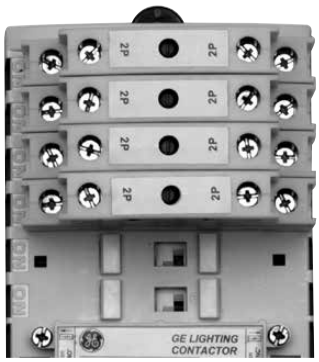
Mechanical operation
- Latches after contactor command and removes coil from circuit for noise-free operation
- Eliminates all coil losses after contactor is latched

Control module
- Coil operation and control circuit at same or different voltages
- Allows longer control wiring runs
- Microprocessor validates control signal before operation
  - will not respond to momentary voltage spikes or noise
  - operation command has built in delay (0.4 sec) to avoid multiple short-term commands that can cause contact fatigue or failure
  - feedback loop prevents contactor from getting out of sequence with switches, even after power failures

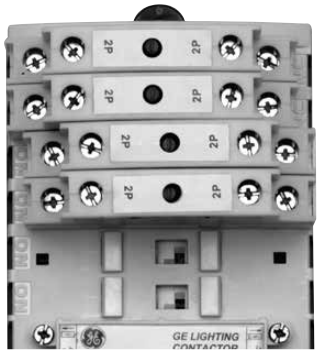
Operational modes
- 3 wire control is the choice for use with momentary devices allowing operation from multiple locations
  - a momentary pulse of energy operates contactor; a second pulse on alternate leg returns contactor to original state
- 2-wire control is the choice for single-output automatic operation or for operation from single-pole devices
  - latches contactor into position when voltage is applied to input terminals (coil is removed from circuit while control voltage is continuously supplied); disengages latch and returns contactor to original state when control voltage is removed.

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CR460 series



CR463L80AJA (8NO)



Contactor reconfigured as 4NO-4NC

3 ways to order CR460 series lighting contactors
Ordering the correct contactor for your application may be accomplished in any of three ways. Choose the one that's right for you.

1. **Order components and assemble in minutes (see pages 3-8 and 3-9).**
   - Cost-effective
   - Allows late-point configuration
   - Greatest flexibility
   - Parts in stock for immediate delivery

2. **Order standard assembled contactor and rotate poles to meet pole requirements (see pages 3-14, 3-15, 3-18 and 3-19).**
   - Available from stock or short cycle for timely delivery
   - Single product number to order
   - Allows local stockiung of most common assembled forms via pole reconfiguration

When you receive the contactor, simply reconfigure it to the NO-NC arrangement you require by rotating the appropriate power plate. It just takes a minute.
Example: 4NO-4NC required. Order CR463L80AJA.

3. **Order assembled contactor configured to the exact application need (see pages 3-16, 3-17, 3-20 and 3-21).**
   - Order contactor as required by application
   - Arrives fully assembled, ready to install

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CR460 components



CR463L - basic contactor

Basic contactor

Combined with other appropriate components, basic contactors allow configuration into any available electrically or mechanically held model. Includes two power poles.

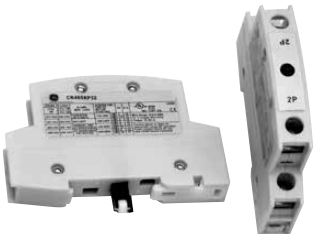
Contact configuration	Product number
1NO-1NC	CR463L11A*A
2NO	CR463L20A*A

Replace * in the product number with the appropriate digits from the Coil Voltage table. The resulting product number will be for an assembled contactor with no additional auxiliary contacts, pilot devices, pilot lights, control circuit fuses or CPTs.

Coil voltage

AC, 60Hz	AC, 50Hz	Electrically held	Mechanically held	Coil digit
24V	20V	•	•	C
28V	24V	•	•	D
115-120V	**110V**	•	•	**J**
200-208V	-	•	•	L
230-240V	220V	•	•	S
277V	**240V**	•	•	**N**
347V	-	•	[1]	T
460-480V	440V	•	[1]	U
575-600V	550V	•	[1]	Y

[1]Control module switching device rated 277V max; use CPT for higher voltage



CR460XP - power poles

Power poles

CR460 series basic contactors accept up to 6 single- or double-pole power poles. These can be used to form up to:

- 12 NO poles when 6 double-poles are used in the NO positions (1-6) or
- 8 NC poles with 4 double-poles in the NC positions (1-4) + NO poles with 2 double-poles in the 2 NO positions (5-6)

Type	Product number
Single pole	CR460XP31
Double pole	CR460XP32

Packaged individually and overpacked in multiple of 5.



CR460XM - conversion kits

Conversion kits for mechanically held contactors

Kits for converting electrically held contactors to a mechanically held version. Kits include control module, latch, latch cover and auxiliary contact(s) plus installation instructions. Conversion kits are suitable for coil voltages 277V and below. Use CPT to reduce coil voltage if line voltage is higher than 277V.

Coil voltage range	Control circuit wiring	Auxiliary contacts[1]	Control circuit voltage	Product number
24-277 Vac	2-wire	(1) 1 pole	24 Vac	CR460XMB
24-277 Vac	2-wire	(1) 1 pole	110-120 Vac	CR460XMC
24-277 Vac	2-wire	(1) 1 pole	200-277 Vac	CR460XMD
24-277 Vac	2-wire	(1) 1 pole	12-28 Vdc	CR460XME
24-277 Vac	3-wire	(2) 1 pole	24 Vac	CR460XMM
24-277 Vac	3-wire	(2) 1 pole	110-120 Vac	CR460XMN
24-277 Vac	3-wire	(2) 1 pole	200-277 Vac	CR460XMP
24-277 Vac	3-wire	(2) 1 pole	12-28 Vdc	CR460XMR

[1]Auxiliary contact block required for feedback loop, alternate 2 pole blocks may be required for status feedback and/or pilot lights. See fuse and transformer kits table on page 3-11 for CPT selection. See wiring diagrams on page 3-23.

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CR460 components



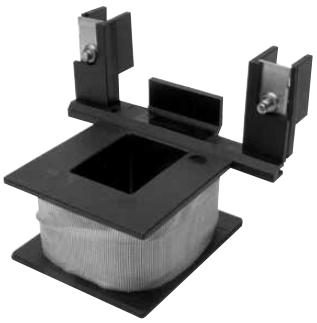
CR460XB - auxiliary contacts

Auxiliary contacts

Each contactor may use one single or one double auxiliary contact block on eacch side of the base. When installed on the left side the contacts are NO, when installed on the right side the contacts are NC. This allows a total of 2NO +2NC contacts maximum.

Type	Product number
Single pole	CR460XB1
Double pole	CR460XB2

See additional auxiliary contacts tables on pages 3-15 and 3-19 for contact selection data.



CR460XC - spare coils

Spare coils

Coil voltage @ 60Hz	Coil voltage @ 50Hz	Product number
24	20	CR460XCC
28	24	CR460XCD
115-120	110	CR460XCJ
200-208	-	CR460XCL
230-240	220	CR460XCS
277	240	CR460XCN
347	-	CR460XCT
460-480	440	CR460XCU
575-600	550	CR460XCY

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CR460 enclosure accessories



Extended button

Enclosure kits (with no CPT or pilot light devices, lights)

Description	Enclosure type	Product number
Standard		
With no CPT or pilot device	NEMA Type 1	CR460XE1B
With no CPT or pilot device	NEMA Type 1 flush mount	CR460XE8B
With no CPT or pilot device	NEMA Type 12/3R	CR460XE2B
Oversized		
With provision for CPT and/or pilot devices, lights	NEMA Type 1	CR460XE1D
With provision for CPT and/or pilot devices, lights	NEMA Type 12/3R	CR460XE2D
With provision for CPT and/or pilot devices, lights	NEMA Type 4	CR460XE4D

See pages 3-25 to 3-26 for enclosure dimensions.



Standard

Pilot devices (requires oversize enclosure)

Pilot device type	For use with	Product number
Momentary ON/OFF push button	Electrically held with interlock aux. Mechanically held 3-wire control module	CR460XP1
Maintained ON/OFF or OFF/AUTO selector switch	Electrically held w/o interlock aux. Mechanically held 2-wire control module Mechanically held 3-wire control module	CR460XP2
Momentary ON/OFF selector switch, spring return to center	Electrically held with interlock aux. Mechanically held 3-wire control module	CR460XP3
Maintained H-O-A or ON/OFF/AUTO keyed selector switch	Electrically held w/o interlock aux. Mechanically held 3-wire control module	CR460XP4
Maintained H-O-A or ON/OFF/AUTO keyed selector switch (key removal all positions)	Electrically held w/o interlock aux. Mechanically held 3-wire control module	CR460XP5

Enclosure accessory kits contain accessory and complete installation wiring and hardware. Some kits contain multiple nameplates for alternate markings.

Pilot lights (requires oversize enclosure)

Pilot light type	Nameplate	Product number
Standard	ON or OFF	CR460XLB*
Push-to-test	ON or OFF	CR460XLD*

Pilot light kits come with interchangeable red and green lenses. Pilot lights may require auxiliary contacts. Replace * in pilot light product number with appropriate voltage digit from the table below. See extra contact limitations in the additional auxiliary contacts tables on pages 3-17 and 3-21.



Push-to-test

Pilot light voltage

Voltage	Digit
24 Vac/dc	C
120 Vac	J
208 Vac	L
240 Vac	S
277 Vac	N
347 Vac	T
480 Vac	U
600 Vac	Y

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CR460 enclosure accessories



Control power transformer

Transformer kits - includes 2 primary and 2 secondary fuses. (Requires oversize enclosure)

	CPT primary volts	CPT secondary volts	Product number
100VA CPT kit[1]	208V	120V	CR460XTB
100VA CPT kit[1]	220-240V	120V	CR460XTC
100VA CPT kit[1]	277V	120V	CR460XTD
100VA CPT kit[1]	440-480V[1]	120V	CR460XTE
100VA CPT kit[1]	600V	120V	CR460XTF
100VA CPT kit[1]	120V	24V	CR460XTL
100VA CPT kit[1]	208V	24V	CR460XTM
100VA CPT kit[1]	220-240V[1]	24V	CR460XTN
100VA CPT kit[1]	277V	24V	CR460XTP
100VA CPT kit[1]	440-480V	24V	CR460XTR
100VA CPT kit[1]	600V	24V	CR460XTS

[1]May be reconnected in field for 440-480 volts; requires substitution of two 0.5 amp primary fuses.

Control circuit fuse kit

For use with	Product number
Contactor without CPT	CR460XF

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CR460 series lighting contactors - project submittal form

Item No. _____ **Proposition No.** _____

CR460 series lighting contactors feature:

- A modular design that permits fast, on-site configuration
- 2-12 power poles that latch easily onto the base as either NO or NC and that can be added at any time
- 30 amp rating (LED driver/electronic ballast rating: 3A/277V or 10A/120V)
- Snap-in auxiliary contacts
- Common components for both electrically and mechanically held versions
- Continuously rated, interchangeable coils
- Finger-safe terminals

Main power pole ratings

Maximum AC voltage and amp ratings			
Load type	**Amps continuous**	**1 phase**	**3 phase**
Ballast	30	347 Vac	600 Vac
General use	30	600 Vac	600 Vac
Tungsten	20	277 Vac	480 Vac
AC Resistive	30	600 Vac	600 Vac
LED Driver/ Electronic Ballast	10	120 Vac	-
	3	277 Vac	-

Maximum horsepower rating (normal starting duty)

1 pole, single phase			3 poles, three phase			
Volts	110-120V	220-240V	200-208V	220-240V	440-480V	550-600V
HP	1	2	3	5	10	15

Main power pole ratings

Power pole configuration		Electrically held contactor		Mechanically held contactor	
NO	**NC**	**Standard type 1 enclosure**	**Oversized type 1 enclosure**	**Standard type 1 enclosure**	**Oversized type 1 enclosure**
2	0	❑ CR463L20A*A10A0	❑ CR463L20A*A10AA	❑ CR463M20##A10A0	❑ CR463M20##A10AA
3	0	❑ CR463L30A*A10A0	❑ CR463L30A*A10AA	❑ CR463M30##A10A0	❑ CR463M30##A10AA
4	0	❑ CR463L40A*A10A0	❑ CR463L40A*A10AA	❑ CR463M40##A10A0	❑ CR463M40##A10AA
6	0	❑ CR463L60A*A10A0	❑ CR463L60A*A10AA	❑ CR463M60##A10A0	❑ CR463M60##A10AA
8	0	❑ CR463L80A*A10A0	❑ CR463L80A*A10AA	❑ CR463M80##A10A0	❑ CR463M80##A10AA
10	0	❑ CR463LB0A*A10A0	❑ CR463LB0A*A10AA	❑ CR463MB0##A10A0	❑ CR463MB0##A10AA
12	0	❑ CR463LD0A*A10A0	❑ CR463LD0A*A10AA	❑ CR463MD0##A10A0	❑ CR463MD0##A10AA
___	___	_____	_____	_____	_____

*** 60Hz coil voltage (✓) for electrically held**

24V	115-120V	200-208V	230-240V	277V	460-488V	575-600V
❑ C	❑ J	❑ L	❑ S	❑ T	❑ U	❑ Y

Control module (✓) for mechanically held

	2-wire control coil voltage		3-wire control coil voltage	
Control volts	**115-120V**	**277V**	**115-120V**	**277V**
24-48V	❑ BJ	❑ BN	❑ MJ	❑ MN
110-120V	❑ CJ	❑ CN	❑ NJ	❑ NN
200-277V	❑ DJ	❑ PN	❑ PJ	❑ PN

Extended description (if any): _____

_____

_____

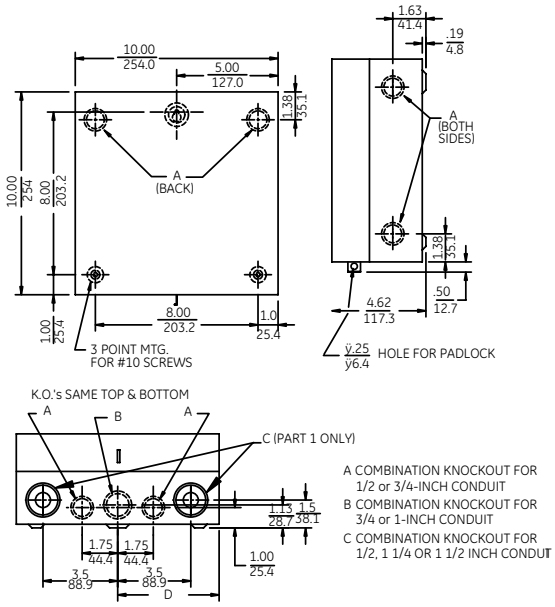
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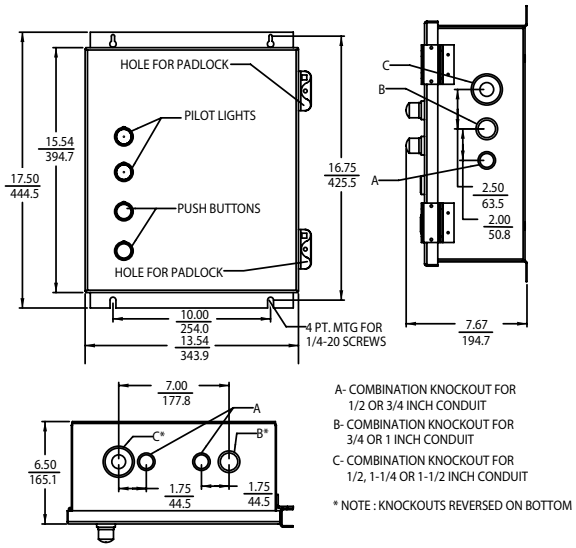
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CR460 series lighting contactors - project submittal form



Type 1, standard enclosure



Type 1, oversized enclosure

CR463L

Electrically held contactors
CR463L -30A (2-12 pole)
Standard assembled forms



Product number selection instructions
Replace * in the product number with the appropriate digits from the coil voltage table on page 3-15. The resulting product number will be for an assembled contactor with no additional auxiliary contacts, pilot devices, pilot lights, control circuit fuses or CPTs.

For modified assembled forms with those modifications, see pages 3-16 and 3-17.

- Items listed here are the most common pole configurations.
- Poles may be reconfigured by the user into alternative combinations of NO and NC contacts.
- All configurations are available as factory-assembled forms.

Open

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A
2	2NO	CR463L20A*A
3	3NO	CR463L30A*A
4	3NO-1NC	CR463L31A*A
4	4NO	CR463L40A*A
5	5NO	CR463L50A*A
6	5NO-1NC	CR463L51A*A
6	6NO	CR463L60A*A
7	7NO	CR463L70A*A
8	7NO-1NC	CR463L71A*A
8	8NO	CR463L80A*A
9	9NO	CR463L90A*A
10	9NO-1NC	CR463L91A*A
10	10NO	CR463LB0A*A
11	11NO	CR463LC0A*A
12	12NO	CR463LD0A*A

Enclosed NEMA Type 1 surface mount

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A10A0
2	2NO	CR463L20A*A10A0
3	3NO	CR463L30A*A10A0
4	3NO-1NC	CR463L31A*A10A0
4	4NO	CR463L40A*A10A0
5	5NO	CR463L50A*A10A0
6	5NO-1NC	CR463L51A*A10A0
6	6NO	CR463L60A*A10A0
7	7NO	CR463L70A*A10A0
8	7NO-1NC	CR463L71A*A10A0
8	8NO	CR463L80A*A10A0
9	9NO	CR463L90A*A10A0
10	9NO-1NC	CR463L91A*A10A0
10	10NO	CR463LB0A*A10A0
11	11NO	CR463LC0A*A10A0
12	12NO	CR463LD0A*A10A0

Enclosed NEMA Type 1 surface mount (oversize)[1]

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A10AA
2	2NO	CR463L20A*A10AA
3	3NO	CR463L30A*A10AA
4	3NO-1NC	CR463L31A*A10AA
4	4NO	CR463L40A*A10AA
5	5NO	CR463L50A*A10AA
6	5NO-1NC	CR463L51A*A10AA
6	6NO	CR463L60A*A10AA
7	7NO	CR463L70A*A10AA
8	7NO-1NC	CR463L71A*A10AA
8	8NO	CR463L80A*A10AA
9	9NO	CR463L90A*A10AA
10	9NO-1NC	CR463L91A*A10AA
10	10NO	CR463LB0A*A10AA
11	11NO	CR463LC0A*A10AA
12	12NO	CR463LD0A*A10AA

[1]Oversize enclosures required for field installed pilot devices, pilot lights and control power transformers.

Enclosed NEMA Type 1 surface mount

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A80A0
2	2NO	CR463L20A*A80A0
3	3NO	CR463L30A*A80A0
4	3NO-1NC	CR463L31A*A80A0
4	4NO	CR463L40A*A80A0
5	5NO	CR463L50A*A80A0
6	5NO-1NC	CR463L51A*A80A0
6	6NO	CR463L60A*A80A0
7	7NO	CR463L70A*A80A0
8	7NO-1NC	CR463L71A*A80A0
8	8NO	CR463L80A*A80A0
9	9NO	CR463L90A*A80A0
10	9NO-1NC	CR463L91A*A80A0
10	10NO	CR463LB0A*A80A0
11	11NO	CR463LC0A*A80A0
12	12NO	CR463LD0A*A80A0

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CR463L

Electrically held contactors
CR463L -30A (2-12 pole)
Standard assembled forms

Enclosed NEMA Type 12/3R

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A20A0
2	2NO	CR463L20A*A20A0
3	3NO	CR463L30A*A20A0
4	3NO-1NC	CR463L31A*A20A0
4	4NO	CR463L40A*A20A0
5	5NO	CR463L50A*A20A0
6	5NO-1NC	CR463L51A*A20A0
6	6NO	CR463L60A*A20A0
7	7NO	CR463L70A*A20A0
8	7NO-1NC	CR463L71A*A20A0
8	8NO	CR463L80A*A20A0
9	9NO	CR463L90A*A20A0
10	9NO-1NC	CR463L91A*A20A0
10	10NO	CR463LB0A*A20A0
11	11NO	CR463LC0A*A20A0
12	12NO	CR463LD0A*A20A0

Enclosed NEMA Type 12/3R (oversize)[1]

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A20AA
2	2NO	CR463L20A*A20AA
3	3NO	CR463L30A*A20AA
4	3NO-1NC	CR463L31A*A20AA
4	4NO	CR463L40A*A20AA
5	5NO	CR463L50A*A20AA
6	5NO-1NC	CR463L51A*A20AA
6	6NO	CR463L60A*A20AA
7	7NO	CR463L70A*A20AA
8	7NO-1NC	CR463L71A*A20AA
8	8NO	CR463L80A*A20AA
9	9NO	CR463L90A*A20AA
10	9NO-1NC	CR463L91A*A20AA
10	10NO	CR463LB0A*A20AA
11	11NO	CR463LC0A*A20AA
12	12NO	CR463LD0A*A20AA

[1]Oversize enclosures required for field installed pilot devices, pilot lights and control power transformers.

Enclosed NEMA Type 4/4X

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463L11A*A40A0
2	2NO	CR463L20A*A40A0
3	3NO	CR463L30A*A40A0
4	3NO-1NC	CR463L31A*A40A0
4	4NO	CR463L40A*A40A0
5	5NO	CR463L50A*A40A0
6	5NO-1NC	CR463L51A*A40A0
6	6NO	CR463L60A*A40A0
7	7NO	CR463L70A*A40A0
8	7NO-1NC	CR463L71A*A40A0
8	8NO	CR463L80A*A40A0
9	9NO	CR463L90A*A40A0
10	9NO-1NC	CR463L91A*A40A0
10	10NO	CR463LB0A*A40A0
11	11NO	CR463LC0A*A40A0
12	12NO	CR463LD0A*A40A0

Coil voltage

Insert coil digit in place of * in digit 10.

Coil voltage		
AC, 60Hz	**AC, 50Hz**	**Coil digit**
24V	20V	C
28V	24V	D
115-120V	110V	J
200-208V	-	L
230-240V	220V	S
277V	240V	N
347V	-	T
460-480V	440V	U
575-600V	550V	Y

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CR463L
Modified assembled forms - electrically held

CR463L Electrically held contactors
Follow the diagram and tables below to select the options and corresponding product number digits for your modified contactor.



1: NO power pole contact configuration

0	7
1	8
2	9
3	10 (B)[1]
4	11 (C)[1]
5	12 (D)[1]
6	

[1]For digit 1 with 10 NO contacts use B; for 11 NO contacts, use C; for 12 NO contacts, use D.

2: NC power pole contact configuration

0	4
1	5
2	6
3	7
4	8

3: Standard control

A

4: Coil voltage

AC, 60Hz	AC, 50Hz	Digit 4
24V	20V	C
28V	24V	D
115-120V	110V	J
200-208V	-	L
230-240V	220V	S
277V	240V	N
347V	-	T
460-480V	440V	U
575-600V	550V	Y

5: Additional auxiliary contacts

Additional (field use) auxiliary contacts	Digit 5 (aux)	Open type	Enclosed with pilot device codes (Digit 7) 0. 2, 4, 5, 6, 7, 8 below				Enclosed with pilot device codes (Digit 7) 1, 3 below			
			No pilot devices or pilot lights Digit 8=A	ON light across coil Digit 8=B,D	OFF light thru NC contact Digit 8=C,E	ON light across coil and OFF light thru NC contact Digit 8=F,G	No pilot devices or pilot lights Digit 8=A	ON light across coil Digit 8=B,D	OFF light thru NC contact Digit 8=C,E	ON light across coil and OFF light thru NC contact Digit 8=F,G
None	A	•	•	•	•	•	•	•	•	•
1NO	B	•	•	•	•	•	•	•	•	•
1NC	C	•	•	•	•	•	•	•	•	•
1NO-1NC	D	•	•	•	•	•	•	•	•	•
2NO	E	•	•	•	•	•	-	-	-	-
2NO-1NC	F	•	•	•	•	•	-	-	-	-
2NC	G	•	•	•	-	-	•	•	-	-
1NO-2NC	H	•	•	•	-	-	•	•	-	-
2NO-2NC	J	•	•	•	-	-	-	-	-	-

Each side of the contactor base will accept one single- or double-pole auxiliary contact block, for a maximum of 2NO-2NC contacts. Enclosures with OFF pilot lights require 1NC contact. Specify an additional 1NO contact if a holding interlock is required and "not" selected as part of Digit 7 (1 or 3). For open forms, this is the final digit.

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CR463L
Modified assembled forms - electrically held (continued)

CR463L Electrically held contactors
Follow the diagram and tables below to select the options and corresponding product number digits for your modified contactor.



6: Enclosures

Enclosure type	Digit 6
Type 1 surface for 2 pole contactors	1
Type 1 surface for 5-12 pole contactors	1
Type 1 flush	8
Type 12/3R	2
Type 4/4X	4

7: Pilot devices

Pilot device	Holding interlock		Digit 7
	Not required	Included[2]	
None	-	-	0
ON/OFF push button (momentary)	-	•	1
ON/OFF selector switch (maintained)	•	-	2
ON/OFF selector switch, spring return to center (momentary)	-	•	3
H-O-A selector switch (maintained)	•	-	4
ON/OFF/AUTO keyed selector switch (removal all positions) (maintained)	•	-	5
H-O-A keyed selector switch (removal all positions) (maintained)	•	-	6
OFF/AUTO selector switch (maintained)	•	-	7
ON/OFF/AUTO selector switch (maintained)	•	-	8

[2]One holding interlock is included in pilot device digit and pricing.

Heavy-duty, 30mm pilot devices. Contactor supplied in oversize enclosures with these options. Not available in Type 1 flush enclosure.

8: Pilot lights

Type	Pilot light(s)	Digit 8
–	**None**	**A**
Standard[3]	ON	B
	OFF	C
	ON and OFF	F
Push-to-test[3]	ON	D
	OFF	E
	ON and OFF	G

[3]ON is across coil; OFF is through NC contact, which is included in pilot light digit and pricing.

Heavy-duty 30mm pilot lights with interchangeable red and green lenses. See the additional auxiliary contacts table above for contact limitations. OFF light includes extra auxiliary contact. Not available in Type 1 flush enclosure.

9: Control circuit fuses/control power transformers

Contactor type	Description		Digit 9
–	None		0
Without CPT	Control circuit fuses		1
	CPT primary volts	**CPT secondary volts**	
With 100VA CPT[4]	208	120	B
	220-240		C
	277		D
	440-480		E
	600		F
	120	24	L
	208		M
	220-240		N
	277		P
	440-480		R
	600		S

[4]Contactor supplied in oversize enclosure with these options.

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CR463M

Mechanically held contactors
CR463M - 30A (2-12 pole)
Standard assembled forms

Product number selection instructions
To specify control and coil voltage, replace ** in the product number with the appropriate digits from the control circuit table. The resulting product number will be for an assembled contactor with no additional auxiliary contacts, pilot devices, pilot lights, control circuit fuses or CPTs. If coil supply voltage is greater than 277V, use a CPT.

For modified assembled forms with those modifications, see pages 3-15 and 3-16. Items listed here are the most common pole configurations.

Open

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A
2	2NO	CR463M20**A
3	3NO	CR463M30**A
4	3NO-1NC	CR463M31**A
4	4NO	CR463M40**A
5	5NO	CR463M50**A
6	5NO-1NC	CR463M51**A
6	6NO	CR463M60**A
7	7NO	CR463M70**A
8	7NO-1NC	CR463M71**A
8	8NO	CR463M80**A
9	9NO	CR463M90**A
10	9NO-1NC	CR463M91**A
10	10NO	CR463MB0**A
11	11NO	CR463MC0**A
12	12NO	CR463MD0**A

Enclosed NEMA Type 1 surface mount

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A10A0
2	2NO	CR463M20**A10A0
3	3NO	CR463M30**A10A0
4	3NO-1NC	CR463M31**A10A0
4	4NO	CR463M40**A10A0
5	5NO	CR463M50**A10A0
6	5NO-1NC	CR463M51**A10A0
6	6NO	CR463M60**A10A0
7	7NO	CR463M70**A10A0
8	7NO-1NC	CR463M71**A10A0
8	8NO	CR463M80**A10A0
9	9NO	CR463M90**A10A0
10	9NO-1NC	CR463M91**A10A0
10	10NO	CR463MB0**A10A0
11	11NO	CR463MC0**A10A0
12	12NO	CR463MD0**A10A0

Enclosed NEMA Type 1 surface mount (oversize)[1]

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A10AA
2	2NO	CR463M20**A10AA
3	3NO	CR463M30**A10AA
4	3NO-1NC	CR463M31**A10AA
4	4NO	CR463M40**A10AA
5	5NO	CR463M50**A10AA
6	5NO-1NC	CR463M51**A10AA
6	6NO	CR463M60**A10AA
7	7NO	CR463M70**A10AA
8	7NO-1NC	CR463M71**A10AA
8	8NO	CR463M80**A10AA
9	9NO	CR463M90**A10AA
10	9NO-1NC	CR463M91**A10AA
10	10NO	CR463MB0**A10AA
11	11NO	CR463MC0**A10AA
12	12NO	CR463MD0**A10AA

[1]Oversize enclosures required for field installed pilot devices, pilot lights and control power transformers.

Enclosed NEMA Type 1 flush mount

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A80A0
2	2NO	CR463M20**A80A0
3	3NO	CR463M30**A80A0
4	3NO-1NC	CR463M31**A80A0
4	4NO	CR463M40**A80A0
5	5NO	CR463M50**A80A0
6	5NO-1NC	CR463M51**A80A0
6	6NO	CR463M60**A80A0
7	7NO	CR463M70**A80A0
8	7NO-1NC	CR463M71**A80A0
8	8NO	CR463M80**A80A0
9	9NO	CR463M90**A80A0
10	9NO-1NC	CR463M91**A80A0
10	10NO	CR463MB0**A80A0
11	11NO	CR463MC0**A80A0
12	12NO	CR463MD0**A80A0

Insert control circuit rating digits in place of the ** in digit 9 and 10 of product number.

Control circuit rating

Product no. digits by coil voltage (60Hz)[2]			
Control	**Control module input**	**115-120 Vac**	**277 Vac**
2 wire	110-120 Vac	CJ	CN
	200-277 Vac	DJ	DN
3 wire	110-120 Vac	NJ	NN
	200-277 Vac	PJ	PN

[2]For 50Hz coil ratings see coil table, page 3-9.

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CR463M

Mechanically held contactors
CR463M - 30A (2-12 pole)
Standard assembled forms

Enclosed NEMA Type 12/3R

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A20A0
2	2NO	CR463M20**A20A0
3	3NO	CR463M30**A20A0
4	3NO-1NC	CR463M31**A20A0
4	4NO	CR463M40**A20A0
5	5NO	CR463M50**A20A0
6	5NO-1NC	CR463M51**A20A0
6	6NO	CR463M60**A20A0
7	7NO	CR463M70**A20A0
8	7NO-1NC	CR463M71**A20A0
8	8NO	CR463M80**A20A0
9	9NO	CR463M90**A20A0
10	9NO-1NC	CR463M91**A20A0
10	10NO	CR463MB0**A20A0
11	11NO	CR463MC0**A20A0
12	12NO	CR463MD0**A20A0

Enclosed NEMA Type 12/3R (oversize)[1]

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A20AA
2	2NO	CR463M20**A20AA
3	3NO	CR463M30**A20AA
4	3NO-1NC	CR463M31**A20AA
4	4NO	CR463M40**A20AA
5	5NO	CR463M50**A20AA
6	5NO-1NC	CR463M51**A20AA
6	6NO	CR463M60**A20AA
7	7NO	CR463M70**A20AA
8	7NO-1NC	CR463M71**A20AA
8	8NO	CR463M80**A20AA
9	9NO	CR463M90**A20AA
10	9NO-1NC	CR463M91**A20
10	10NO	CR463MB0**A20AA
11	11NO	CR463MC0**A20AA
12	12NO	CR463MD0**A20AA

[1]Oversize enclosures required for field installed pilot devices, pilot lights and control power transformers.

Enclosed NEMA Type 4/4X

No. of poles	Contact configuration	Product number
2	1NO-1NC	CR463M11**A40A0
2	2NO	CR463M20**A40A0
3	3NO	CR463M30**A40A0
4	3NO-1NC	CR463M31**A40A0
4	4NO	CR463M40**A40A0
5	5NO	CR463M50**A40A0
6	5NO-1NC	CR463M51**A40A0
6	6NO	CR463M60**A40A0
7	7NO	CR463M70**A40A0
8	7NO-1NC	CR463M71**A40A0
8	8NO	CR463M80**A40A0
9	9NO	CR463M90**A40A0
10	9NO-1NC	CR463M91**A40A0
10	10NO	CR463MB0**A40A0
11	11NO	CR463MC0**A40A0
12	12NO	CR463MD0**A40A0

Insert control circuit rating digits in place of the ** in digit 9 and 10 of product number.

Control circuit rating

Product no. digits by coil voltage (60Hz)[2]			
Control	**Control module input**	**115-120 Vac**	**277 Vac**
2 wire	110-120 Vac	CJ	CN
	200-277 Vac	DJ	DN
3 wire	110-120 Vac	NJ	NN
	200-277 Vac	PJ	PN

[2]For 50Hz coil ratings see coil table, page 3-9.

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CR463M
Modified assembled forms - mechanically held

CR463M Mechanically held contactors
Follow the diagram and tables below to select the options and corresponding product number digits for your modified contactor.



1: NO power pole contact configuration

0	7
1	8
2	9
3	10 (B)[1]
4	11 (C)[1]
5	12 (D)[1]
6	

[1]For digit 1 with 10 NO contacts use B; for 11 NO contacts, use C; for 12 NO contacts, use D.

2: NC power pole contact configuration

0	4
1	5
2	6
3	7
4	8

3 & 4: Control circuit

Control	Control module input	Digits 3 & 4 by coil voltage (60Hz)[2]				
		24 VAC	115-120 VAC	200-208 VAC	230-240 VAC	277 VAC
2 wire	24 VAC	BC	BJ	BL	BS	BN
	110-120 VAC	CC	CJ	CL	CS	CN
	200-277 VAC	DC	DJ	DL	DS	DN
	12-28 VDC	EC	EJ	EL	ES	EN
3 wire	24 VAC	MC	MJ	ML	MS	MN
	110-120 VAC	NC	NJ	NL	NS	NN
	200-277 VAC	PC	PJ	PL	PS	PN
	12-28 VDC	RC	RJ	RL	RS	RN

[2]For 50Hz coil ratings see coil table, page 3-9.

If coil supply voltage is greater than 277V, use CPT.

5: Additional auxiliary contacts

Additional (field use) auxiliary contacts	Digit 5	2-wire control (when Digit 3 = B, C, D, E)					3-wire control (when Digit 3 = M, N, P, R)				
		Open type	Enclosed (when Digit 7 = 0, 2, 4, 5, 6, 7, 8)				Open type	Enclosed (when Digit 7 = 1, 2, 3)			
			No pilot lights Digit 8=A	ON light thru NO contact Digit 8=B,D	OFF light thru NC contact Digit 8=C,E	ON light thru NO contact and OFF light thru NC contact Digit 8=F,G		No pilot devices or pilot lights Digit 8=A	ON light thru NO contact Digit 8=B,D	OFF light thru NC contact Digit 8=C,E	ON light thru NO contact and OFF light thru NC contact Digit 8=F,G
None	A	•	•	•	•	•	•	•	•	•	•
1NO	B	•	•	•	•	•	•	•	-	•	-
1NC	C	•	•	•	-	-	•	•	•	-	-
1NO-1NC	D	•	•	•	-	-	•	•	-	-	-
2NO	E	•	•	-	•	-	-	-	-	-	-

Each side of the contactor base will accept one single- or double-pole auxiliary contact block, for a maximum of 2NO-2NC contacts. The 2-wire control module uses 1NC contact and the 3-wire uses 1NO-1NC for feedback and control. The table above indicates the additional auxiliary contacts available for customer or field use when factory-assembled forms are supplied. For open forms, this is the final digit.

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CR463M
Modified assembled forms - mechanically held (continued)

CR463M Mechanically held contactors
Follow the diagram and tables below to select the options and corresponding product number digits for your modified contactor.



6: Enclosures

Enclosure type	Digit 6
Type 1 surface for 2-4 pole contactors	1
Type 1 surface for 5-12 pole contactors	1
Type 1 flush	8
Type 12/3R	2
Type 4/4X	4

7: Pilot devices

Pilot device	Control module		Digit 7
	2-wire	3 wire	
None	-	-	0
ON/OFF push button (momentary)	-	•	1
ON/OFF selector switch (maintained)	•	•	2
ON/OFF selector switch, spring return to center (momentary)	-	•	3
H-O-A selector switch (maintained)	•	-	4
ON/OFF/AUTO keyed selector switch (removal all positions) (maintained)	•	-	5
H-O-A keyed selector switch (removal all positions) (maintained)	•	-	6
OFF/AUTO selector switch (maintained)	•	-	7
ON/OFF/AUTO selector switch (maintained)	•	-	8

Heavy-duty, 30mm pilot devices. Oversize enclosure required for field installed pilot devices, pilot lights and control power transformers. Not available in Type 1 flush enclosure.

8: Pilot lights

Type	Pilot light(s)[3]	Digit 8
–	None	A
Standard	ON	B
	OFF	C
	ON and OFF	F
Push-to-test	ON	D
	OFF	E
	ON and OFF	G

[3]Contactor supplied in oversize enclosure with these options. ON is through NO contact; OFF is through NC contact. Auxiliary contacts are included in pilot light digit.

Heavy-duty 30mm pilot lights with interchangeable red and green lenses. See the additional auxiliary contacts table above for contact limitations. OFF light includes extra auxiliary contact. Not available in Type 1 flush enclosure.

9: Control circuit fuses/control power transformers

Contactor type	Description		Digit 9
–	None		0
Without CPT	Control circuit fuses		1
	CPT primary volts	CPT secondary volts	
With 100VA CPT[4]	208	120	B
	220-240		C
	277		D
	440-480		E
	600		F
	120	24	L
	208		M
	220-240		N
	277		P
	440-480		R
	600		S

[4]Oversize enclosure required for field installed pilot devices, pilot lights and control power transformers.

CPT secondary voltage must match control voltage. Not available in Type 1 flush enclosure.

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CR460, CR463
Technical data

Main power pole ratings

Maximum AC voltage and amp ratings

Load type	Amps continuous	Poles	
		1 phase	3 phase
Ballast	30	347 VAC	600 VAC
Tungsten	20	277 VAC	480 VAC
General use/AC resistive	30	600 VAC	600 VAC
LED driver/ Electronic ballast	10	120 Vac	-
	3	277 Vac	-

Maximum horsepower rating (normal starting duty)

	1 pole, single phase			3 poles, three phase		
Volts	110-120V	220-240V	200-208V	220-240V	440-480V	550-600V
HP	1	2	3	5	10	15

Short circuit current ratings
For 463 series contactors available amps (RMS) symmetrical

Circuit breakers inverse trip type		Enclosure type CR460X*B		Enclosure type CR460X*D or larger			
AC service voltage	Breaker size	TEY/ THHQB	All other inverse trip breakers	THHQB	TEY	SE	All other inverse trip breakers
240	30	22,000	14,000	22,000	65,000	100,000	22,000
	40	14,000	10,000	22,000	65,000	100,000	22,000
277	30	14,000[1]	10,000	N/A	14,000	30,000	14,000
	40	14,000[1]	5,000	N/A	14,000	30,000	14,000
480	40	N/A	5,000	N/A	N/A	30,000	14,000
600	40	N/A	5,000	N/A	N/A	14,000	10,000

[1]TEY only

Withstand current ratings
For 463 series contactors - available amps (RMS) symmetrical fuses

		Enclosure type CR460X*B		Enclosure type CR460X*D or larger		
AC service voltage	Fuse size	Fuse type J	RK1	Fuse type J/ RK1/RKS	K	H
600 and below	30	100,000	50,000	100,000	50,000	10,000

Control circuit characteristics

Coil

Inrush	340 VA
Sealed	45 VA

Control module

Input voltage	Steady state current @ rated voltage (mA)	Maximum VA
12-28 VDC	42	2
24 VAC	80	5
115-120 VAC	83	12
200-277 VAC	91	30

Minimum pulse duration (3-wire control module)	250ms
Maximum allowable leakage current	1.8mA
EMI	35V/m
Surge transient peak	6kV
Frequency range	40-70Hz

Auxiliary contacts rating

A600, 10A, 600 VAC

Wire size ratings

Component	Number of cables	Wire range (AWG) (Solid or stranded)	Wire temp.
Power poles	1	#14-8	75°C Cu
Power poles	2	#14-8[2]	75°C Cu
Coil	1 or 2	#18-14	60°/75°C Cu
Control module	1 or 2	#22-12	60°/75°C Cu
Auxiliary contacts	1 or 2	#22-12	60°/75°C Cu

[2]#8 AWG stranded only.

Standards and listings

UL508 file, E1811 Vol 19, cUL, CE

Ambient operating temperature

-25° to 40°C

Reference publications

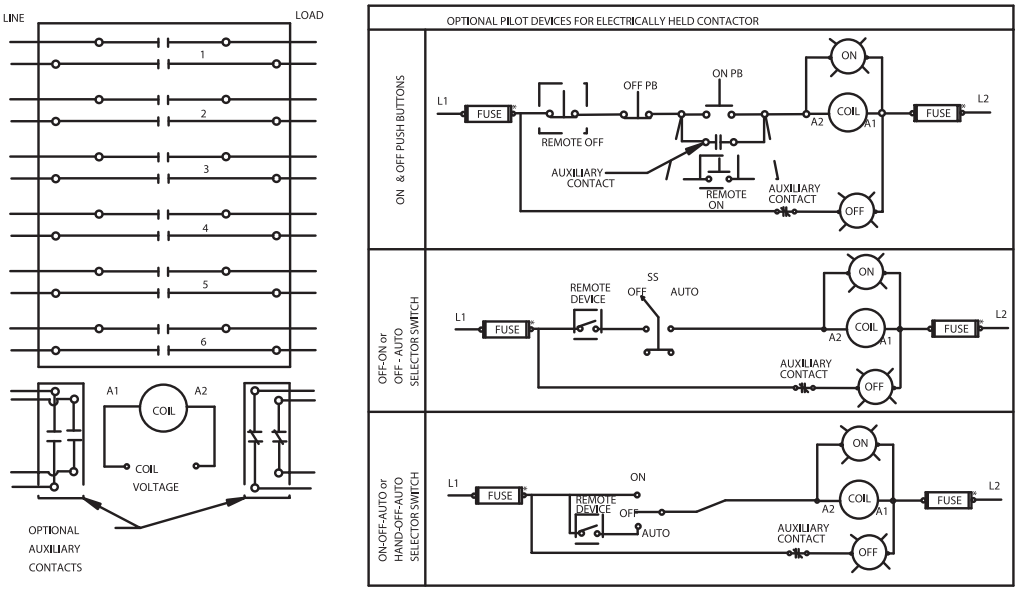
Instructions	DEH-40460

Wiring diagrams

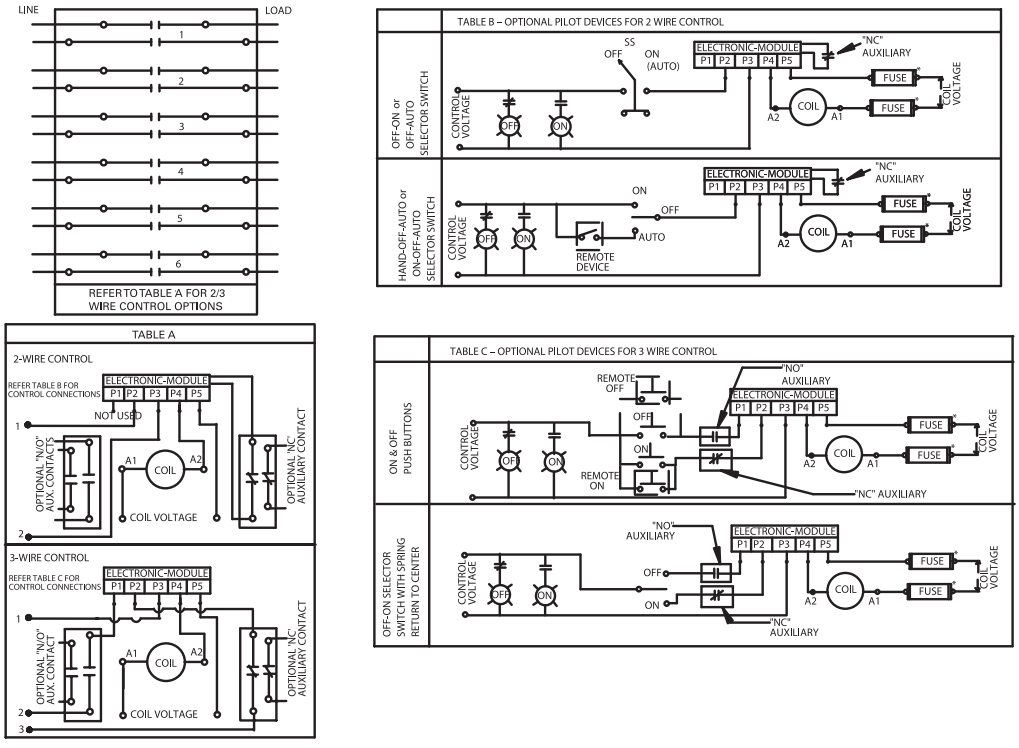
Wiring diagrams and outline drawings	Reference page
CR463L electrically held	3-23
CR463M mechanically held	3-23
55-217114P01	3-24
55-217069 (CR460XE1B)	3-25
55-217105 (CR460XE1D)	3-25
55-217108 (CR460XE8B)	3-25
55-217109 (CR460XE2B)	3-26
55-217106 (CR460XE2D)	3-26
55-217107 (CR460XE4D)	3-26

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CR463L, CR463M
Wiring diagrams



CR463L Electrically held

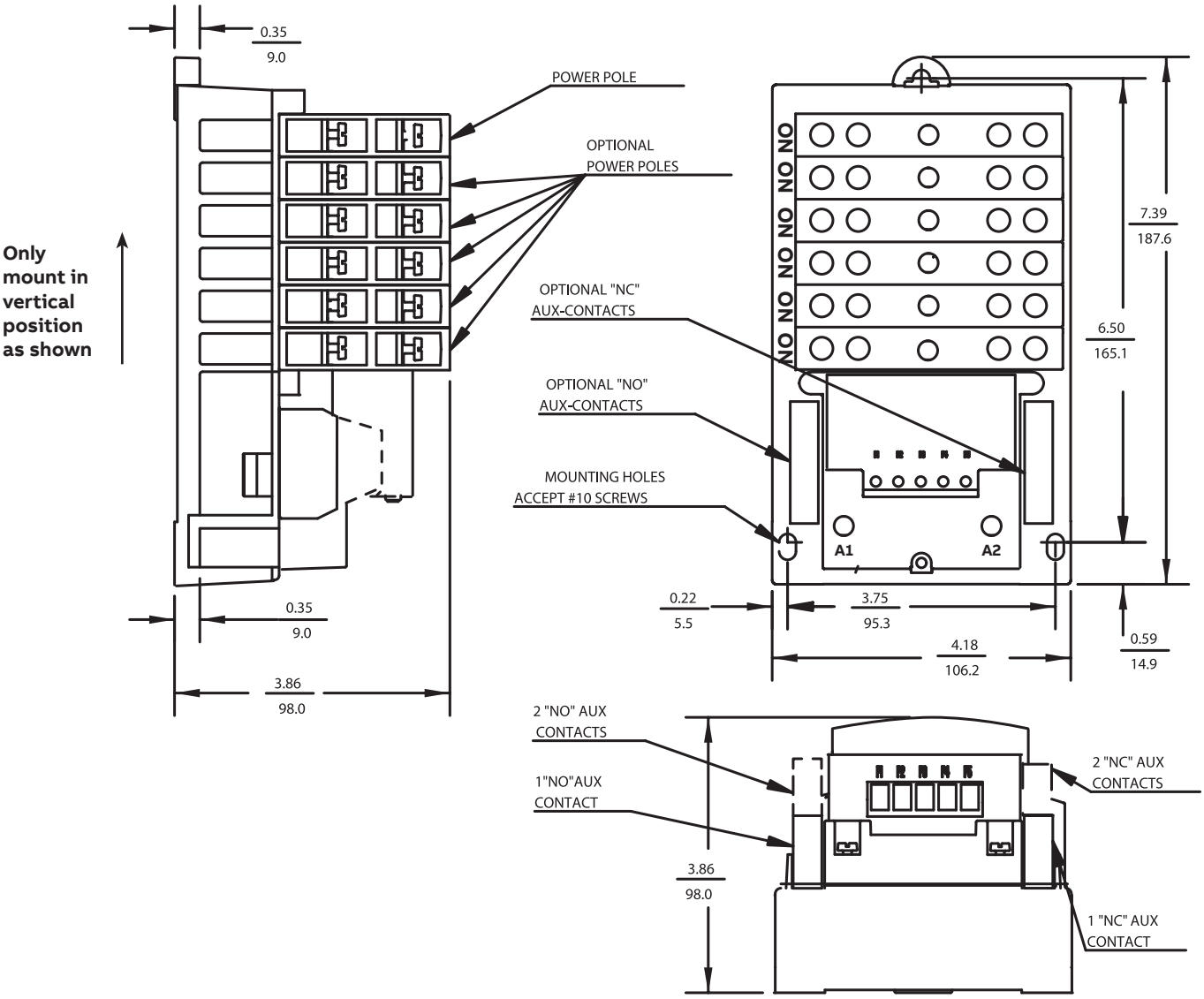


CR463M Mechanically held

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CR463L, CR463M

Outlines and dimensions ($\frac{in.}{mm}$) for estimating only



Contactor CR463L and CR463M, drawing #55-217114P01

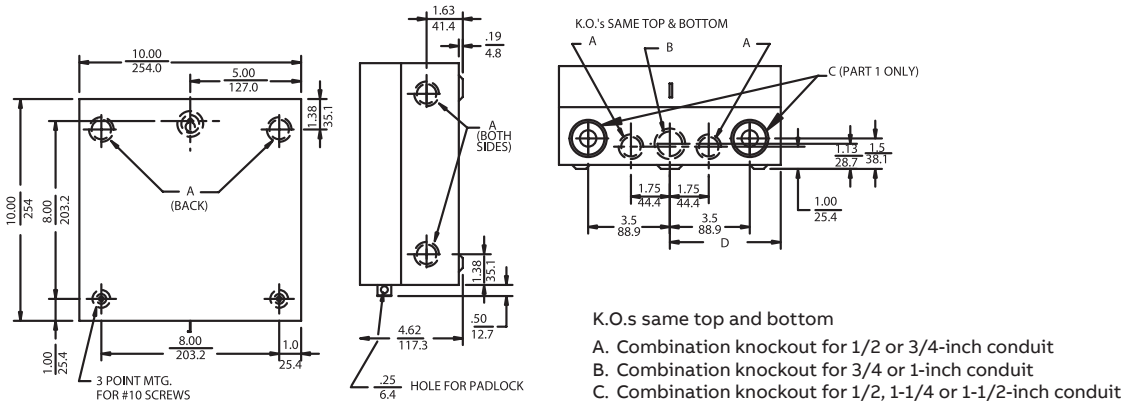
Features:

1. Mounting dimensions remain the same for 1 to 12 poles
2. Line and load terminals are interchangeable
3. Up to 2NO and 2NC auxiliary contacts can be added onto the base product
4. Same power pole can be configured as NO type or NC tpe in pole positions 1-4; NO type only in positions 5-6.

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CR463L, CR463M

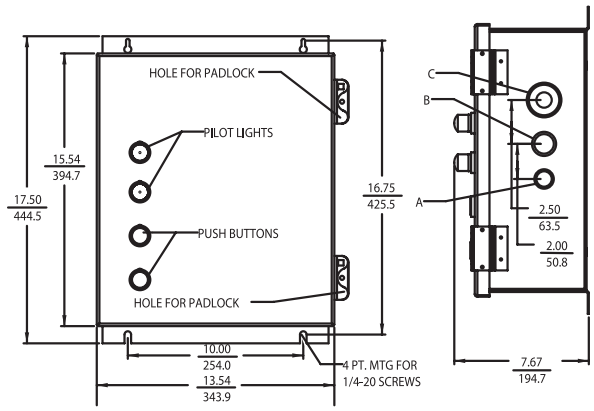
Outlines and dimensions ($\frac{in.}{mm}$) for estimating only



K.O.s same top and bottom

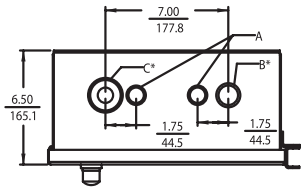
A. Combination knockout for 1/2 or 3/4-inch conduit
B. Combination knockout for 3/4 or 1-inch conduit
C. Combination knockout for 1/2, 1-1/4 or 1-1/2-inch conduit

NEMA Type 1 with no CPT, pilot devices or pilot lights, drawing #55-217069 (CR460XE1B)

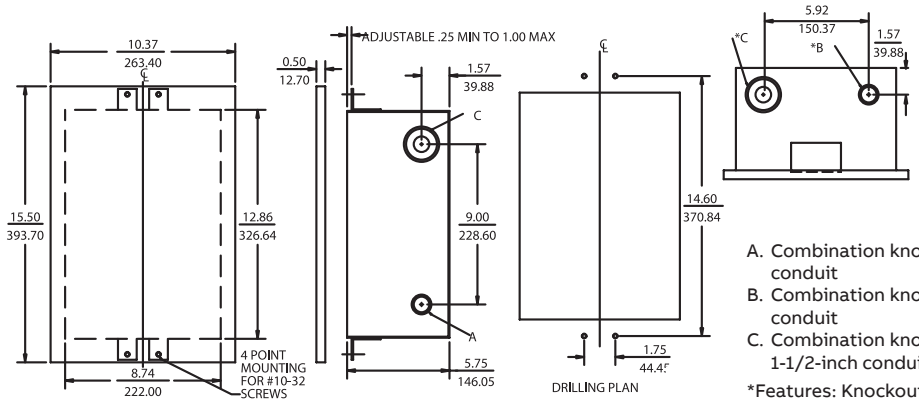


A. Combination knockout for 1/2 or 3/4-inch conduit
B. Combination knockout for 3/4 or 1-inch conduit
C. Combination knockout for 1/2, 1-1/4 or 1-1/2-inch conduit

*Features: Knockouts reversed on bottom



NEMA Type 1 oversized or with provision for CPT and/or pilot device/pilot lights, drawing #55-217105 (CR460XE1D)



A. Combination knockout for 1/2 or 3/4-inch conduit
B. Combination knockout for 3/4 or 1-inch conduit
C. Combination knockout for 1/2, 1-1/4 or 1-1/2-inch conduit

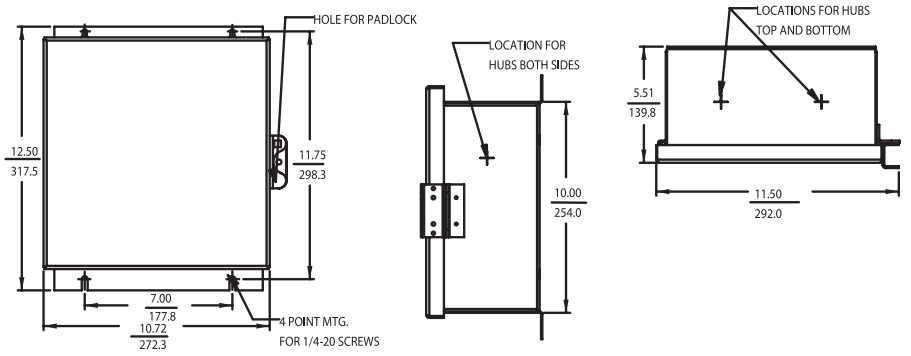
*Features: Knockouts reversed on bottom

NEMA Type 1 flush, drawing #55-217108 (CR460XE8B)

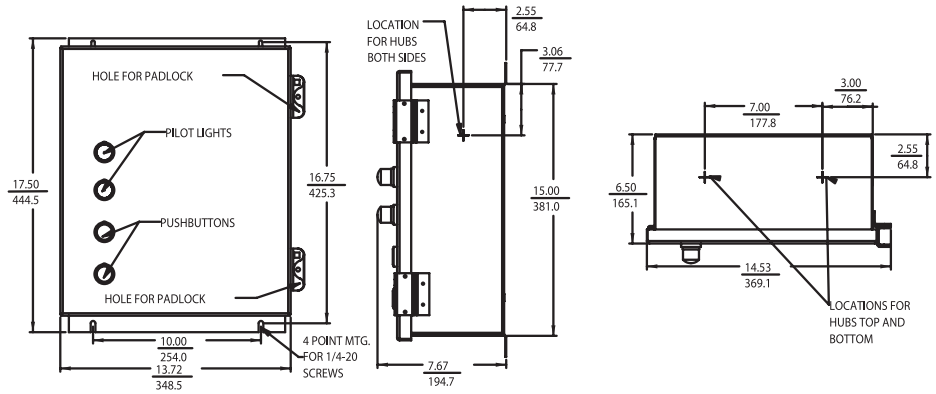
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CR463L, CR463M

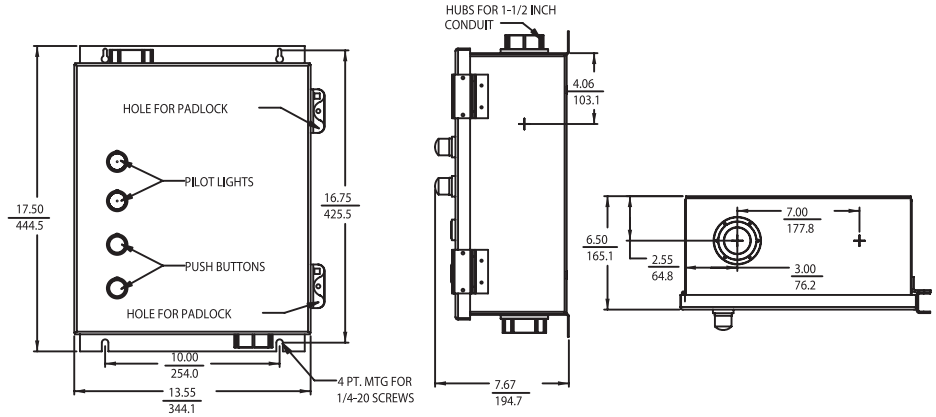
Outlines and dimensions ($\frac{in.}{mm}$) for estimating only



NEMA Type 12/3R with no CPT, pilot device or pilot lights, drawing #55-217109 (CR460XE2B)



NEMA Type 12/3R oversized with provision for CPT and/or pilot device/pilot lights, drawing #55-217106 (CR460XE2D)



NEMA Type 4/4X oversized with provision for CPT and/or pilot devices/pilot lights, drawing #55-217107 (CR460XE4D)

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CR360L

Electrically held contactors
CR360L - 30A - 300A (2, 3 & 4 pole)



Open 60-amp electrically held lighting contactor

Application information
ABB's CR360L series lighting contactors are electrically held, and offer solutions for applications between 30 and 300 amps. This is accomplished in five frame sizes, all built on the successful, and long established NEMA starters. The ratings are established for fluorescent, mercury arc, tungsten and sodium lamp loads, covering a wide spectrum of industrial and commercial applications.

The CR360L contactors offer a wide range of features that include:

- NEMA Type 1, Type 12, Type 3R, and Type 4 stainless steel enclosures
- A full selection of pilot devices, including pushbuttons, selector switches, and multi-colored indicating lights wired in needed configurations
- Main contactors with 2, 3 and 4 power poles
- Generous offering of auxiliary contacts
- Complete list of renewal parts for field installation
- Stock or quick delivery on the majority of products
- UL listing and CSA certification
- Order by complete product number
- Coils will be connected line-to-line unless otherwise specified
- Complete product number must contain 15 digits

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CR360L

Electrically held contactors
CR360L - 30A - 300A (2, 3 & 4 pole) (continued)

CR360L [1] [2] [3] [4] [5]

1: Select size, number of poles, and enclosure

Open

Continuous amp rating	No. of poles	Product number
30A	2	CR360L302
30A	3	CR360L303
30A	4	CR360L304
60A	2	CR360L402
60A	3	CR360L403
60A	4	CR360L404
100A	2	CR360L502
100A	3	CR360L503
100A	4	CR360L504
200A	2	CR360L602
200A	3	CR360L603
200A	4	CR360L604
300A	2	CR360L702
300A	3	CR360L703
300A	4	CR360L704

Enclosed NEMA Type 12

Continuous amp rating	No. of poles	Product number
30A	2	CR360L322
30A	3	CR360L323
30A	4	CR360L324
60A	2	CR360L422
60A	3	CR360L423
60A	4	CR360L424
100A	2	CR360L522
100A	3	CR360L523
100A	4	CR360L524
200A	2	CR360L622
200A	3	CR360L623
200A	4	CR360L624
300A	2	CR360L722
300A	3	CR360L723
300A	4	CR360L724

Enclosed NEMA Type 4, SS

Continuous amp rating	No. of poles	Product number
30A	2	CR360L322
30A	3	CR360L323
30A	4	CR360L324
60A	2	CR360L422
60A	3	CR360L423
60A	4	CR360L424
100A	2	CR360L522
100A	3	CR360L523
100A	4	CR360L524
200A	2	CR360L622
200A	3	CR360L623
200A	4	CR360L624
300A	2	CR360L722
300A	3	CR360L723
300A	4	CR360L724

Enclosed NEMA Type 1

Continuous amp rating	No. of poles	Product number
30A	2	CR360L312
30A	3	CR360L313
30A	4	CR360L314
60A	2	CR360L412
60A	3	CR360L413
60A	4	CR360L414
100A	2	CR360L512
100A	3	CR360L513
100A	4	CR360L514
200A	2	CR360L612
200A	3	CR360L613
200A	4	CR360L614
300A	2	CR360L712
300A	3	CR360L713
300A	4	CR360L714

Enclosed NEMA Type 3R

Continuous amp rating	No. of poles	Product number
30A	2	CR360L362
30A	3	CR360L363
30A	4	CR360L364
60A	2	CR360L462
60A	3	CR360L463
60A	4	CR360L464
100A	2	CR360L562
100A	3	CR360L563
100A	4	CR360L564
200A	2	CR360L662
200A	3	CR360L663
200A	4	CR360L664
300A	2	CR360L762
300A	3	CR360L763
300A	4	CR360L764

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CR360L

Electrically held contactors
CR360L - 30A - 300A (2, 3 & 4 pole) (continued)



2: Select coil voltage and control circuit type (following available only with enclosure)

Continuous ampere rating						
Control circuit options	**Coil voltage**	**30A**	**60A**	**100A**	**200A**	**300A**
		Product number digits	**Product number digits**	**Product number digits**	**Product number digits**	**Product number digits**
None	24	24A	24A	24A	24A	24A
	120	02A	02A	02A	02A	02A
	208[1]	23A	23A	23A	23A	23A
	240[1]	03A	03A	03A	03A	03A
	277[1]	13A	13A	13A	13A	13A
	480[1]	04A	04A	04A	04A	04A
2 control circuit fuses	24	24D	24D	24D	24D	24D
	120	02D	02D	02D	02D	02D
	208	23D	23D	23D	23D	23D
	240	03D	03D	03D	03D	03D
	277	13D	13D	13D	13D	13D
	480	04D	04D	04D	04D	04D
CPT w/ 120V secondary, includes 2 primary, 1 secondary fuse	**CPT primary volts**					
	208	82T	82T	62T	48T	40T
	240	03T	03T	03T	03T	03T
	277	61T	61T	61T	61T	61T
	480	04T	04T	04T	04T	04T

[1]Control circuit fuses required for 200 and 300 amp forms if pilot devices selected in steps 3 or 4.

3: Select push buttons or selector switch

Push button, selector switch options	**NEMA Type 1 only standard-duty**	**Any enclosure heavy-duty**
	Product no. digit	**Product no. digit**
None	A	A
On-off push button	C[2]	K
Hand-off-auto selector switch	D	L
Off-on selector switch	E	M
Hand-off-auto selector switch with key	-	N
On-off-auto selector switch	F	P

[2]Add holding interlock with this modification

5: Select auxiliary contacts

	Product no. digit
None	Z
Holding interlock	A
Holding interlock plus 1NO	B
Holding interlock plus 1NC	C
Holding interlock plus 1NO, 1NC	D
Holding interlock plus 2NO	E
Holding interlock plus 2NC	F
Holding interlock plus 2NO, 1NC	G

4: Select indicating lights

Light option	**NEMA Type 1 only standard-duty**	**Any enclosure heavy-duty**
	Product no. digit	**Product no. digit**
None	A	A
Red across coil	B	J
Green across coil	-	K

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CR360L

Electrically held contactors
CR360L - 30A - 300A (2, 3 & 4 pole)

Technical data
For your convenience, examples of possible wiring schemes are provided on this page. Please review the ratings tables below and use the quick step-by-step selection guide provided, to choose the exact product required for your application.

Ratings
Open or enclosed ratings are 30-, 60-, 100-, 200-, and 300-ampere, ac full-load current.

Maximum AC voltage rating

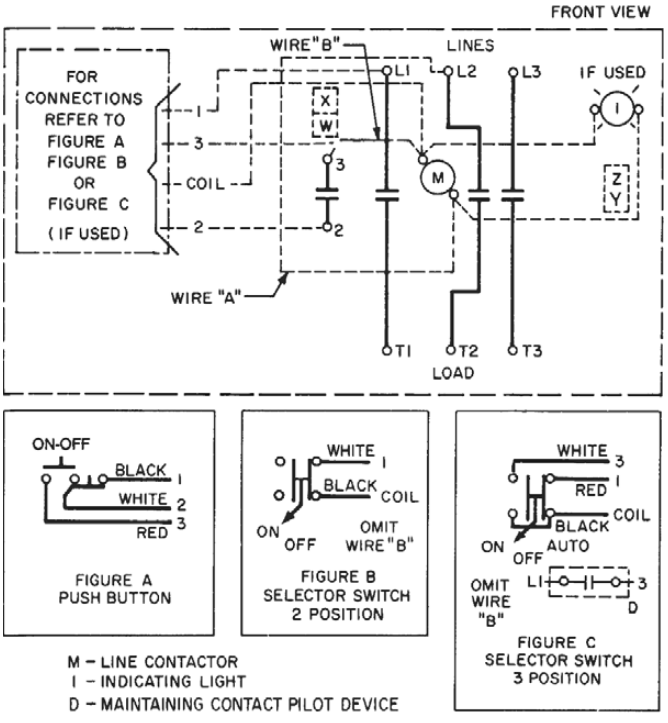
Lighting load	Line	Load
Tungsten	480	480
Ballast: fluorescent, mercury, sodium, e.g.	600	600

DC tungsten rating

Contactor size, continuous ampere rating	No. poles in series for:	
	125V maximum	250V maximum
30	2	3
60	2	4
100-300	2	2

Reference publications
Instructions

Continuous ampere rating	CR360L contactors
30	GEH-5099
60	GEH-5100
100	GEH-5101
200	GEH-5102
300	GEH-5103



Typical schematic diagram for CR360L lighting contactor

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CR360L

Electrically held contactors

Outlines, dimensions in.(mm) and weights (for estimating only)

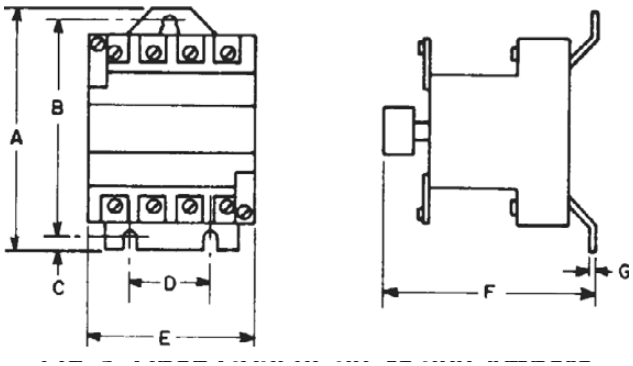


Fig. 1, Open CR360L 30- to 300-ampere, 2- and 3-pole forms

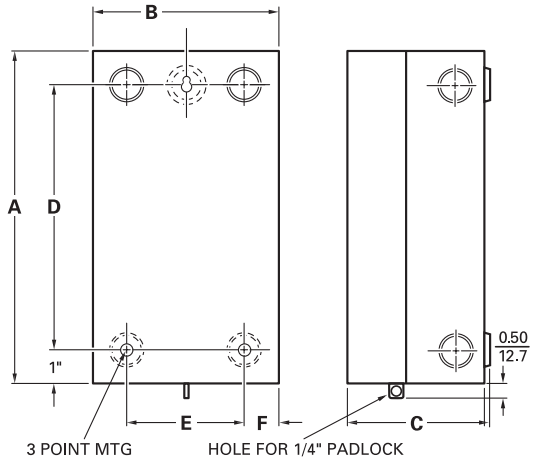


Fig. 2, Enclosed CR360L Type 1, 30-100A w/ standard pilot devices

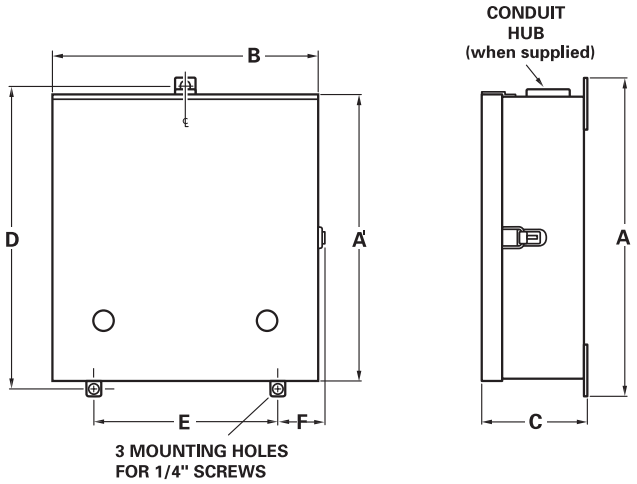


Fig. 3, Enclosed CR360L Type 12, 3R, 4/4X 3-point mounting

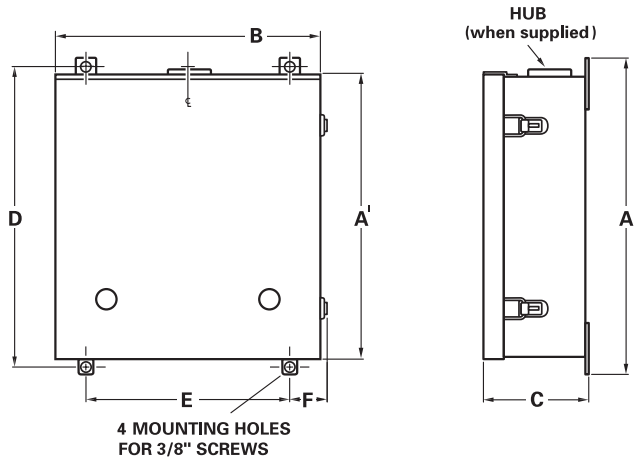


Fig. 4, Enclosed CR360L Type 1, 12, 3R, 4/4X 4-point mounting

Open CR360L - 30A - 300A (2, 3 & 4 pole)

Product number	Figure no.	Dimension in.(mm)							Approx. shipping wt. (lbs)
		A	B	C	D	E	F	G	
CR360L302	1	4.50 (114.3)	4.00 (101.6)	0.25 (6.4)	1.50 (38.1)	3.06 (77.7)	3.81 (96.7)	0.06 (1.5)	2.8
CR360L402	1	6.63 (168.4)	6.00 (152.4)	0.31 (7.8)	2.00 (50.8)	3.75 (95.2)	5.38 (136.6)	0.09 (2.2)	7
CR360L502	1	8.75 (222.2)	7.75 (196.8)	0.63 (16.0)	4.50 (114.3)	5.75 (146.0)	6.50 (165.1)	-	17.5
CR360L602	1	12.00 (304.8)	10.88 (276.4)	0.63 (16.0)	3.00 (76.2)	11.50 (292.1)	9.00 (228.6)	0.12 (3.0)	48
CR360L702	1	12.00 (304.8)	10.88 (276.4)	0.63 (16.0)	3.00 (76.2)	11.50 (292.1)	9.00 (228.6)	0.12 (3.0)	50

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CR360L

Electrically held contactors
Outlines, dimensions in.(mm) and weights (for estimating only)

Enclosed CR360L NEMA Type 1

Device	Fig. no.	Hub size	Dimension in.(mm)							Approx. shipping wt. (lbs)
			A	A'	B	C	D	E	F	
(30A) w/o CPT	2	-	10 (254)	-	6 (152.4)	4.63 (117.6)	8 (203.2)	4 (101.6)	1 (25.4)	6
(30A) w/ CPT	2	-	10 (254)	-	10 (254)	4.63 (117.6)	8 (203.2)	8 (203.2)	1 (25.4)	10
(30A) w/ heavy duty pilot devices	4	-	17.4 (442)	14.75 (374.7)	13 (330.2)	5.14 (130.6)	16.4 (416.6)	8 (203.2)	3.25 (82.6)	18
(60A) w/o CPT, 2- to 3-pole	2	-	13.25 (336.6)	-	7.38 (187.5)	6.13 (155.7)	11 (279.4)	5 (127)	1.19 (30.2)	13
(60A) w/ CPT	2	-	13.25 (336.6)	-	12 (304.8)	6.13 (155.7)	11 (279.4)	9 (228.6)	1.5 (38.1)	18
(60A) w/ heavy duty pilot devices	4	-	19.4 (492.8)	16.68 (423.7)	15 (381)	6.62 (168.1)	18.4 (467.4)	10 (254)	3.25 (82.6)	27
(100A) w/o CPT, 2- to 3-pole	2	-	20.25 (514.4)	-	8.75 (222.3)	7.31 (185.7)	17 (431.8)	5.75 (146.1)	1.5 (38.1)	35
(100A) all other	2	-	24.2 (614.7)	21.62 (549.1)	18 (457.2)	8.4 (213.4)	23.2 (589.3)	13 (330.2)	3.25 (82.6)	50
(200A) w/o CPT, 2- to 3-pole	4	-	45.5 (1155.7)	42.75 (1085.9)	17 (431.8)	10.75 (273.1)	44.5 (1130.3)	12 (304.8)	2.5 (63.5)	38
(200A) all other	4	-	45.5 (1155.7)	42.75 (1085.9)	23 (584.2)	10.75 (273.1)	44.5 (1130.3)	18 (457.2)	2.5 (63.5)	55
(300A) w/o CPT, 2- to 3-pole	4	-	45.5 (1155.7)	42.75 (1085.9)	17 (431.8)	10.75 (273.1)	44.5 (1130.3)	12 (304.8)	2.5 (63.5)	130
(300A) all other	4	-	45.5 (1155.7)	42.75 (1085.9)	23 (584.2)	10.75 (273.1)	44.5 (1130.3)	18 (457.2)	2.5 (63.5)	140

Enclosed CR360L NEMA Type 12

Device	Fig. no.	Hub size	Dimension in.(mm)							Approx. shipping wt. (lbs)
			A	A'	B	C	D	E	F	
(30A) w/o CPT	3	-	15.62 (396.7)	14.25 (362)	6.28 (159.5)	5.5 (139.7)	15 (381)	3 (76.2)	2.26 (57.4)	16
(30A) all other	3	-	15.62 (396.7)	14.25 (362)	14.25 (362)	5.5 (139.7)	15 (381)	11 (279.4)	2.26 (57.4)	20
(60A) w/o CPT, 2- to 3-pole	3	-	17.62 (447.5)	16.25 (412.8)	7.63 (193.8)	6.25 (158.8)	17 (431.8)	4.38 (111.3)	2.26 (57.4)	29
(60A) all other	3	-	17.62 (447.5)	16.25 (412.8)	12.25 (311.2)	6.25 (158.8)	17 (431.8)	9 (228.6)	2.26 (57.4)	38
(100A) w/o CPT, 2- to 3-pole	4	-	30 (762)	27.25 (692.2)	10.5 (266.7)	7.25 (184.2)	29 (736.6)	5.75 (146.1)	3.25 (82.6)	40
(100A) all other	4	-	24 (609.6)	21.38 (543.1)	18 (457.2)	7.88 (200.2)	23 (584.2)	13 (330.2)	3.25 (82.6)	55
(200A) w/o CPT, 2- to 3-pole	4	-	45.5 (1155.7)	42.75 (1085.9)	17 (431.8)	10.25 (260.4)	44.5 (1130.3)	12 (304.8)	3.25 (82.6)	44
(200A) all other	4	-	45.5 (1155.7)	42.75 (1085.9)	23 (584.2)	10.25 (260.4)	44.5 (1130.3)	18 (457.2)	3.25 (82.6)	60
(300A) w/o CPT, 2- to 3-pole	4	-	45.5 (1155.7)	42.75 (1085.9)	17 (431.8)	10.25 (260.4)	44.5 (1130.3)	12 (304.8)	3.25 (82.6)	140
(300A) all other	4	-	45.5 (1155.7)	42.75 (1085.9)	23 (584.2)	10.25 (260.4)	44.5 (1130.3)	18 (457.2)	3.25 (82.6)	150

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CR360L

Electrically held contactors
Outlines, dimensions in.(mm) and weights (for estimating only)

Enclosed CR360L NEMA Type 3R

Device	Fig. no.	Hub size	Dimension in.(mm)							Approx. shipping wt. (lbs)
			A	A'	B	C	D	E	F	
(30A) w/o CPT	3	1"	15.62 (396.7)	14.5 (368.3)	6.88 (174.8)	5.5 (139.7)	15 (381)	3 (76.2)	2.31 (58.7)	16
(30A) all other	3	1"	15.62 (396.7)	14.5 (368.3)	10.38 (263.7)	5.5 (139.7)	15 (381)	7 (177.8)	2.31 (58.7)	20
(60A) w/o CPT	3	1.5"	17.62 (447.5)	16.5 (419.1)	7.84 (199.1)	6.5 (165.1)	17 (431.8)	4.38 (111.3)	2.32 (58.9)	29
(60A) all other	3	1.5"	17.62 (447.5)	16.5 (419.1)	12.5 (317.5)	6.5 (165.1)	17 (431.8)	8 (203.2)	2.88 (73.2)	38
(100A) all	4	2"	24.5 (622.3)	22 (558.8)	17.2 (436.9)	7.25 (184.2)	23.5 (596.9)	11 (279.4)	3.62 (91.9)	55
(200A) all	4	3"	44.5 (1130.3)	41.5 (1054.1)	22 (558.8)	10.25 (260.4)	43.5 (1104.9)	16 (406.4)	3.62 (91.9)	60
(300A) all	4	3"	44.5 (1130.3)	42 (1066.8)	22 (558.8)	10.25 (260.4)	43.5 (1104.9)	16 (406.4)	3.62 (91.9)	150

Enclosed CR360L NEMA Type 4/4X

Device	Fig. no.	Hub size	Dimension in.(mm)							Approx. shipping wt. (lbs)
			A	A'	B	C	D	E	F	
(30A) w/o CPT	3	1"	15.62 (396.7)	14.5 (368.3)	6.38 (162.1)	5.5 (139.7)	15 (381)	3 (76.2)	1.69 (42.9)	16
(30A) all other	3	1"	15.52 (394.2)	14.5 (368.3)	10.38 (263.7)	5.5 (139.7)	15 (381)	7 (177.8)	1.69 (42.9)	20
(60A) w/o CPT	3	1.5"	17.62 (447.5)	16.5 (419.1)	7.75 (196.9)	6.5 (165.1)	17 (431.8)	4.38 (111.3)	1.69 (42.9)	29
(60A) all other	3	1.5"	17.62 (447.5)	16.5 (419.1)	12.5 (317.5)	6.25 (158.8)	17 (431.8)	8 (203.2)	2.25 (57.2)	38
(100A) all	4	2"	24.5 (622.3)	22 (558.8)	17 (431.8)	7.25 (184.2)	23.5 (596.9)	11 (279.4)	3 (76.2)	55
(200A) all	4	3.5"	44.5 (1130.3)	41.5 (1054.1)	22 (558.8)	10.25 (260.4)	43.5 (1104.9)	16 (406.4)	3 (76.2)	60
(300A) all	4	3.5"	44.5 (1130.3)	41.5 (1054.1)	22 (558.8)	10.25 (260.4)	43.5 (1104.9)	16 (406.4)	3 (76.2)	150

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CR160MC

Mechanically held contactors
CR160MC shallow mount 30A - 225A (2 & 3 pole)



CR160MC lighting contactor for bus mounting

Application information
The CR160MC mechanically held lighting contactors are designed for control of lighting loads such as tungsten, fluorescent, mercury, and sodium, as well as for general noninductive loads. The shallow-type design makes these contactors particularly adaptable for wall-cavity mounting applications.

The silver cadmium oxide main contacts and silver tungsten arcing contacts give the devices capability of handling a wide variety of lighting loads. Built-in clearing interlocks allow control from either momentary or maintained pilot devices.

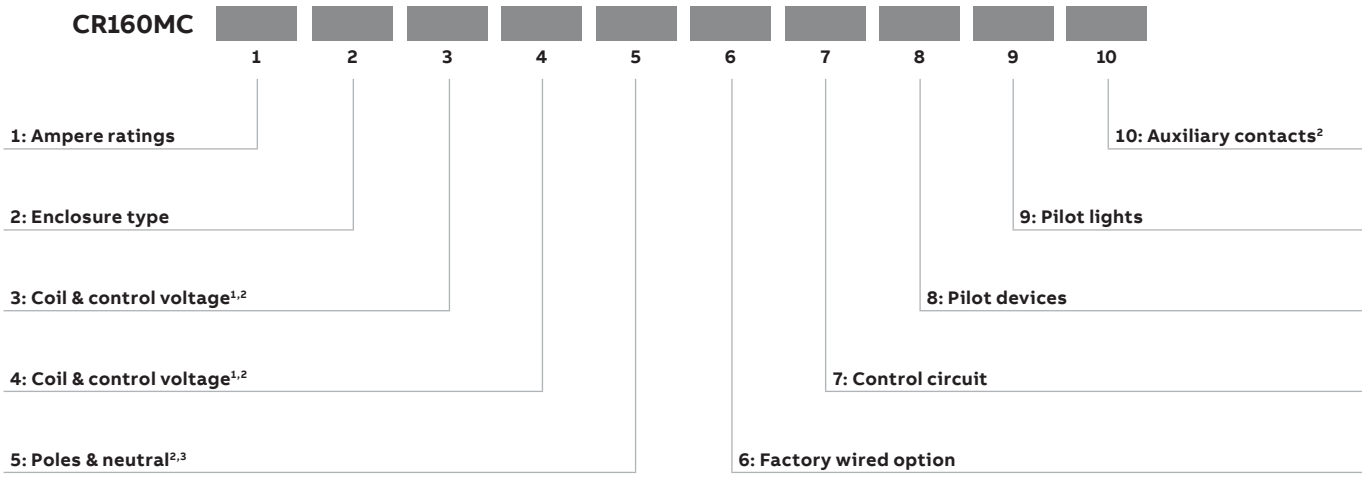
Features
- Can be mounted in enclosures that fit six-inch thick walls.
- Device is listed by Underwriters Laboratories, Inc.
- Front connected - for convenient wiring.
- Manually operated - by screwdriver or similar tool which reduces chances of tampering.
- Direct bus-mounted forms - for space savings, reduced mounting and wiring costs.
- Withstand current rating - 22,000 amperes rms symmetrical at 480 volts ac maximum and when used with molded case circuit breaker.

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CR160MC

Modified assembled forms - mechanically held
Product number selection instructions
Order by complete product number

CR160MC Mechanically held contactors
Follow the diagram below and tables on pages 3-36 through 3-38 to select the options and corresponding product number digits for your modified contactor.



[1]Separate control voltages may be ordered.
[2]When no auxiliary contacts are needed with an Open Bus Mounting and Open Sub-Panel device, the 12 digit product number must be ordered.
If auxiliary contacts are required, digits 13 through 16 must be "ACAA" and digit 17 should reflect the needed contacts.
[3]Replace digits 2 or A for 2 or 3 poles with correct digit if a neutral terminal board is required. Neutral terminal board is not available with flush mount or sub panel with baseplate controllers.

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CR160MC

Mechanically held contactors
CR160MC shallow mount 30A - 225A (2 & 3 pole)

1, 2 & 5a: Select ampere rating, enclosure type and number of poles

Continuous amp rating	Enclosure type	No. of poles	1, 2 & 5a: Product number[1,2]
30A	Enclosed NEMA Type 1	2	CR160MC**32**2**
30A	Enclosed NEMA Type 1	3	CR160MC**32**A**
30A	Enclosed NEMA Type 1 flush mount	2	CR160MC**3G**2**
30A	Enclosed NEMA Type 1 flush mount	3	CR160MC**3G**A**
30A	Enclosed NEMA Type 12/3R	2	CR160MC**3E**2**
30A	Enclosed NEMA Type 12/3R	3	CR160MC**3E**A**
30A	Enclosed NEMA Type 4/4X	2	CR160MC**3F**2**
30A	Enclosed NEMA Type 4/4X	3	CR160MC**3F**A**
30A	Open bus mounting	2	CR160MC**35**2**
30A	Open bus mounting	3	CR160MC**35**A**
30A	Open sub panel	2	CR160MC**31**2**
30A	Open sub panel	3	CR160MC**31**A**
30A	Sub panel w/ baseplate	2	CR160MC**3H**2**
30A	Sub panel w/ baseplate	3	CR160MC**3H**A**
60A	Enclosed NEMA Type 1	2	CR160MC**42**2**
60A	Enclosed NEMA Type 1	3	CR160MC**42**A**
60A	Enclosed NEMA Type 1 flush mount	2	CR160MC**4G**2**
60A	Enclosed NEMA Type 1 flush mount	3	CR160MC**4G**A**
60A	Enclosed NEMA Type 12/3R	2	CR160MC**4E**2**
60A	Enclosed NEMA Type 12/3R	3	CR160MC**4E**A**
60A	Enclosed NEMA Type 4/4X	2	CR160MC**4F**2**
60A	Enclosed NEMA Type 4/4X	3	CR160MC**4F**A**
60A	Open bus mounting	2	CR160MC**45**2**
60A	Open bus mounting	3	CR160MC**45**A**
60A	Open sub panel	2	CR160MC**41**2**
60A	Open sub panel	3	CR160MC**41**A**
60A	Sub panel w/ baseplate	2	CR160MC**4H**2**
60A	Sub panel w/ baseplate	3	CR160MC**4H**A**
75A	Enclosed NEMA Type 1	2	CR160MC**82**2**
75A	Enclosed NEMA Type 1	3	CR160MC**82**A**
75A	Enclosed NEMA Type 1 flush mount	2	CR160MC**8G**2**
75A	Enclosed NEMA Type 1 flush mount	3	CR160MC**8G**A**
75A	Enclosed NEMA Type 12/3R	2	CR160MC**8E**2**
75A	Enclosed NEMA Type 12/3R	3	CR160MC**8E**A**
75A	Enclosed NEMA Type 4/4X	2	CR160MC**8F**2**
75A	Enclosed NEMA Type 4/4X	3	CR160MC**8F**A**
75A	Open bus mounting	2	CR160MC**85**2**
75A	Open bus mounting	3	CR160MC**85**A**
75A	Open sub panel	2	CR160MC**81**2**
75A	Open sub panel	3	CR160MC**81**A**
75A	Sub panel w/ baseplate	2	CR160MC**8H**2**
75A	Sub panel w/ baseplate	3	CR160MC**8H**A**
100A	Enclosed NEMA Type 1	2	CR160MC**52**2**
100A	Enclosed NEMA Type 1	3	CR160MC**52**A**
100A	Enclosed NEMA Type 1 flush mount	2	CR160MC**5G**2**
100A	Enclosed NEMA Type 1 flush mount	3	CR160MC**5G**A**
100A	Enclosed NEMA Type 12/3R	2	CR160MC**5E**2**
100A	Enclosed NEMA Type 12/3R	3	CR160MC**5E**A**
100A	Enclosed NEMA Type 4/4X	2	CR160MC**5F**2**
100A	Enclosed NEMA Type 4/4X	3	CR160MC**5F**A**
100A	Open bus mounting	2	CR160MC**55**2**
100A	Open bus mounting	3	CR160MC**55**A**
100A	Open sub panel	2	CR160MC**51**2**
100A	Open sub panel	3	CR160MC**51**A**
100A	Sub panel w/ baseplate	2	CR160MC**5H**2**
100A	Sub panel w/ baseplate	3	CR160MC**5H**A**
150A	Enclosed NEMA Type 1	2	CR160MC**62**2**
150A	Enclosed NEMA Type 1	3	CR160MC**62**A**
150A	Enclosed NEMA Type 1 flush mount	2	CR160MC**6G**2**
150A	Enclosed NEMA Type 1 flush mount	3	CR160MC**6G**A**
150A	Enclosed NEMA Type 12/3R	2	CR160MC**6E**2**
150A	Enclosed NEMA Type 12/3R	3	CR160MC**6E**A**
150A	Enclosed NEMA Type 4/4X	2	CR160MC**6F**2**
150A	Enclosed NEMA Type 4/4X	3	CR160MC**6F**A**
150A	Open bus mounting	2	CR160MC**65**2**
150A	Open bus mounting	3	CR160MC**65**A**
150A	Open sub panel	2	CR160MC**61**2**
150A	Open sub panel	3	CR160MC**61**A**
150A	Sub panel w/ baseplate	2	CR160MC**6H**2**
150A	Sub panel w/ baseplate	3	CR160MC**6H**A**
200A	Enclosed NEMA Type 1	2	CR160MC**72**2**
200A	Enclosed NEMA Type 1	3	CR160MC**72**A**
200A	Enclosed NEMA Type 1 flush mount	2	CR160MC**7G**2**
200A	Enclosed NEMA Type 1 flush mount	3	CR160MC**7G**A**
200A	Enclosed NEMA Type 12/3R	2	CR160MC**7E**2**
200A	Enclosed NEMA Type 12/3R	3	CR160MC**7E**A**
200A	Enclosed NEMA Type 4/4X	2	CR160MC**7F**2**
200A	Enclosed NEMA Type 4/4X	3	CR160MC**7F**A**
200A	Open bus mounting	2	CR160MC**75**2**
200A	Open bus mounting	3	CR160MC**75**A**
200A	Open sub panel	2	CR160MC**71**2**
200A	Open sub panel	3	CR160MC**71**A**
200A	Sub panel w/ baseplate	2	CR160MC**7H**2**
200A	Sub panel w/ baseplate	3	CR160MC**7H**A**
225A	Enclosed NEMA Type 1	2	CR160MC**92**2**
225A	Enclosed NEMA Type 1	3	CR160MC**92**A**
225A	Enclosed NEMA Type 1 flush mount	2	CR160MC**9G**2**
225A	Enclosed NEMA Type 1 flush mount	3	CR160MC**9G**A**
225A	Enclosed NEMA Type 12/3R	2	CR160MC**9E**2**
225A	Enclosed NEMA Type 12/3R	3	CR160MC**9E**A**
225A	Enclosed NEMA Type 4/4X	2	CR160MC**9F**2**
225A	Enclosed NEMA Type 4/4X	3	CR160MC**9F**A**
225A	Open bus mounting	2	CR160MC**95**2**
225A	Open bus mounting	3	CR160MC**95**A**
225A	Open sub panel	2	CR160MC**91**2**
225A	Open sub panel	3	CR160MC**91**A**
225A	Sub panel w/ baseplate	2	CR160MC**9H**2**
225A	Sub panel w/ baseplate	3	CR160MC**9H**A**

[1]Replace ** with coil and control voltages selection.
[2]Replace digits 2 or A for 2 or 3 poles with correct digit if a neutral terminal board is required. Neutral terminal board is not available with flush mount or sub panel with baseplate controllers.

5b: Neutral terminal option

Use in place of the last 2 or A for 2 or 3 poles if a neutral terminal board is required. Only available on enclosed products except flush mount or sub panel with baseplate controllers.

Description	5b: Product no. digit
30 to 100 amps, 2-pole	7
30 to 100 amps, 3-pole	8
150 to 225 amps, 2-pole	7
150 to 225 amps, 3-pole	8

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CR160MC

Mechanically held contactors
CR160MC shallow mount 30A - 225A (2 & 3 pole)

3 & 4: Select contactor, coil, control module and relay voltages[1,2]

Contactor and coil voltage[3,4]	Control module and relay voltage[2,3,5]	3 & 4: Product no. digits	Enclosure type	Factory wiring	CPT and fusing
115-120V 60Hz	115-120V 60Hz	02	Open or enclosed	No	No CPT or fusing
200-208V 60Hz	200-208V 60Hz	23	Open or enclosed	No	No CPT or fusing
230-240V 60Hz	230-240V 60Hz	03	Open or enclosed	No	No CPT or fusing
265-277V 60Hz	265-277V 60Hz	82	Open or enclosed	No	No CPT or fusing
460-480V 60Hz	460-480V 60Hz	04	Open or enclosed	No	No CPT or fusing
115-120V 60Hz	24V 60Hz	30	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
200-208V 60Hz	24V 60Hz	32	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
230-240V 60Hz	24V 60Hz	34	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
265-277V 60Hz	24V 60Hz	36	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
460-480V 60Hz	24V 60Hz	38	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
115-120V 60Hz	24V DC	40	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
200-208V 60Hz	24V DC	42	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
230-240V 60Hz	24V DC	44	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
265-277V 60Hz	24V DC	46	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
460-480V 60Hz	24V DC	48	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
200-208V 60Hz	120V 60Hz	52	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
230-240V 60Hz	120V 60Hz	54	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
265-277V 60Hz	120V 60Hz	56	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
460-480V 60Hz	120V 60Hz	58	Enclosed only	Yes	No CPT, 2 fuses for coil circuit & user supplied control voltage
115-120V 60Hz	24V 60Hz	60	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
200-208V 60Hz	24V 60Hz	62	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
230-240V 60Hz	24V 60Hz	64	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
265-277V 60Hz	24V 60Hz	66	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
460-480V 60Hz	24V 60Hz	68	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
200-208V 60Hz	120V 60Hz	92	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
230-240V 60Hz	120V 60Hz	94	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
265-277V 60Hz	120V 60Hz	96	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses
460-480V 60Hz	120V 60Hz	98	Enclosed only	Yes	CPT with 2 primary & 1 secondary fuse & 2 coil circuit fuses

[1]For open bus mounting and open sub-panel devices, no other selections are needed unless auxiliary contacts are required. If auxiliary contacts are not needed, the 12 digit product number must be ordered.
[2]For products where factory wiring is provided, an interposing relay is supplied. The relay energizes contactor and has a coil voltage equal to the selected control voltage. See wiring diagrams for details.
[3]Contacts used to operate the device's coil and control module must have a B600 rating as a minimum.
[4]For applications where the coil is energized independently the source must be able to switch 3000VA.
[5]For applications where the control module will be independently energized, the source must be able to switch 26VA inrush and 4VA holding (AC circuits) or 3VA inrush and holding (DC circuits).

6: Select factory wiring

Factory control wiring	6: Product no. digit	Enclosure type
No	A	Open or enclosed
Yes	B	Enclosed

Note: Factory wiring must be "B" when coil and control voltages are different, or if pilot devices or pilot lights are required.

7: Select control circuit type[6]

Control circuit	7: Product no. digit	Enclosure type
2 wire control	B	Enclosed only
3 wire control	C	Open or enclosed

[6]Devices with factory wiring "A" are only available with 3 wire control circuits.

8: Select enclosure mounted pilot devices[7]
(Available only when there is an enclosure.)

Heavy duty, 30mm operators	8: Product no. digit
None	A
On-off push buttons[8]	B
Off-on selector switch[8,9]	C
On-off-auto selector switch[9]	D
Hand-off-auto selector switch[9]	E
Off-auto selector switch[8,9]	F
Off-on selector switch with spring return to center[8]	G
On-off-auto keyed selector switch[9,10]	H
Hand-off-auto keyed selector switch[9,10]	J

[7]Not available in flush mount or sub panel with baseplate controllers.
[8]Momentary operation of pilot device to control contactor. Available with 3 wire control.
[9]Maintained operation of pilot device to control contactor. Available with 2 wire control.
[10]Key removable in all positions.

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CR160MC

Mechanically held contactors
CR160MC shallow mount 30A - 225A (2 & 3 pole)

9: Select enclosure mounted pilot lights[11,12]
(Available only when there is an enclosure.)

Heavy duty, 30mm pilot lights with interchangeable red and green lenses	Type	9: Product no. digit
None	-	A
Red/green light ("on")	Standard	B
Red/green light ("off")	Standard	C
Red/green ("on") & red/green ("off") lights	Standard	F
Red/green light ("on")	Push-to-test	D
Red/green light ("off")	Push-to-test	E
Red/green ("on") & red/green ("off") lights	Push-to-test	G

[11]Not available in flush mount or sub panel with baseplate controllers.
[12]"On" pilot lights use the NO auxiliary contact; for off lights use the NC auxiliary contact.

10: Select auxiliary contacts

Description	10: Product no. digit
None	A
1NO extra	B
1NC extra	C
1NO and 1NC extra	D

Note: "On" pilot lights use a NO auxiliary contact. "Off" pilot lights use a NC auxiliary contact.

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CR160MC

Mechanically held contactors
CR160MC shallow mount 30A - 225A (2 & 3 pole)

Technical data

Maximum AC voltage ratings

Maximum AC volts			
Type of load	**Line**	**Load**	**Load**
Tungsten	480	277	480
Ballast	600	277	600
General use	600	277	600

Control line wiring

Control lines extending several hundred feet from the voltage source and pilot device(s) to the lighting contactor may require special consideration. Select a wire size adequate to provide not less than 85% of rated coil voltage at the coil, for pickup, while passing inrush current through the control circuit. Suggested wire sizes, for use with a “stiff” source of control voltage, are listed below. Interposing control relays are available for greater distances, and for use with pilot devices having ratings lower than those required for direct operation of the contactor coils.

Contactor size	**Wire size**	**Approx. resistance of single conductor copper wire ohms/1000 ft**	**Max. control line distance[1]**	
			115V-60Hz	**230V-60Hz**
30-225A	10	1	500 ft	1500 ft
30-225A	12	1.6	315 ft	950 ft
30-225A	14	2.5	200 ft	600 ft

[1]The use of two contactors on one remote control station would reduce the maximum control line distance to 1/2 the specified table value, etc.

Coil inrush current and recommended control circuit fuse size

Voltage 60Hz	**Inrush (amperes)**	**NEC fuse size (amperes)**
	CR160MC	**CR160MC**
115	26	8
230	13	4
277[2]	10	3
460[2]	7	2

[2]Breaking all lines

Note: Use of energy management systems, multiple control stations, or signals require prime control logic or use of a 2-wire control relay/module, to assure that on and off signals are never applied simultaneously to a mechanically held contactor.

Control transformer data

When the lighting contactor is used on the secondary of a transformer, the transformer must be sized to provide the required inrush current with 90% voltage applied to the transformer primary. As an alternative, utilize an interposing relay with a lower VA CPT. Connect the circuit with the line voltage driving the coil and the control voltage driving the relay coil.

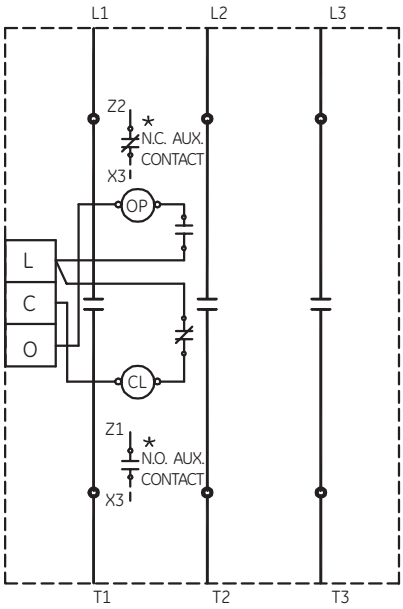
Reference publications

Instructions	GEH-3202

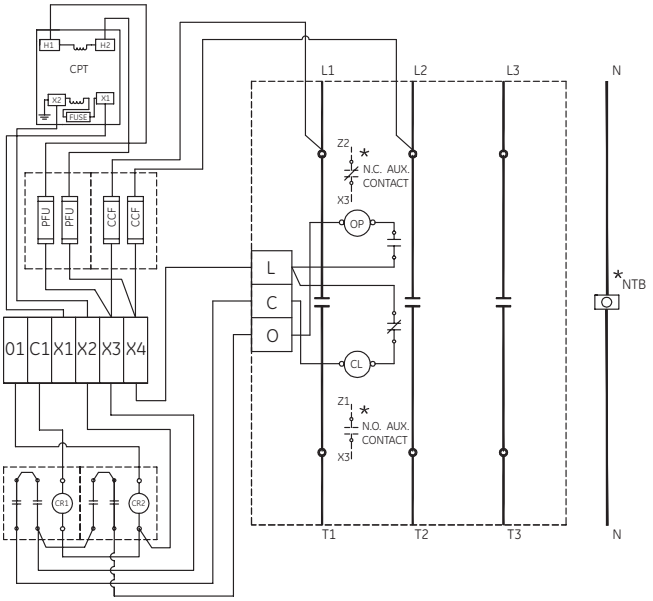
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CR160MC

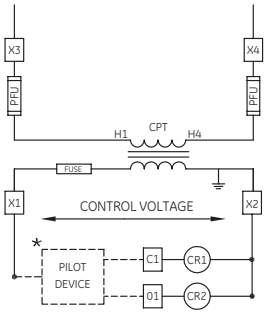
Mechanically held contactors
Outlines, dimensions and weights (for estimating only)

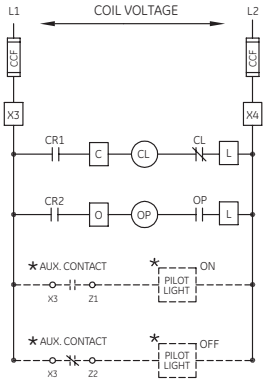


Open wiring example



Enclosed wiring example

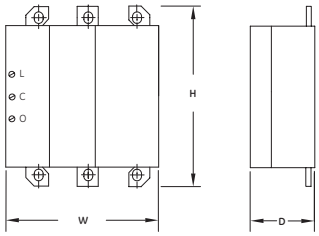




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CR160MC

Mechanically held contactors
Outlines, dimensions and weights (for estimating only)



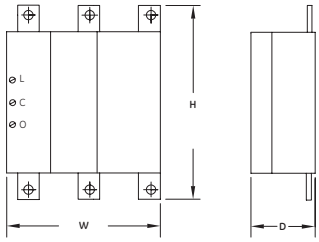
Open bus mounting contactor
30, 60, 75 and 100 amp

Open bus mounting contactor

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75 & 100	9.0	4.1	8.31 x 7.13 x 3.13	211.0 x 181.1 x 79.5	55-172305
150, 200 & 225	10.0	4.5	9.50 x 7.13 x 3.13	241.3 x 181.1 x 79.5	55-172305

Type 1 enclosures

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75 & 100	62.0	28.10	25.0 x 15.9 x 6.5	635.0 x 404.4 x 165.9	55-217830
150, 200 & 225	92.0	41.70	42.6 x 18.3 x 6.6	1081.0 x 463.3 x 167.9	55-217831



Open bus mounting contactor
150, 200 and 225 amp

Open sub panel contactor

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30	13.0	5.9	10.5 x 7.5 x 3.8	266.7 x 190.5 x 95.3	55-172306
60, 75 & 100	14.0	6.4	11.4 x 7.8 x 3.8	289.1 x 196.8 x 95.3	55-172306
150	16.5	7.5	13.3 x 9.0 x 3.8	336.6 x 228.3 x 95.3	55-172306
220 & 225	16.5	7.5	14.0 x 9.0 x 3.8	355.6 x 228.6 x 95.3	55-172306

Open sub panel contactor with baseplate

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75, 100, 150, 200 & 225	32.0	14.5	20.5 x 13.0 x 4.6	519.2 x 330.2 x 116.0	55-217838

Type 1 flush mount enclosures

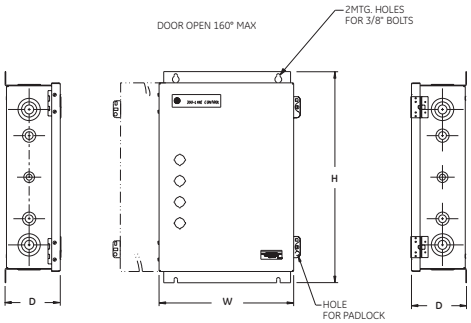
Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75 & 100	62.0	28.10	21.6 x 14.5 x 5.0	549.1 x 368.3 x 127.0	55-217836
150, 200 & 225	92.0	41.70	39.2 x 14.5 x 5.0	999.5 x 368.3 x 127.0	55-217837

Type 12/3R enclosures

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75 & 100	62.0	28.10	28.2 x 17.8 x 7.7	715.8 x 452.1 x 194.2	55-217832
150, 200 & 225	92.0	41.70	45.7 x 21.2 x 7.7	1161.8 x 537.7 x 194.2	55-217833

Type 4/4X enclosures

Amp rating	Weight (lbs)	Weight (kgs)	H x W x D (in)	H x W x D (mm)	Drawing no.
30, 60, 75 & 100	62.0	28.10	25.0 x 15.9 x 6.5	635.0 x 404.4 x 165.9	55-217834
150, 200 & 225	92.0	41.70	42.6 x 18.3 x 6.5	1081.0 x 463.3 x 165.9	55-217835



Type 1 enclosure

Wiring diagrams

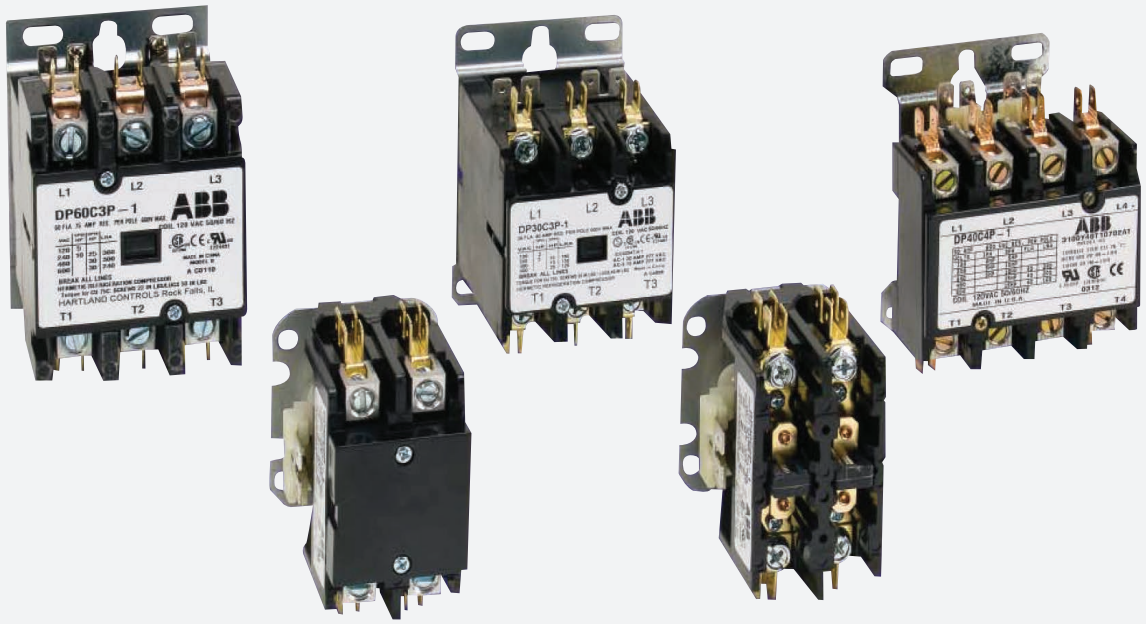
Control circuit	Enclosure type	Drawing no.
3 wire	Open	55-686607
2 wire, no CPT, control & coil voltage same	Enclosed	55-686608
3 wire, no CPT, control & coil voltage same	Enclosed	55-686609
2 wire, no CPT, control & coil voltage different	Enclosed	55-686610
3 wire, no CPT, control & coil voltage different	Enclosed	55-686611
2 wire, CPT	Enclosed	55-686612
3 wire, CPT	Enclosed	55-686613

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CONTROL SECTION 4

Definite purpose contactors



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Definite purpose contactors

The complete range







Applications

Type DP contactors provide high performance with flexibility and reliability, designed to match numerous applications including:

- Motors
- Power supplies
- Food service equipment
- Compressors
- Business machines
- Resistive heating
- Air conditioning
- Refrigeration equipment
- Welding

Agency approvals

- UL 508 Guide No. NLDX2, NLDX8 File # E224401
- CSA C22.2 No. 221260 (1456104) Class 3211 04 / 3211 84
- CE/Semko Certified, EN60947-4-1:2001

Features

- Available as:
  - 20 A, 25 A — 1-, 2- or 3- pole
  - 30 A — 1-, 2-, 3- or 4-pole
  - 40 A — 2-, 3- or 4-pole
  - 50 A, 60 A — 3-pole
  - 75 A, 90 A — 3-pole
- Industry standard mounting plate provides easily accessible mounting holes
- Coil terminals are provided with #6–32 screws and (1) 0.250 inch quick connect or dual 0.250 inch quick connect terminals
- Exclusive hex, slotted, Phillips #10–32 terminal screws for main terminals
- Coil is Class B (130 °C) insulation system with a wide range of voltages and 50/60 Hz ratings
- Double E magnet assembly provides optimal performance with reduced power consumption
- Snap-in auxiliary switch with 1 SPDT or 2 SPDT contacts available as an option
- 1 NO and 1 NC auxiliary contact block with 600 V AC rating available as an option
- Base assembly is made from highly arc-resistant polyester

DP | 30 | C | 3P - 1 / B

Definite purpose

Frame size

20 = 20 A	50 = 50 A
25 = 25 A	60 = 60 A
30 = 30 A	75 = 75 A
40 = 40 A	90 = 90 A

Contactor type

C = Non-reversing

Power poles

1P = 1 NO
2P = 2 NO
3P = 3 NO
4P = 4 NO

Coil voltage

F = 24 V AC
1 = 120 V AC
2 = 208/240 V AC
C = 277 V AC
4 = 480 V AC
6 = 575 V AC
80[1] = 12 V DC
81[1] = 24 V DC

[1]For DC voltages, replace the standard prefix DP with the prefix DPE.

B = Bulk pack quantities
MQC = Without quick connect

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Definite purpose contactors
20 A to 90 A







Full load amps	Number of poles	Locked rotor amps			Resistive amps	Maximum HP						Standard pack qty.	Catalog number
						Single-phase		Three-phase					
		240 V	480 V	600 V		120 V	240 V	208 V	240 V	480 V	600 V		
20	1	120	100	80	30	1	2	–	–	–	–	50	DP20C1P-1
20	2	120	100	80	30	2	3	–	–	–	–	50	DP20C2P-1
20	3	120	100	80	30	1.5	3	7.5	7.5	7.5	7.5	25	DP20C3P-1
25	1	150	125	100	35	1	2	–	–	–	–	50	DP25C1P-1
25	2	150	125	100	35	2	3	–	–	–	–	50	DP25C2P-1
25	3	150	125	100	35	2	5	7.5	10	15	20	25	DP25C3P-1
30	1	150	125	100	40	1	2	–	–	–	–	50	DP30C1P-1
30	2	150	125	100	40	2	3	–	–	–	–	50	DP30C2P-1
30	3	180	150	120	40	2	5	10	10	15	20	25	DP30C3P-1
30	4	180	150	120	40	2	5	10	10	15	–	25	DP30C4P-1
40	2	200	160	120	50	2	3	–	–	–	–	50	DP40C2P-1
40	3	240	200	160	50	3	7.5	10	10	20	25	25	DP40C3P-1
40	4	240	200	160	50	3	7.5	10	10	10	–	25	DP40C4P-1
50	3	300	250	200	65	3	7.5	15	15	25	25	25	DP50C3P-1
60	3	360	300	240	75	5	10	20	25	30	30	25	DP60C3P-1
75	3	–	375	300	90	5	10	20	25	40	40	25	DP75C3P-1
90	3	–	600	480	120	7.5	20	30	25	50	50	25	DP90C3P-1

Catalog numbers in this chart include a 120 V AC coil. To select other coil voltages, use the chart to find the appropriate coil voltage. Replace the -1 above with the required coil voltage. For example, for a 208/240 V AC coil in a single-pole 20 A contactor, the catalog number would be DP20C2P-2.

Coil voltage selection chart, AC

Voltage	24 V AC	120 V AC	208/240 V AC	277 V AC	480 V AC	575 V AC
Suffix #	F	1	2	C	4	6

Coil voltage selection chart, DC[1]

Voltage	12 V DC	24 V DC
Suffix #	80	81

[1]For DC coils, the prefix of the catalog number changes from DP to DPE; for example, a 12 V DC coil in a 3-pole 20 A contactor would use the catalog number DPE20C3P-80.

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Definite purpose contactors
Accessories



Auxiliary contact blocks for 3- and 4-pole configurations

Description	Catalog number	
	DP20 to DP40	DP50 to DP60
Form C SPDT	CADP40-10	CADP40-10
Double form C SPDT	CADP40-20	CADP40-20
Form Z SPDT (1 NO and 1 NC)[1]	CADP40-11	CADP40-11

[1]Must be the same polarity on both poles.

Mechanical interlock

Application	Catalog number
DP30C3P-*	VMDP-1
DP40C3P-*	VMDP-1



Protective cover

Application	Catalog number
DP20C2P-*	DP-2-AC
DP25C2P-*	DP-2-AC
DP30C2P-*	DP-2-AC

DIN-rail mounting bracket

Application	Catalog number
DP20C1P-*	DP/DIN1-2
DP25C1P-*	DP/DIN1-2
DP30C1P-*	DP/DIN1-2
DP20C2P-*	DP/DIN1-2
DP25C2P-*	DP/DIN1-2
DP30C2P-*	DP/DIN1-2

Note: Replace * with appropriate coil voltage as per previous page

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CONTROL SECTION 5

IEC manual motor starters

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5-11 MO165 manual motor starters magnetic only

Circuit breakers for transformer protection

5-12 MS132-T circuit breakers for transformer protection
5-13 MS132-KT circuit breakers for transformer protection with push-in spring terminals

5-14 Accessories

DRAS09 ... DRAS16 enclosed direct-on-line starters

5-22 4 to 7.5 kW, protected by thermal overload relays, AC or DC operated
5-24 Up to 7.5 kW and 10 hp, protected by thermal overload relays, AC operated

HF0.6, HF2.4, HF9 electronic compact starters

5-26 Direct-on-line starter
5-27 Reversing starter

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Manual motor starters
Overview







Type	**MS116**	**MS132**	**MS165**
Thermal and electromagnetic protection	Yes	Yes	Yes
Electromagnetic protection	–	–	–
Phase loss sensitivity	Yes	Yes	Yes
Switch position	ON/OFF	ON/OFF/TRIP	ON/OFF/TRIP
Magnetic trip indication	–	Yes	Yes
Lockable handle without accessories	–	Yes	Yes
Disconnecting feature	Yes	Yes	Yes
Width	45 mm	45 mm	55 mm
Rated operational current Ie	0.10 ... 32 A	0.10 ... 32 A	10 ... 80 A
Setting range	0.10 ... 32 A	0.10 ... 32 A	10 ... 80 A
Ambient air temperature	-25 ... +55°C[1]	-25 ... +60°C[1]	-25 ... +60°C[1]

[1] Compensated

Accessories			
Auxiliary contact		HKF1, HK1	
Signaling contact	for tripped alarm	SK1	
	for short-circuit alarm	–	CK1
Shunt trip		AA1	
Undervoltage release		UA1	

Table for short-circuit ratings for 400/415 V AC

	Standard range MS116			**Performance range MS132, MS165**		
Selection parameters						
Rated operational power	**Setting range for thermal release**	**Type**	**Short-circuit breaking capacity**		**Type**	**Short-circuit breaking capacity**	
			Icu	**Ics**		**Icu**	**Ics**
0.03 kW[2]	0.1 ... 0.16 A	MS116-0.16	100 kA	50 kA	MS132-0.16[3]	100 kA	100 kA
0.06 kW	0.16 ... 0.25 A	MS116-0.25	100 kA	50 kA	MS132-0.25[3]	100 kA	100 kA
0.09 kW	0.25 ... 0.4 A	MS116-0.4	100 kA	50 kA	MS132-0.4[3]	100 kA	100 kA
0.18 kW	0.4 ... 0.63 A	MS116-0.63	100 kA	50 kA	MS132-0.63[3]	100 kA	100 kA
0.25 kW	0.63 ... 1.0 A	MS116-1.0	100 kA	50 kA	MS132-1.0[3]	100 kA	100 kA
0.55 kW	1.0...1.6 A	MS116-1.6	100 kA	50 kA	MS132-1.6[3]	100 kA	100 kA
0.75 kW	1.6...2.5 A	MS116-2.5	75 kA	50 kA	MS132-2.5[3]	100 kA	100 kA
1.5 kW	2.5...4.0 A	MS116-4.0	75 kA	50 kA	MS132-4.0[3]	100 kA	100 kA
2.2 kW	4.0...6.3 A	MS116-6.3	50 kA	50 kA	MS132-6.3[3]	100 kA	100 kA
4.0 kW	6.3...10 A	MS116-10	50 kA	50 kA	MS132-10[3]	100 kA	100 kA
5.5 kW	8...12 A	MS116-12	50 kA	25 kA	MS132-12	100 kA	100 kA
7.5 kW	10...16 A	MS116-16	16 kA	16 kA	MS132-16[3] / MS165-16	100 kA	100 kA
7.5 kW	14 ... 20 A	–	–	–	MS165-20	100 kA	100 kA
7.5 kW	16...20 A	MS116-20	16 kA	10 kA	MS132-20[3]	100 kA	100 kA
11 kW	18 ... 25 A	–	–	–	MS165-25	100 kA	100 kA
11 kW	20...25 A	MS116-25	16 kA	10 kA	MS132-25[3]	50 kA	50 kA
15 kW	25...32 A	MS116-32	16 kA	10 kA	MS132-32[3]	50 kA	25 kA
15 kW	23 ... 32 A	–	–	–	MS165-32	100 kA	100 kA
22 kW	30 ... 42 A	–	–	–	MS165-42	50 kA	50 kA
22 kW	40 ... 54 A	–	–	–	MS165-54	50 kA	30 kA
25 kW	–	–	–	–	–	–	–
30 kW	52 ... 65 A	–	–	–	MS165-65	50 kA	30 kA
37 kW	62 ... 73 A	–	–	–	MS165-73	30 kA	30 kA
45 kW	70 ... 80 A	–	–	–	MS165-80	30 kA	30 kA

[2] 690 V AC

[3] Available with push-in spring terminals.

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Manual motor starters
Overview





Type	MO132	MO165	MS132-T
Thermal and electromagnetic protection	–	–	Yes
Electromagnetic protection	Yes	Yes	–
Phase loss sensitivity	–	–	Yes
Switch position	ON/OFF/TRIP	ON/OFF/TRIP	ON/OFF/TRIP
Magnetic trip indication	–	–	Yes
Lockable handle without accessories	Yes	Yes	Yes
Disconnecting feature	Yes	Yes	Yes
Width	45 mm	55 mm	45 mm
Rated operational current Ie	0.16 ... 32 A	16 ... 80 A	0.16 ... 25 A
Setting range	–	–	0.10 ... 25 A
Ambient air temperature	-25 ... +60°C	-25 ... +60°C	-25 ... +60°C[1]

[1] Compensated

Accessories				
Auxiliary contact		HKF1, HK1		HKF1, HK1
Signaling contact	for tripped alarm	SK1		SK1
	for short-circuit alarm	–		CK1
Shunt trip		AA1		AA1
Undervoltage release		UA1		UA1

Table for short-circuit ratings for 400/415 V AC

		Performance range MO132, MO165			Transformer protection MS132-T	
Selection parameters						
Rated operational power	**Setting range for thermal release**	**Type**	**Short-circuit breaking capacity**		**Type**	**Short-circuit breaking capacity**
			Icu	**Ics**		**Icu / Ics**
0.03 kW[2]	0.1 ... 0.16 A	MO132-0.16	100 kA	100 kA	MS132-0.16T[3]	100 kA
0.06 kW	0.16 ... 0.25 A	MO132-0.25	100 kA	100 kA	MS132-0.25T[3]	100 kA
0.09 kW	0.25 ... 0.4 A	MO132-0.4	100 kA	100 kA	MS132-0.4T[3]	100 kA
0.18 kW	0.4 ... 0.63 A	MO132-0.63	100 kA	100 kA	MS132-0.63T[3]	100 kA
0.25 kW	0.63 ... 1.0 A	MO132-1.0	100 kA	100 kA	MS132-1.0T[3]	100 kA
0.55 kW	1.0...1.6 A	MO132-1.6	100 kA	100 kA	MS132-1.6T[3]	100 kA
0.75 kW	1.6...2.5 A	MO132-2.5	100 kA	100 kA	MS132-2.5T[3]	100 kA
1.5 kW	2.5...4.0 A	MO132-4.0	100 kA	100 kA	MS132-4.0T[3]	100 kA
2.2 kW	4.0...6.3 A	MO132-6.3	100 kA	100 kA	MS132-6.3T[3]	100 kA
4.0 kW	6.3...10 A	MO132-10	100 kA	100 kA	MS132-10T[3]	100 kA
5.5 kW	8...12 A	MO132-12	100 kA	100 kA	MS132-12T	100 kA
7.5 kW	10...16 A	MO132-16 / MO165-16	100 kA	100 kA	MS132-16T[3]	100 kA
7.5 kW	14 ... 20 A	MO165-20	100 kA	100 kA	–	–
7.5 kW	16...20 A	MO132-20	100 kA	100 kA	MS132-20T[3]	100 kA
11 kW	18 ... 25 A	–	–	–	–	–
11 kW	20...25 A	MO132-25 / MO165-25	50 kA / 100 kA	50 kA / 100 kA	MS132-25T[3]	50 kA
15 kW	25...32 A	MO132-32	50 kA	25 kA	Transformer protection: The instantaneous short-circuit current setting is 20 times the rated operational current.	
15 kW	23 ... 32 A	MO165-32	100 kA	100 kA		
22 kW	30 ... 42 A	MO165-42	50 kA	50 kA		
22 kW	40 ... 54 A	MO165-54	50 kA	30 kA		
25 kW	–	–	–	–		
30 kW	52 ... 65 A	MO165-65	50 kA	30 kA		
37 kW	62 ... 73 A	MO165-73	30 kA	30 kA		
45 kW	70 ... 80 A	MO165-80	30 kA	30 kA		

[2] 690 V AC
[3] Available with push-in spring terminals.

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Manual motor starters
MS116


MS116-16


MS116-25


MS116-0.16-HKF1-11


MS116-32-HKF1-11

0.10 to 32 A – with thermal and electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03[1]	0.10 ... 0.16	50	2.00	MS116-0.16	1SAM250000R1001	0.225
0.06	0.16 ... 0.25	50	3.10	MS116-0.25	1SAM250000R1002	0.225
0.09	0.25 ... 0.40	50	5.00	MS116-0.4	1SAM250000R1003	0.225
0.18	0.40 ... 0.63	50	7.90	MS116-0.63	1SAM250000R1004	0.225
0.25	0.63 ... 1.00	50	12.5	MS116-1.0	1SAM250000R1005	0.225
0.55	1.00 ... 1.60	50	20.0	MS116-1.6	1SAM250000R1006	0.265
0.75	1.60 ... 2.50	50	31.3	MS116-2.5	1SAM250000R1007	0.265
1.50	2.50 ... 4.00	50	50.0	MS116-4.0	1SAM250000R1008	0.265
2.20	4.00 ... 6.30	50	78.8	MS116-6.3	1SAM250000R1009	0.265
4.00	6.30 ... 10.0	50	150	MS116-10	1SAM250000R1010	0.265
5.50	8.00 ... 12.0	25	180	MS116-12	1SAM250000R1012	0.265
7.50	10.0 ... 16.0	16	240	MS116-16	1SAM250000R1011	0.265
7.50	16.0 ... 20.0	10	300	MS116-20	1SAM250000R1013	0.310
11.0	20.0 ... 25.0	10	375	MS116-25	1SAM250000R1014	0.310
15.0	25.0 ... 32.0	10	480	MS116-32	1SAM250000R1015	0.310
Mounted auxiliary contacts 1 N.O. + 1 N.C.						
0.03[1]	0.10 ... 0.16	50	2.00	MS116-0.16-HKF1-11	1SAM250005R1001	0.240
0.06	0.16 ... 0.25	50	3.10	MS116-0.25-HKF1-11	1SAM250005R1002	0.240
0.09	0.25 ... 0.40	50	5.00	MS116-0.4-HKF1-11	1SAM250005R1003	0.240
0.18	0.40 ... 0.63	50	7.90	MS116-0.63-HKF1-11	1SAM250005R1004	0.240
0.25	0.63 ... 1.00	50	12.5	MS116-1.0-HKF1-11	1SAM250005R1005	0.240
0.55	1.00 ... 1.60	50	20.0	MS116-1.6-HKF1-11	1SAM250005R1006	0.280
0.75	1.60 ... 2.50	50	31.3	MS116-2.5-HKF1-11	1SAM250005R1007	0.280
1.50	2.50 ... 4.00	50	50.0	MS116-4.0-HKF1-11	1SAM250005R1008	0.280
2.20	4.00 ... 6.30	50	78.8	MS116-6.3-HKF1-11	1SAM250005R1009	0.280
4.00	6.30 ... 10.0	50	150	MS116-10.0-HKF1-11	1SAM250005R1010	0.280
5.50	8.00 ... 12.0	25	180	MS116-12.0-HKF1-11	1SAM250005R1012	0.280
7.50	10.0 ... 16.0	16	240	MS116-16.0-HKF1-11	1SAM250005R1011	0.280
7.50	16.0 ... 20.0	10	300	MS116-20-HKF1-11	1SAM250005R1013	0.326
11.0	20.0 ... 25.0	10	375	MS116-25-HKF1-11	1SAM250005R1014	0.326
15.0	25.0 ... 32.0	10	480	MS116-32-HKF1-11	1SAM250005R1015	0.326

Note: Manual motor starters should always be selected so that the actual motor current is within the setting range.
[1] 690 V

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Manual motor starters
MS132


MS132-10


MS132-32


MS132-0.16-HKF1-11


MS132-32-HKF1-11

0.10 to 32 A – with thermal and electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03[1]	0.10 ... 0.16	100	2.00	MS132-0.16	1SAM350000R1001	0.215
0.06	0.16 ... 0.25	100	3.10	MS132-0.25	1SAM350000R1002	0.215
0.09	0.25 ... 0.40	100	5.00	MS132-0.4	1SAM350000R1003	0.215
0.18	0.40 ... 0.63	100	7.90	MS132-0.63	1SAM350000R1004	0.215
0.25	0.63 ... 1.00	100	12.5	MS132-1.0	1SAM350000R1005	0.215
0.55	1.00 ... 1.60	100	20.0	MS132-1.6	1SAM350000R1006	0.265
0.75	1.60 ... 2.50	100	31.3	MS132-2.5	1SAM350000R1007	0.265
1.50	2.50 ... 4.00	100	50.0	MS132-4.0	1SAM350000R1008	0.265
2.20	4.00 ... 6.30	100	78.8	MS132-6.3	1SAM350000R1009	0.265
4.00	6.30 ... 10.0	100	150	MS132-10	1SAM350000R1010	0.265
5.50	8.00 ... 12.0	100	180	MS132-12	1SAM350000R1012	0.310
7.50	10.0 ... 16.0	100	240	MS132-16	1SAM350000R1011	0.310
7.50	16.0 ... 20.0	100	300	MS132-20	1SAM350000R1013	0.310
11.0	20.0 ... 25.0	50	375	MS132-25	1SAM350000R1014	0.310
15.0	25.0 ... 32.0	25	480	MS132-32	1SAM350000R1015	0.310
Mounted auxiliary contacts 1 N.O. + 1 N.C.						
0.03[1]	0.10 ... 0.16	100	2.00	MS132-0.16-HKF1-11	1SAM350005R1001	0.231
0.06	0.16 ... 0.25	100	3.10	MS132-0.25-HKF1-11	1SAM350005R1002	0.231
0.09	0.25 ... 0.40	100	5.0	MS132-0.4-HKF1-11	1SAM350005R1003	0.231
0.18	0.40 ... 0.63	100	7.90	MS132-0.63-HKF1-11	1SAM350005R1004	0.231
0.25	0.63 ... 1.00	100	12.5	MS132-1.0-HKF1-11	1SAM350005R1005	0.231
0.55	1.00 ... 1.60	100	20.0	MS132-1.6-HKF1-11	1SAM350005R1006	0.281
0.75	1.60 ... 2.50	100	31.3	MS132-2.5-HKF1-11	1SAM350005R1007	0.281
1.50	2.50 ... 4.00	100	50.0	MS132-4.0-HKF1-11	1SAM350005R1008	0.281
2.20	4.00 ... 6.30	100	78.8	MS132-6.3-HKF1-11	1SAM350005R1009	0.281
4.00	6.30 ... 10.0	100	150	MS132-10.0-HKF1-11	1SAM350005R1010	0.281
5.50	8.00 ... 12.0	100	180	MS132-12.0-HKF1-11	1SAM350005R1012	0.326
7.50	10.0 ... 16.0	100	240	MS132-16.0-HKF1-11	1SAM350005R1011	0.326
7.50	16.0 ... 20.0	100	300	MS132-20-HKF1-11	1SAM350005R1013	0.326
11.0	20.0 ... 25.0	50	375	MS132-25-HKF1-11	1SAM350005R1014	0.326
15.0	25.0 ... 32.0	25	480	MS132-32-HKF1-11	1SAM350005R1015	0.326
Mounted auxiliary contacts 2 N.O. + 0 N.C.						
7.50	10 ... 16	100	240	MS132-16-HKF1-20	1SAM350006R1011	0.326

Note: Manual motor starters should always be selected so that the actual motor current is within the setting range.
[1] 690 V

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Manual motor starters

MS132-K with push-in spring terminals



MS132-32K

0.10 to 32 A – with thermal and electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03[1]	0.10 ... 0.16	100	2.00	MS132-0.16K	1SAM350010R1001	0.256
0.06	0.16 ... 0.25	100	3.10	MS132-0.25K	1SAM350010R1002	0.256
0.09	0.25 ... 0.40	100	5.00	MS132-0.4K	1SAM350010R1003	0.256
0.18	0.40 ... 0.63	100	7.90	MS132-0.63K	1SAM350010R1004	0.256
0.25	0.63 ... 1.00	100	12.5	MS132-1.0K	1SAM350010R1005	0.256
0.55	1.00 ... 1.60	100	20.0	MS132-1.6K	1SAM350010R1006	0.298
0.75	1.60 ... 2.50	100	31.3	MS132-2.5K	1SAM350010R1007	0.280
1.50	2.50 ... 4.00	100	50.0	MS132-4.0K	1SAM350010R1008	0.286
2.20	4.00 ... 6.30	100	78.8	MS132-6.3K	1SAM350010R1009	0.289
4.00	6.30 ... 10.0	100	150	MS132-10K	1SAM350010R1010	0.296
7.50	10.0 ... 16.0	100	240	MS132-16K	1SAM350010R1011	0.316
7.50	16.0 ... 20.0	100	300	MS132-20K	1SAM350010R1013	0.317
11.0	20.0 ... 25.0	50	375	MS132-25K	1SAM350010R1014	0.316
15.0	25.0 ... 32.0	25	480	MS132-32K	1SAM350010R1015	0.316

Note: Manual motor starters should always be selected so that the actual motor current is within the setting range.
[1] 690 V

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Manual motor starters
MS165



MS165-65

10 to 80 A – with thermal and electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
7.5	10 ... 16	100	240	MS165-16	1SAM451000R1011	0.950
7.5	14 ... 20	100	300	MS165-20	1SAM451000R1012	0.950
11	18 ... 25	100	375	MS165-25	1SAM451000R1013	0.960
15	23 ... 32	100	480	MS165-32	1SAM451000R1014	0.970
22	30 ... 42	50	630	MS165-42	1SAM451000R1015	0.970
22	40 ... 54	30	810	MS165-54	1SAM451000R1016	0.970
30	52 ... 65	30	975	MS165-65	1SAM451000R1017	0.980
37	62 ... 73	30	1022	MS165-73	1SAM451000R1018	1.000
45	70 ... 80	30	1120	MS165-80	1SAM451000R1019	1.000

Note: Manual motor starters should always be selected so that the actual motor current is within the setting range.

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Manual motor starters
MO132 magnetic only



MO132-6.3



MO132-32

0.16 to 32 A – with electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Rated operational current	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03[1]	0.16	100	2.00	MO132-0.16	1SAM360000R1001	0.215
0.06	0.25	100	3.10	MO132-0.25	1SAM360000R1002	0.215
0.09	0.40	100	5.00	MO132-0.4	1SAM360000R1003	0.215
0.12	0.63	100	7.90	MO132-0.63	1SAM360000R1004	0.215
0.25	1.0	100	12.5	MO132-1.0	1SAM360000R1005	0.215
0.55	1.6	100	20.0	MO132-1.6	1SAM360000R1006	0.265
0.75	2.5	100	31.3	MO132-2.5	1SAM360000R1007	0.265
1.5	4.0	100	50.0	MO132-4.0	1SAM360000R1008	0.265
2.2	6.3	100	78.8	MO132-6.3	1SAM360000R1009	0.265
4.0	10	100	125	MO132-10	1SAM360000R1010	0.265
5.5	12	100	150	MO132-12	1SAM360000R1012	0.310
7.5	16	100	200	MO132-16	1SAM360000R1011	0.310
7.5	20	100	250	MO132-20	1SAM360000R1013	0.310
11	25	50	313	MO132-25	1SAM360000R1014	0.310
15	32	25	400	MO132-32	1SAM360000R1015	0.310

Note: For overload protection of motors, an appropriate thermal or electronic overload relay must be used.
[1] 690 V

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Manual motor starters
MO165 magnetic only



MO165-65

16 to 80 A – with electromagnetic protection

Rated operational power 400 V AC-3, AC-3e	Rated operational current	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
7.5	16	100	240	MO165-16	1SAM461000R1011	0.950
7.5	20	100	300	MO165-20	1SAM461000R1012	0.950
11	25	100	375	MO165-25	1SAM461000R1013	0.960
15	32	100	480	MO165-32	1SAM461000R1014	0.970
22	42	50	630	MO165-42	1SAM461000R1015	0.970
22	54	30	810	MO165-54	1SAM461000R1016	0.970
30	65	30	975	MO165-65	1SAM461000R1017	0.980
37	73	30	1022	MO165-73	1SAM461000R1018	1.000
45	80	30	1120	MO165-80	1SAM461000R1019	1.000

Note: For overload protection of motors, an appropriate thermal or electronic overload relay must be used.

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Circuit breakers for transformer protection
MS132-T



MS132-10T



MS132-25T

0.10 to 25 A – with thermal and electromagnetic protection

Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
A	kA	A			kg
0.10 ... 0.16	100	3.2	MS132-0.16T	1SAM340000R1001	0.215
0.16 ... 0.25	100	5	MS132-0.25T	1SAM340000R1002	0.215
0.25 ... 0.40	100	8	MS132-0.4T	1SAM340000R1003	0.215
0.40 ... 0.63	100	12.6	MS132-0.63T	1SAM340000R1004	0.215
0.63 ... 1.00	100	20	MS132-1.0T	1SAM340000R1005	0.215
1.00 ... 1.60	100	32	MS132-1.6T	1SAM340000R1006	0.265
1.60 ... 2.50	100	50	MS132-2.5T	1SAM340000R1007	0.265
2.50 ... 4.00	100	80	MS132-4.0T	1SAM340000R1008	0.265
4.00 ... 6.30	100	126	MS132-6.3T	1SAM340000R1009	0.265
6.30 ... 10.0	100	200	MS132-10T	1SAM340000R1010	0.265
8.00 ... 12.0	100	240	MS132-12T	1SAM340000R1012	0.310
10.0 ... 16.0	100	320	MS132-16T	1SAM340000R1011	0.310
16.0 ... 20.0	100	400	MS132-20T	1SAM340000R1013	0.310
20.0 ... 25.0	50	500	MS132-25T	1SAM340000R1014	0.310

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Circuit breakers for transformer protection
MS132-KT with push-in spring terminals



MS132-KT

0.10 to 25 A – with thermal and electromagnetic protection

Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
A	kA	A			kg
0.10 ... 0.16	100	3.2	MS132-0.16KT	1SAM340010R1001	0.256
0.16 ... 0.25	100	5	MS132-0.25KT	1SAM340010R1002	0.256
0.25 ... 0.40	100	8	MS132-0.4KT	1SAM340010R1003	0.256
0.40 ... 0.63	100	12.6	MS132-0.63KT	1SAM340010R1004	0.256
0.63 ... 1.00	100	20	MS132-1.0KT	1SAM340010R1005	0.256
1.00 ... 1.60	100	32	MS132-1.6KT	1SAM340010R1006	0.298
1.60 ... 2.50	100	50	MS132-2.5KT	1SAM340010R1007	0.280
2.50 ... 4.00	100	80	MS132-4.0KT	1SAM340010R1008	0.286
4.00 ... 6.30	100	126	MS132-6.3KT	1SAM340010R1009	0.289
6.30 ... 10.0	100	200	MS132-10KT	1SAM340010R1010	0.296
10.0 ... 16.0	100	320	MS132-16KT	1SAM340010R1011	0.316
16.0 ... 20.0	100	400	MS132-20KT	1SAM340010R1013	0.317
20.0 ... 25.0	50	500	MS132-25KT	1SAM340010R1014	0.316

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Accessories

MS116, MS132, MS165, MO132, MO165, MS132-T, MS132-K, MS132-KT



HKF1-11



HK1-11



SK1-11



CK1-11

Suitable for	Auxiliary contacts N.O.	Auxiliary contacts N.C.	Description	Type	Order code	Pkg qty	Weight (1 pce) kg
Auxiliary contacts – mountable on the front							
MS116, MS132, MS165, MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	–	HKF1-11	1SAM201901R1001	10	0.015
	1	0	–	HKF1-10	1SAM201901R1003	10	0.013
	0	1	–	HKF1-01	1SAM201901R1004	10	0.013
	2	0	–	HKF1-20	1SAM201901R1002	10	0.015
Auxiliary contacts – mountable on the right							
MS116, MS132, MS165, MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	max. 2 pieces	HK1-11	1SAM201902R1001	2	0.035
	2	0	max. 2 pieces	HK1-20	1SAM201902R1002	2	0.035
	0	2	max. 2 pieces	HK1-02	1SAM201902R1003	2	0.035
MS116, MS132, MO132, MS132-T, MS132-K, MS132-KT	2	0	max. 2 pieces with leading contacts	HK1-20L	1SAM201902R1004	2	0.035
Signaling contacts – mountable on the right							
MS116, MS132, MS165, MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	for tripped alarm	SK1-11	1SAM201903R1001	2	0.035
	2	0	for tripped alarm	SK1-20	1SAM201903R1002	2	0.035
	0	2	for tripped alarm	SK1-02	1SAM201903R1003	2	0.035
MS132, MS165, MS132-T, MS132-K, MS132-KT	1	1	for short-circuit alarm	CK1-11	1SAM301901R1001	2	0.035
	2	0	for short-circuit alarm	CK1-20	1SAM301901R1002	2	0.035
	0	2	for short-circuit alarm	CK1-02	1SAM301901R1003	2	0.035

Note : For BEA connecting links with AF, AS and B mini contactors please refer to Control Catalog Section 2.

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Accessories

MS116, MS132, MS165, MO132, MO165, MS132-T



AA1-24



UA1-24

Suitable for	Rated control supply voltage		Type	Order code	Pkg qty	Weight (1 pce)
	50 Hz V AC	60 Hz V AC				kg
Shunt trips – mountable on the left						
MS116, MS132, MS165, MO132, MO165, MS132-T	20 ... 24	20 ... 24	AA1-24	1SAM201910R1001	1	0.100
	110	110	AA1-110	1SAM201910R1002	1	0.100
	200 ... 240	200 ... 240	AA1-230	1SAM201910R1003	1	0.100
	350 ... 415	350 ... 415	AA1-400	1SAM201910R1004	1	0.100
Undervoltage releases – mountable on the left						
MS116, MS132, MS165, MO132, MO165, MS132-T	20	24	UA1-20	1SAM201904R1010	1	0.100
	24	–	UA1-24	1SAM201904R1001	1	0.100
	48	–	UA1-48	1SAM201904R1002	1	0.100
	60	–	UA1-60	1SAM201904R1003	1	0.100
	110	120	UA1-110	1SAM201904R1004	1	0.100
	–	208	UA1-208	1SAM201904R1008	1	0.100
	230	240	UA1-230	1SAM201904R1005	1	0.100
	400	–	UA1-400	1SAM201904R1006	1	0.100
	415	480	UA1-415	1SAM201904R1007	1	0.100
	–	575	UA1-575	1SAM201904R1009	1	0.100

Note : For BEA..-4K push-in spring connecting links with AF09..K ... AF38..K please refer to Control Catalog Section 2 - "Connection accessories for starting solutions with push-in spring terminals".

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Accessories
With push-in spring terminals



HKF1-11K



HK1-11K



SK1-11K

Suitable for	Auxiliary contacts N.O.	Auxiliary contacts N.C.	Description	Type	Order code	Pkg qty	Weight (1 pce) kg
Auxiliary contacts - mountable on the front							
MS116, MS132, MS165 MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	–	HKF1-11K	1SAM201901R1201	10	0.016
	2	0	–	HKF1-20K	1SAM201901R1202	10	0.016
Auxiliary contacts - mountable on the right							
MS116, MS132, MS165 MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	max. 2 pieces	HK1-11K	1SAM201902R1201	2	0.035
	2	0	max. 2 pieces	HK1-20K	1SAM201902R1202	2	0.035
	0	2	max. 2 pieces	HK1-02K	1SAM201902R1203	2	0.035
	2	0	with leading contacts	HK1-20LK	1SAM201902R1204	2	0.035
Signaling contacts - mountable on the right							
MS116, MS132, MS165 MO132, MO165, MS132-T, MS132-K, MS132-KT	1	1	for tripped alarm	SK1-11K	1SAM201903R1201	2	0.035
	2	0	for tripped alarm	SK1-20K	1SAM201903R1202	2	0.035
	0	2	for tripped alarm	SK1-02K	1SAM201903R1203	2	0.035

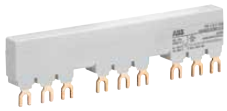
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Accessories

MS116, MS132, MO132, MS132-T



PS1-2-0-65



PS1-3-1-100



S1-M3-35



S1-M2-25

Suitable for	Rated operational current	Number of manual motor starters	Number of lateral auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
	A						kg
Three-phase busbars							
MS116, MS132, MO132	65	2	0	PS1-2-0-65	1SAM201906R1102	10	0.034
	65	3	0	PS1-3-0-65	1SAM201906R1103	10	0.055
	65	4	0	PS1-4-0-65	1SAM201906R1104	10	0.077
	65	5	0	PS1-5-0-65	1SAM201906R1105	10	0.098
	65	2	1	PS1-2-1-65	1SAM201906R1112	10	0.036
	65	3	1	PS1-3-1-65	1SAM201906R1113	10	0.060
	65	4	1	PS1-4-1-65	1SAM201906R1114	10	0.087
	65	5	1	PS1-5-1-65	1SAM201906R1115	10	0.108
	65	2	2	PS1-2-2-65	1SAM201906R1122	10	0.040
	65	3	2	PS1-3-2-65	1SAM201906R1123	10	0.067
	65	4	2	PS1-4-2-65	1SAM201906R1124	10	0.095
	65	5	2	PS1-5-2-65	1SAM201906R1125	10	0.122
MS116, MS132, MO132	100	3	0	PS1-3-0-100	1SAM201916R1103	10	0.084
	100	4	0	PS1-4-0-100	1SAM201916R1104	10	0.117
	100	5	0	PS1-5-0-100	1SAM201916R1105	10	0.154
	100	3	1	PS1-3-1-100	1SAM201916R1113	10	0.094
	100	4	1	PS1-4-1-100	1SAM201916R1114	10	0.134
	100	5	1	PS1-5-1-100	1SAM201916R1115	10	0.172
	100	3	2	PS1-3-2-100	1SAM201916R1123	10	0.105

Note: busbars are only suitable for screw versions

Suitable for	Rated operational current	Rated cross section	Mounting form	Type	Order code	Pkg qty	Weight (1 pce)
	A	mm²					kg
Three-phase feeder terminals							
MS116, MS132, MO132	65	25	Flat	S1-M1-25	1SAM201907R1101	10	0.038
	65	25	High	S1-M2-25	1SAM201907R1102	10	0.051
	65	25	UL/CSA Type E/F and IEC	S1-M3-25	1SAM201907R1103	10	0.042
	100	35	UL/CSA Type E/F and IEC	S1-M3-35	1SAM201913R1103	10	0.060

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Accessories

MS116, MS132, MO132, MS132-T



TS1-M3-S1



SA2



SA1



PB1-1-32



S1-PB1-25

Terminal spacers, Type E

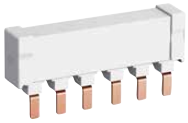
Suitable for	Mounting form	Type	Order code	Pkg qty	Weight (1 pce)
					kg
MS132 ≤ 10 A	UL/CSA Type E and IEC	TS1-M3-S1	1SAM301902R1001	2	0.012
MS132 ≥ 12 A	UL/CSA Type E and IEC	TS1-M3-S2	1SAM301902R1002	2	0.012
MS132-K	UL/CSA Type E and IEC	TS1-M3-K	1SAM301903R1001	2	0.012

Note: For product availability, please consult your ABB local sales organization

Suitable for	Description	Type	Order code	Pkg qty	Weight (1 pce)
					kg
MS116, MS132, MO132	Protection cover for busbars	BS1-3	1SAM201908R1001	50	0.003
MS116, MS132, MO132, MS132-T	Screw fixing kit	FS116	1SAM201909R1001	1	0.020
	Padlock + two keys	SA2	GJF1101903R0002	10	0.020
MS116	Lock handle	SA1	GJF1101903R0001	10	0.003
	Lock handle box SA1/SA2	SA3	GJF1101903R0003	10	0.050
Accessories for single-phase connection (IEC only)					
MS116, MS132, MO132, MS132-T	Phase connecting link	PB1-1-32	1SAM201914R1001	1	0.009
	Phase power infeed block	S1-PB1-25	1SAM201914R1002	1	0.013

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Accessories
MS165, MO165



PS2-2-0-125



PS2-3-0-125



S2-M3-50





KA165



BS2-3



SA2

Three-phase busbars

Suitable for	Rated operational current	Number of manual motor starters	Number of lateral auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
	A						kg
MS165, MO165	125	2	0	PS2-2-0-125	1SAM401920R1002	10	0.100
	125	3	0	PS2-3-0-125	1SAM401920R1003	10	0.162
	125	4	0	PS2-4-0-125	1SAM401920R1004	10	0.226
	125	2	2	PS2-2-2-125	1SAM401920R1022	10	0.117
	125	3	2	PS2-3-2-125	1SAM401920R1023	10	0.197
	125	4	2	PS2-4-2-125	1SAM401920R1024	10	0.277

Other busbar types on request.

Feeder block

Suitable for	Rated operational current	Rated cross section	Mounting form	Type	Order code	Pkg qty	Weight (1 pce)
	A	mm²					kg
MS165, MO165	125	50	UL508A and IEC	S2-M3-50	1SAM401923R1003	1	0.172

Suitable for	Description	Type	Order code	Pkg qty	Weight (1 pce)
					kg
MS165, MO165	Terminal shroud	KA165	1SAM401922R1001	10	0.025
	Protection cover for busbars	BS2-3	1SAM401921R1001	10	0.005
	Padlock + two keys	SA2	GJF1101903R0002	10	0.020

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Accessories
MS116, MS132, MO132



IB132-Y



IB132-G



DMS132-Y



DMS132-G

Suitable for	Description	Color	Type	Order code	Pkg qty	Weight (1 pce) kg
IP65 enclosures (NEMA Type 12)						
MS116, MS132, MO132	Padlockable max. 3 padlocks with bail diameter 4 ... 6.5 mm	Yellow/red	IB132-Y	1SAM201911R1011	1	0.370
		Grey/black	IB132-G	1SAM201911R1010	1	0.370
IP65 door mounting kits (NEMA Type 12)						
MS116, MS132, MO132	Padlockable max. 3 padlocks with bail diameter 4 ... 6.5 mm	Yellow/red	DMS132-Y	1SAM201912R1011	1	0.170
		Grey/black	DMS132-G	1SAM201912R1010	1	0.170

Indication I-O-T and ON-OFF-T.

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Accessories

MS116, MS132, MS165, MO132, MO165



MSHD-LB



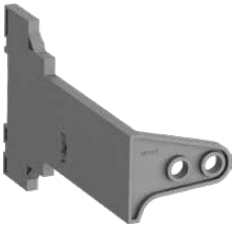
MSHD-LY



MSMN



MSH-AR



MSAH1

Suitable for	Description	Shaft length	Color	Type	Order code	Pkg qty	Weight (1 pce)
		mm				pce	kg
Shafts							
MS116, MS132, MO132, MS165, MO165	For MSHD handles. Shaft diameter 6 mm. Shaft extension for door coupling driver.	85	–	OXS6X85	1SCA101647R1001	1	0.020
		105	–	OXS6X105	1SCA108043R1001	1	0.020
		130	–	OXS6X130	1SCA101655R1001	1	0.030
		180	–	OXS6X180	1SCA101659R1001	1	0.040
IP64 handles (NEMA Type 1, 3R, 12)							
MS116, MS132, MO132, MS165, MO165	Padlockable max. 3 padlocks with bail diameter 5 ... 8 mm, door interlock in ON position defeatable, for use with 6 mm OXS6...types up to 180 mm or driver shafts MSOX.	–	Black	MSHD-LB[1]	1SAM201920R1001	1	0.065
		–	Yellow	MSHD-LY[1]	1SAM201920R1002	1	0.065
		–	Black	MSHD-LTB[2]	1SAM201920R1011	1	0.065
		–	Yellow	MSHD-LTY[2]	1SAM201920R1012	1	0.065
Driver							
MS116, MS132, MO132, MS165, MO165	Coupling driver for use with 6 mm OXS6... types up to 180 mm.	–	–	MSMN[3]	1SAM101923R0002	1	0.002
		–	–	MSMNO[4]	1SAM101923R0012	1	0.002
Shaft alignment ring							
MS116, MS132, MO132, MS165, MO165	The MSH-AR supports the long shafts for alignment to the handle inlet. It makes closing panel doors more easy. Use for OXS6X > 105 mm.	–	–	MSH-AR	1SAM201920R1000	1	0.010
Shaft supporter							
MS116, MS132, MO132	With the MSAH it is possible to support the shaft in the extension of handle (MSHD). It is mandatory for the usage of shafts >130 mm.	–	–	MSAH1	1SAM201909R1021	1	0.035

[1] Indication I-O and ON-OFF (recommended for MS116)
[2] Indication I-O and ON-OFF + Trip indication
[3] Coded - Positioning of ON indication dependent on mounting orientation of the MMS
[4] Uncoded - Positioning of ON indication independent of mounting orientation of the MMS.

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Enclosed direct-on-line starters
DRAS09 ... DRAS16



DRAS
+ T16 to be
ordered separately

4 to 7.5 kW, protected by thermal overload relays, AC or DC operated

IEC - AC-3 Rated operational power 220 V 230 V 240 V	400 V	500 V	max. current θ ≤ 40°C Ue=400 V	Rated control circuit voltage Uc Other control voltages see AS voltage code table		Control supply wiring	Type	Order code	Weight Pkg (1 pce)
kW	kW	kW	A	V 50/60 Hz	V DC				kg
AC operated with AS 3-pole contactors									
2.2	4	4	9	24	–	Separate supply	DRAS09-20S	1SBK104235R2000	0.650
				230	–	Phase-to-neutral	DRAS09-26N	1SBK104135R2600	0.650
				240	–	Phase-to-neutral	DRAS09-27N	1SBK104135R2700	0.650
				400	–	Phase-to-phase	DRAS09-28P	1SBK104035R2800	0.650
				415	–	Phase-to-phase	DRAS09-29P	1SBK104035R2900	0.650
3	5.5	5.5	12	24	–	Separate supply	DRAS12-20S	1SBK114235R2000	0.650
				230	–	Phase-to-neutral	DRAS12-26N	1SBK114135R2600	0.650
				240	–	Phase-to-neutral	DRAS12-27N	1SBK114135R2700	0.650
				400	–	Phase-to-phase	DRAS12-28P	1SBK114035R2800	0.650
				415	–	Phase-to-phase	DRAS12-29P	1SBK114035R2900	0.650
4	7.5	7.5	15.5	24	–	Separate supply	DRAS16-20S	1SBK124235R2000	0.650
				230	–	Phase-to-neutral	DRAS16-26N	1SBK124135R2600	0.650
				240	–	Phase-to-neutral	DRAS16-27N	1SBK124135R2700	0.650
				400	–	Phase-to-phase	DRAS16-28P	1SBK124035R2800	0.650
				415	–	Phase-to-phase	DRAS16-29P	1SBK124035R2900	0.650
DC operated with ASL 3-pole contactors									
2.2	4	4	9	–	24	Separate supply	DRASL09-81S	1SBK104335R8100	0.700
				–	48		DRASL09-83S	1SBK104335R8300	0.700
3	5.5	5.5	12	–	24	Separate supply	DRASL12-81S	1SBK114335R8100	0.700
				–	48		DRASL12-83S	1SBK114335R8300	0.700
4	7.5	7.5	15.5	–	24	Separate supply	DRASL16-81S	1SBK124335R8100	0.700
				–	48		DRASL16-83S	1SBK124335R8300	0.700

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Enclosed direct-on-line starters
DRAS09 … DRAS16



T16



Empty enclosure with push-button

4 to 7.5 kW, protected by thermal overload relays, AC or DC operated - continued

T16 thermal overload relays to be ordered separately

Setting range A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
0.10…0.13	0.5 A, Fuse type T	10	T16-0.13	1SAZ711201R1005	0.100
0.13…0.17	1.0 A, Fuse type T		T16-0.17	1SAZ711201R1008	0.100
0.17…0.23			T16-0.23	1SAZ711201R1009	0.100
0.23…0.31			T16-0.31	1SAZ711201R1013	0.100
0.31…0.41	2.0 A, Fuse type gG		T16-0.41	1SAZ711201R1014	0.100
0.41…0.55			T16-0.55	1SAZ711201R1017	0.100
0.55…0.74	4.0 A, Fuse type gG		T16-0.74	1SAZ711201R1021	0.100
0.74…1.00	6.0 A, Fuse type gG		T16-1.0	1SAZ711201R1023	0.100
1.00…1.30			T16-1.3	1SAZ711201R1025	0.100
1.30…1.70	10.0 A, Fuse type gG		T16-1.7	1SAZ711201R1028	0.100
1.70…2.30			T16-2.3	1SAZ711201R1031	0.100
2.30…3.10			T16-3.1	1SAZ711201R1033	0.100
3.10…4.20	20.0 A, Fuse type gG		T16-4.2	1SAZ711201R1035	0.100
4.20…5.70			T16-5.7	1SAZ711201R1038	0.100
5.70…7.60	35.0 A, Fuse type gG		T16-7.6	1SAZ711201R1040	0.100
7.60…10.0			T16-10	1SAZ711201R1043	0.104
10.0…13.0	40.0 A, Fuse type gG		T16-13	1SAZ711201R1045	0.104
13.0…16.0			T16-16	1SAZ711201R1047	0.104

Empty enclosure with push-button

–	–	–	FR16AS-12VARS	1SBN101035R1000	0.394

To be completed with AS or ASL contactor, T16 thermal overload relay and MCB-10B (1SFA611610R2001) contact block.

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Enclosed direct-on-line starters
DRAF09 … DRAF16



DRAF
+ TF42 to be
ordered separately

Up to 7.5 kW and 10 hp, protected by thermal overload relays, AC operated

IEC - AC-3					Control supply wiring	Rated control circuit voltage Uc min … Uc max[1]	Type	Order code	Weight Pkg (1 pce)
Rated operational power				max. current θ ≤ 40°C Ue= 400 V					
220 V 230 V 240 V	380 V 400 V	500 V	690 V						
kW	kW	kW	kW	A		V 50/60 Hz			kg
IEC starters type									
2.2	4	5.5	5.5	9	Separate supply	24…60	DRAF09-11S	1SBK134237R1100	0.820
					Phase-to-neutral	100…250	DRAF09-13N	1SBK134137R1300	0.820
					Phase-to-phase	250…500	DRAF09-14P	1SBK134037R1400	0.820
3	5.5	7.5	7.5	12	Separate supply	24…60	DRAF12-11S	1SBK154237R1100	0.820
					Phase-to-neutral	100…250	DRAF12-13N	1SBK154137R1300	0.820
					Phase-to-phase	250…500	DRAF12-14P	1SBK154037R1400	0.820
4	7.5	9	9	18	Separate supply	24…60	DRAF16-11S	1SBK174237R1100	0.820
					Phase-to-neutral	100…250	DRAF16-13N	1SBK174137R1300	0.820
					Phase-to-phase	250…500	DRAF16-14P	1SBK174037R1400	0.820

[1] Select DRAF..S with separate supply for 24…60 V DC control circuit voltage (change A2 - Us wire to blue color acc. to IEC 60947-4-1).

UL starter type with separate control supply wiring

UL / CSA						Rated control circuit voltage Uc min … Uc max	Type	Order code	Weight Pkg (1 pce)
Horse power ratings									
Single phase motor		Three phase motor							
120 V	240 V	200 V 208 V	220 V 240 V	440 V 480 V	550 V 600 V				
hp	hp	hp	hp	hp	hp	V 50/60 Hz			kg
UL starters type									
0.75	1.5	2	2	5	7.5	24…60	DRAF09-11U	1SBK134238R1100	0.820
						100…250	DRAF09-13U	1SBK134238R1300	0.820
						250…500	DRAF09-14U	1SBK134238R1400	0.820
1	2	3	3	7.5	10	24…60	DRAF12-11U	1SBK154238R1100	0.820
						100…250	DRAF12-13U	1SBK154238R1300	0.820
						250…500	DRAF12-14U	1SBK154238R1400	0.820
1.5	3	5	5	10	15	24…60	DRAF16-11U	1SBK174238R1100	0.820
						100…250	DRAF16-13U	1SBK174238R1300	0.820
						250…500	DRAF16-14U	1SBK174238R1400	0.820

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Enclosed direct-on-line starters
DRAF09 … DRAF16



TF42



Empty enclosure with push-button

Up to 7.5 kW and 10 hp, protected by thermal overload relays, AC operated - continued

TF42 thermal overload relays to be ordered separately

Setting range	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce)
A					kg
0.10 … 0.13	0.5 A, Fuse type T	10	TF42-0.13	1SAZ721201R1005	0.130
0.13 … 0.17	1.0 A, Fuse type T	10	TF42-0.17	1SAZ721201R1008	0.130
0.17 … 0.23	1.0 A, Fuse type T	10	TF42-0.23	1SAZ721201R1009	0.130
0.23 … 0.31	1.0 A, Fuse type T	10	TF42-0.31	1SAZ721201R1013	0.130
0.31 … 0.41	2.0 A, Fuse type gG	10	TF42-0.41	1SAZ721201R1014	0.130
0.41 … 0.55	2.0 A, Fuse type gG	10	TF42-0.55	1SAZ721201R1017	0.130
0.55 … 0.74	4.0 A, Fuse type gG	10	TF42-0.74	1SAZ721201R1021	0.130
0.74 … 1.00	6.0 A, Fuse type gG	10	TF42-1.0	1SAZ721201R1023	0.130
1.00 … 1.30	6.0 A, Fuse type gG	10	TF42-1.3	1SAZ721201R1025	0.130
1.30 … 1.70	10.0 A, Fuse type gG	10	TF42-1.7	1SAZ721201R1028	0.130
1.70 … 2.30	10.0 A, Fuse type gG	10	TF42-2.3	1SAZ721201R1031	0.130
2.30 … 3.10	10.0 A, Fuse type gG	10	TF42-3.1	1SAZ721201R1033	0.130
3.10 … 4.20	20.0 A, Fuse type gG	10	TF42-4.2	1SAZ721201R1035	0.130
4.20 … 5.70	20.0 A, Fuse type gG	10	TF42-5.7	1SAZ721201R1038	0.130
5.70 … 7.60	35.0 A, Fuse type gG	10	TF42-7.6	1SAZ721201R1040	0.130
7.60 … 10.0	35.0 A, Fuse type gG	10	TF42-10	1SAZ721201R1043	0.130
10.0 … 13.0	40.0 A, Fuse type gG	10	TF42-13	1SAZ721201R1045	0.130
13.0 … 16.0	40.0 A, Fuse type gG	10	TF42-16	1SAZ721201R1047	0.130
16.0 … 20.0	63.0 A, Fuse type gG	10	TF42-20	1SAZ721201R1049	0.145

Empty enclosure with push-button

mm cable inlet/outlet suitable for IEC starter types	–	FR16AF-12	1SBN101337R1000	0.53
Inch cable inlet/outlet suitable for UL starter types	–	FR16AF-12U	1SBN101338R1000	0.53

To be completed with AF contactor, TF42 thermal overload relay and CB5-10 (1SBN010013R1010) start contact block.

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Electronic compact starters
HF0.6, HF2.4, HF9



HF9-DOL-24VDC



HF9-DOLE-24VDC

Direct-on-line starter

Rated operational current AC-53a	Rated operational power AC-53a	Rated operational current AC-51	Setting range	Full load amps motor use	Type	Order code	Weight (1 pce)
A	kW	A	A	A			kg
Direct-on-line starter with overload protection							
0.6	0.18 (400V)	0.6	0.075 ... 0.6	0.6	HF0.6-DOL-24VDC	1SAT112000R1011	0.205
2.4	0.75 (400V)	2.4	0.18 ... 2.4	2.4	HF2.4-DOL-24VDC	1SAT122000R1011	0.218
6.5	3.00 (400V)	9.0	1.5 ... 9.0	6.5	HF9-DOL-24VDC	1SAT142000R1011	0.206
Direct-on-line starter with overload protection and emergency stop							
0.6	0.18 (400V)	0.6	0.075 ... 0.6	0.6	HF0.6-DOLE-24VDC	1SAT113000R1011	0.205
2.4	0.75 (400V)	2.4	0.18 ... 2.4	2.4	HF2.4-DOLE-24VDC	1SAT123000R1011	0.218
6.5	3.00 (400V)	9.0	1.5 ... 9.0	6.5	HF9-DOLE-24VDC	1SAT143000R1011	0.206

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Electronic compact starters
HF0.6, HF2.4, HF9



HF9-R-24VDC



HF9-ROL-24VDC



HF9-ROLE-24VDC

Reversing starter

Rated operational current AC-53a	Rated operational power AC-53a	Rated operational current AC-51	Setting range	Full load amps motor use	Type	Order code	Weight (1 pce)
A	kW	A	A	A			kg
Reversing starter with no monitoring and no overload functionality							
6.5	3.00 (400V)	9.0	–	6.5	HF9-R-24VDC	1SAT144000R1011	0.174
Reversing starter with overload protection							
0.6	0.18 (400V)	0.6	0.075 ... 0.6	0.6	HF0.6-ROL-24VDC	1SAT115000R1011	0.217
2.4	0.75 (400V)	2.4	0.18 ... 2.4	2.4	HF2.4-ROL-24VDC	1SAT125000R1011	0.219
6.5	3.00 (400V)	9.0	1.5 ... 9.0	6.5	HF9-ROL-24VDC	1SAT145000R1011	0.218
Reversing starter with overload protection and emergency stop							
0.6	0.18 (400V)	0.6	0.075 ... 0.6	0.6	HF0.6-ROLE-24VDC	1SAT116000R1011	0.218
2.4	0.75 (400V)	2.4	0.18 ... 2.4	2.4	HF2.4-ROLE-24VDC	1SAT126000R1011	0.270
6.5	3.00 (400V)	9.0	1.5 ... 9.0	6.5	HF9-ROLE-24VDC	1SAT146000R1011	0.289

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Notes

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CONTROL SECTION 6

Miniature circuit breakers, residual current devices and fuse holders



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Section Updated 06/2023

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UL 489 series

Overview

SU200M, SUP200M, SU200MR, S200UDC, S800U, S800U-UCZ



SU200M

Description

ABB's UL 489 miniature circuit breakers offer a compact solution for all branch circuit protection requirements. They are current-limiting according to UL 489 and DIN rail mounted.

ABB's UL 489 MCBs come in up to three trip curves to provide maximum circuit protection.

For the worldwide market, the breakers carry UL, CSA, IEC, CE and many other agency approvals and certifications.

Features

- UL current limiting
- Fast breaking time (2.3–2.5 ms)
- Bus connection system
- Wide range of accessories
- Available with variable depth handle mechanism
- CE certified and marked
- DIN rail mounting
- Finger-safe terminals
- Multi-function terminals
- Suitable for reverse feed (except for S200UDC)
- UL 489 listed branch circuit protective device, UL File #E212323 and E312425



SU200MR

Type	SU200M	SUP200M	SU200MR	S200UDC
Ampacities	0.2–63	1–40 (K: 35)	0.2–63	1–63
Voltage	up to 480Y/277 V AC 48/96 V DC	480Y/277 V AC	up to 480Y/277 V AC	up to 125/250 V DC
Trip curves	Z, C, K	Z, C, K	K	Z, K
Interrupt rating	10 kA	14 kA	10 kA	14 kA
Auxilliary contacts	yes	yes	yes	yes
Bell alarm	yes	yes	yes	yes
Shunt trip	yes	yes	yes	yes
Rotary handle mechanism	yes	yes	yes	yes
LOTO adapter	yes	yes	yes	yes
Busbars (cuttable)	yes	yes	yes	yes
Busbars (fixed length)	yes	yes	–	yes



S200UDC

Type	S800U	S800U-UCZ
Amperage	10–100 A	10–80 A
Voltage	240 V AC	600 V DC
Poles	1, 2, 3, 4	4 in series
Trip curves	Z (B), K	Z (K)
Short circuit interrupt rating	30/50 kA (1-/multipole)	10 kA
Auxiliary contacts	yes	–
Bell alarm	yes	–
Shunt trip	yes	–
Undervoltage release	yes	–
Rotary handle mechanism	yes	–
Motor operator	yes	–
Terminals	compression/ring tongue	compression



S800U

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SU200M-C

Branch circuit protection — UL 489, CSA 22.2 No. 5



SU201M-C5



SU202M-C5



SU203M-C5



SU204M-C5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	SU201M-C0.5	3	0.5	SU203M-C0.5
	1	SU201M-C1		1	SU203M-C1
	1.6	SU201M-C1.6		1.6	SU203M-C1.6
	2	SU201M-C2		2	SU203M-C2
	3	SU201M-C3		3	SU203M-C3
	4	SU201M-C4		4	SU203M-C4
	5	SU201M-C5		5	SU203M-C5
	6	SU201M-C6		6	SU203M-C6
	7	SU201M-C7		7	SU203M-C7
	8	SU201M-C8		8	SU203M-C8
	10	SU201M-C10		10	SU203M-C10
	13	SU201M-C13		13	SU203M-C13
	15	SU201M-C15		15	SU203M-C15
	16	SU201M-C16		16	SU203M-C16
	20	SU201M-C20		20	SU203M-C20
	25	SU201M-C25		25	SU203M-C25
	30	SU201M-C30		30	SU203M-C30
	32	SU201M-C32		32	SU203M-C32
	35	SU201M-C35		35	SU203M-C35
	40	SU201M-C40		40	SU203M-C40
	50	SU201M-C50		50	SU203M-C50
	60	SU201M-C60		60	SU203M-C60
	63	SU201M-C63		63	SU203M-C63
2	0.5	SU202M-C0.5	4	0.5	SU204M-C0.5
	1	SU202M-C1		1	SU204M-C1
	1.6	SU202M-C1.6		1.6	SU204M-C1.6
	2	SU202M-C2		2	SU204M-C2
	3	SU202M-C3		3	SU204M-C3
	4	SU202M-C4		4	SU204M-C4
	5	SU202M-C5		5	SU204M-C5
	6	SU202M-C6		6	SU204M-C6
	7	SU202M-C7		7	SU204M-C7
	8	SU202M-C8		8	SU204M-C8
	10	SU202M-C10		10	SU204M-C10
	13	SU202M-C13		13	SU204M-C13
	15	SU202M-C15		15	SU204M-C15
	16	SU202M-C16		16	SU204M-C16
	20	SU202M-C20		20	SU204M-C20
	25	SU202M-C25		25	SU204M-C25
	30	SU202M-C30		30	SU204M-C30
	32	SU202M-C32		32	SU204M-C32
	35	SU202M-C35		35	SU204M-C35
	40	SU202M-C40		40	SU204M-C40
	50	SU202M-C50		50	SU204M-C50
	60	SU202M-C60		60	SU204M-C60
	63	SU202M-C63		63	SU204M-C63

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SU200M-K

Branch circuit protection — UL 489, CSA 22.2 No. 5



SU201M-K5



SU202M-K5



SU203M-K5



SU204M-K5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.2	SU201M-K0.2	3	0.2	SU203M-K0.2
	0.3	SU201M-K0.3		0.3	SU203M-K0.3
	0.5	SU201M-K0.5		0.5	SU203M-K0.5
	0.75	SU201M-K0.75		0.75	SU203M-K0.75
	1	SU201M-K1		1	SU203M-K1
	1.6	SU201M-K1.6		1.6	SU203M-K1.6
	2	SU201M-K2		2	SU203M-K2
	3	SU201M-K3		3	SU203M-K3
	4	SU201M-K4		4	SU203M-K4
	5	SU201M-K5		5	SU203M-K5
	6	SU201M-K6		6	SU203M-K6
	7	SU201M-K7		7	SU203M-K7
	8	SU201M-K8		8	SU203M-K8
	10	SU201M-K10		10	SU203M-K10
	13	SU201M-K13		13	SU203M-K13
	15	SU201M-K15		15	SU203M-K15
	16	SU201M-K16		16	SU203M-K16
	20	SU201M-K20		20	SU203M-K20
	25	SU201M-K25		25	SU203M-K25
	30	SU201M-K30		30	SU203M-K30
	32	SU201M-K32		32	SU203M-K32
	35	SU201M-K35		35	SU203M-K35
	40	SU201M-K40		40	SU203M-K40
	50	SU201M-K50		50	SU203M-K50
	60	SU201M-K60		60	SU203M-K60
	63	SU201M-K63		63	SU203M-K63
2	0.2	SU202M-K0.2	4	0.2	SU204M-K0.2
	0.3	SU202M-K0.3		0.3	SU204M-K0.3
	0.5	SU202M-K0.5		0.5	SU204M-K0.5
	0.75	SU202M-K0.75		0.75	SU204M-K0.75
	1	SU202M-K1		1	SU204M-K1
	1.6	SU202M-K1.6		1.6	SU204M-K1.6
	2	SU202M-K2		2	SU204M-K2
	3	SU202M-K3		3	SU204M-K3
	4	SU202M-K4		4	SU204M-K4
	5	SU202M-K5		5	SU204M-K5
	6	SU202M-K6		6	SU204M-K6
	7	SU202M-K7		7	SU204M-K7
	8	SU202M-K8		8	SU204M-K8
	10	SU202M-K10		10	SU204M-K10
	13	SU202M-K13		13	SU204M-K13
	15	SU202M-K15		15	SU204M-K15
	16	SU202M-K16		16	SU204M-K16
	20	SU202M-K20		20	SU204M-K20
	25	SU202M-K25		25	SU204M-K25
	30	SU202M-K30		30	SU204M-K30
	32	SU202M-K32		32	SU204M-K32
	35	SU202M-K35		35	SU204M-K35
	40	SU202M-K40		40	SU204M-K40
	50	SU202M-K50		50	SU204M-K50
	60	SU202M-K60		60	SU204M-K60
	63	SU202M-K63		63	SU204M-K63

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SU200M-Z

Branch circuit protection — UL 489, CSA 22.2 No. 5



SU201M-Z5



SU202M-Z5



SU203M-Z5



SU204M-Z5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	SU201M-Z0.5	3	0.5	SU203M-Z0.5
	1	SU201M-Z1		1	SU203M-Z1
	1.6	SU201M-Z1.6		1.6	SU203M-Z1.6
	2	SU201M-Z2		2	SU203M-Z2
	3	SU201M-Z3		3	SU203M-Z3
	4	SU201M-Z4		4	SU203M-Z4
	5	SU201M-Z5		5	SU203M-Z5
	6	SU201M-Z6		6	SU203M-Z6
	7	SU201M-Z7		7	SU203M-Z7
	8	SU201M-Z8		8	SU203M-Z8
	10	SU201M-Z10		10	SU203M-Z10
	13	SU201M-Z13		13	SU203M-Z13
	15	SU201M-Z15		15	SU203M-Z15
	16	SU201M-Z16		16	SU203M-Z16
	20	SU201M-Z20		20	SU203M-Z20
	25	SU201M-Z25		25	SU203M-Z25
	30	SU201M-Z30		30	SU203M-Z30
	32	SU201M-Z32		32	SU203M-Z32
	35	SU201M-Z35		35	SU203M-Z35
	40	SU201M-Z40		40	SU203M-Z40
	50	SU201M-Z50		50	SU203M-Z50
	60	SU201M-Z60		60	SU203M-Z60
	63	SU201M-Z63		63	SU203M-Z63
2	0.5	SU202M-Z0.5	4	0.5	SU204M-Z0.5
	1	SU202M-Z1		1	SU204M-Z1
	1.6	SU202M-Z1.6		1.6	SU204M-Z1.6
	2	SU202M-Z2		2	SU204M-Z2
	3	SU202M-Z3		3	SU204M-Z3
	4	SU202M-Z4		4	SU204M-Z4
	5	SU202M-Z5		5	SU204M-Z5
	6	SU202M-Z6		6	SU204M-Z6
	7	SU202M-Z7		7	SU204M-Z7
	8	SU202M-Z8		8	SU204M-Z8
	10	SU202M-Z10		10	SU204M-Z10
	13	SU202M-Z13		13	SU204M-Z13
	15	SU202M-Z15		15	SU204M-Z15
	16	SU202M-Z16		16	SU204M-Z16
	20	SU202M-Z20		20	SU204M-Z20
	25	SU202M-Z25		25	SU204M-Z25
	30	SU202M-Z30		30	SU204M-Z30
	32	SU202M-Z32		32	SU204M-Z32
	35	SU202M-Z35		35	SU204M-Z35
	40	SU202M-Z40		40	SU204M-Z40
	50	SU202M-Z50		50	SU204M-Z50
	60	SU202M-Z60		60	SU204M-Z60
	63	SU202M-Z63		63	SU204M-Z63

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SUP200M-C

Branch circuit protection — UL 489, CSA 22.2 No. 5



SUP201M-C5



SUP202M-C5



SUP203M-C5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	1	SUP201M-C1	3	1	SUP203M-C1
	1.6	SUP201M-C1.6		1.6	SUP203M-C1.6
	2	SUP201M-C2		2	SUP203M-C2
	3	SUP201M-C3		3	SUP203M-C3
	4	SUP201M-C4		4	SUP203M-C4
	5	SUP201M-C5		5	SUP203M-C5
	6	SUP201M-C6		6	SUP203M-C6
	7	SUP201M-C7		7	SUP203M-C7
	8	SUP201M-C8		8	SUP203M-C8
	10	SUP201M-C10		10	SUP203M-C10
	13	SUP201M-C13		13	SUP203M-C13
	15	SUP201M-C15		15	SUP203M-C15
	16	SUP201M-C16		16	SUP203M-C16
	20	SUP201M-C20		20	SUP203M-C20
	25	SUP201M-C25		25	SUP203M-C25
	30	SUP201M-C30		30	SUP203M-C30
	32	SUP201M-C32		32	SUP203M-C32
	35	SUP201M-C35		35	SUP203M-C35
	40	SUP201M-C40		40	SUP203M-C40
2	1	SUP202M-C1			
	1.6	SUP202M-C1.6			
	2	SUP202M-C2			
	3	SUP202M-C3			
	4	SUP202M-C4			
	5	SUP202M-C5			
	6	SUP202M-C6			
	7	SUP202M-C7			
	8	SUP202M-C8			
	10	SUP202M-C10			
	13	SUP202M-C13			
	15	SUP202M-C15			
	16	SUP202M-C16			
	20	SUP202M-C20			
	25	SUP202M-C25			
	30	SUP202M-C30			
	32	SUP202M-C32			
	35	SUP202M-C35			
	40	SUP202M-C40			

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SUP200M-K

Branch circuit protection — UL 489, CSA 22.2 No. 5



SUP201M-K5



SUP202M-K5



SUP203M-K5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	1	SUP201M-K1	3	1	SUP203M-K1
	1.6	SUP201M-K1.6		1.6	SUP203M-K1.6
	2	SUP201M-K2		2	SUP203M-K2
	3	SUP201M-K3		3	SUP203M-K3
	4	SUP201M-K4		4	SUP203M-K4
	5	SUP201M-K5		5	SUP203M-K5
	6	SUP201M-K6		6	SUP203M-K6
	7	SUP201M-K7		7	SUP203M-K7
	8	SUP201M-K8		8	SUP203M-K8
	10	SUP201M-K10		10	SUP203M-K10
	13	SUP201M-K13		13	SUP203M-K13
	15	SUP201M-K15		15	SUP203M-K15
	16	SUP201M-K16		16	SUP203M-K16
	20	SUP201M-K20		20	SUP203M-K20
	25	SUP201M-K25		25	SUP203M-K25
	30	SUP201M-K30		30	SUP203M-K30
	32	SUP201M-K32		32	SUP203M-K32
	35	SUP201M-K35		35	SUP203M-K35
2	1	SUP202M-K1			
	1.6	SUP202M-K1.6			
	2	SUP202M-K2			
	3	SUP202M-K3			
	4	SUP202M-K4			
	5	SUP202M-K5			
	6	SUP202M-K6			
	7	SUP202M-K7			
	8	SUP202M-K8			
	10	SUP202M-K10			
	13	SUP202M-K13			
	15	SUP202M-K15			
	16	SUP202M-K16			
	20	SUP202M-K20			
	25	SUP202M-K25			
	30	SUP202M-K30			
	32	SUP202M-K32			
	35	SUP202M-K35			

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SUP200M-Z

Branch circuit protection — UL 489, CSA 22.2 No. 5



SUP201M-Z5



SUP202M-Z5



SUP203M-Z5

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	1	SUP201M-Z1	3	1	SUP203M-Z1
	1.6	SUP201M-Z1.6		1.6	SUP203M-Z1.6
	2	SUP201M-Z2		2	SUP203M-Z2
	3	SUP201M-Z3		3	SUP203M-Z3
	4	SUP201M-Z4		4	SUP203M-Z4
	5	SUP201M-Z5		5	SUP203M-Z5
	6	SUP201M-Z6		6	SUP203M-Z6
	7	SUP201M-Z7		7	SUP203M-Z7
	8	SUP201M-Z8		8	SUP203M-Z8
	10	SUP201M-Z10		10	SUP203M-Z10
	15	SUP201M-Z15		15	SUP203M-Z15
	16	SUP201M-Z16		16	SUP203M-Z16
	20	SUP201M-Z20		20	SUP203M-Z20
	25	SUP201M-Z25		25	SUP203M-Z25
	30	SUP201M-Z30		30	SUP203M-Z30
	32	SUP201M-Z32		32	SUP203M-Z32
	35	SUP201M-Z35		35	SUP203M-Z35
	40	SUP201M-Z40		40	SUP203M-Z40
2	1	SUP202M-Z1			
	1.6	SUP202M-Z1.6			
	2	SUP202M-Z2			
	3	SUP202M-Z3			
	4	SUP202M-Z4			
	5	SUP202M-Z5			
	6	SUP202M-Z6			
	7	SUP202M-Z7			
	8	SUP202M-Z8			
	10	SUP202M-Z10			
	15	SUP202M-Z15			
	16	SUP202M-Z16			
	20	SUP202M-Z20			
	25	SUP202M-Z25			
	30	SUP202M-Z30			
	32	SUP202M-Z32			
	35	SUP202M-Z35			
	40	SUP202M-Z40			

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SU200MR-K with ring tongue terminals

Branch circuit protection — UL 489, CSA 22.2 No. 5



SU201MR-K63



SU202MR-K63



SU203MR-K63



SU204MR-K63

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.2	SU201MR-K0.2	3	0.2	SU203MR-K0.2
	0.3	SU201MR-K0.3		0.3	SU203MR-K0.3
	0.5	SU201MR-K0.5		0.5	SU203MR-K0.5
	0.75	SU201MR-K0.75		0.75	SU203MR-K0.75
	1	SU201MR-K1		1	SU203MR-K1
	1.6	SU201MR-K1.6		1.6	SU203MR-K1.6
	2	SU201MR-K2		2	SU203MR-K2
	3	SU201MR-K3		3	SU203MR-K3
	4	SU201MR-K4		4	SU203MR-K4
	5	SU201MR-K5		5	SU203MR-K5
	6	SU201MR-K6		6	SU203MR-K6
	8	SU201MR-K8		8	SU203MR-K8
	10	SU201MR-K10		10	SU203MR-K10
	13	SU201MR-K13		13	SU203MR-K13
	15	SU201MR-K15		15	SU203MR-K15
	16	SU201MR-K16		16	SU203MR-K16
	20	SU201MR-K20		20	SU203MR-K20
	25	SU201MR-K25		25	SU203MR-K25
	30	SU201MR-K30		30	SU203MR-K30
	32	SU201MR-K32		32	SU203MR-K32
	35	SU201MR-K35		35	SU203MR-K35
	40	SU201MR-K40		40	SU203MR-K40
	50	SU201MR-K50		50	SU203MR-K50
	60	SU201MR-K60		60	SU203MR-K60
	63	SU201MR-K63		63	SU203MR-K63
2	0.2	SU202MR-K0.2	4	0.2	SU204MR-K0.2
	0.3	SU202MR-K0.3		0.3	SU204MR-K0.3
	0.5	SU202MR-K0.5		0.5	SU204MR-K0.5
	0.75	SU202MR-K0.75		0.75	SU204MR-K0.75
	1	SU202MR-K1		1	SU204MR-K1
	1.6	SU202MR-K1.6		1.6	SU204MR-K1.6
	2	SU202MR-K2		2	SU204MR-K2
	3	SU202MR-K3		3	SU204MR-K3
	4	SU202MR-K4		4	SU204MR-K4
	5	SU202MR-K5		5	SU204MR-K5
	6	SU202MR-K6		6	SU204MR-K6
	8	SU202MR-K8		8	SU204MR-K8
	10	SU202MR-K10		10	SU204MR-K10
	13	SU202MR-K13		13	SU204MR-K13
	15	SU202MR-K15		15	SU204MR-K15
	16	SU202MR-K16		16	SU204MR-K16
	20	SU202MR-K20		20	SU204MR-K20
	25	SU202MR-K25		25	SU204MR-K25
	30	SU202MR-K30		30	SU204MR-K30
	32	SU202MR-K32		32	SU204MR-K32
	35	SU202MR-K35		35	SU204MR-K35
	40	SU202MR-K40		40	SU204MR-K40
	50	SU202MR-K50		50	SU204MR-K50
	60	SU202MR-K60		60	SU204MR-K60
	63	SU202MR-K63		63	SU204MR-K63

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S200UDC-K

Branch circuit protection — UL 489, CSA 22.2 No. 5



S201UDC-K16



S202UDC-K16

Number of poles	Rated current I_n A	Cat. no.
1	1	S201UDC-K1
	1.6	S201UDC-K1.6
	2	S201UDC-K2
	3	S201UDC-K3
	4	S201UDC-K4
	5	S201UDC-K5
	6	S201UDC-K6
	8	S201UDC-K8
	10	S201UDC-K10
	13	S201UDC-K13
	15	S201UDC-K15
	16	S201UDC-K16
	20	S201UDC-K20
	25	S201UDC-K25
	30	S201UDC-K30
	32	S201UDC-K32
	40	S201UDC-K40
	50	S201UDC-K50
	60	S201UDC-K60
	63	S201UDC-K63
2	1	S202UDC-K1
	1.6	S202UDC-K1.6
	2	S202UDC-K2
	3	S202UDC-K3
	4	S202UDC-K4
	5	S202UDC-K5
	6	S202UDC-K6
	8	S202UDC-K8
	10	S202UDC-K10
	13	S202UDC-K13
	15	S202UDC-K15
	16	S202UDC-K16
	20	S202UDC-K20
	25	S202UDC-K25
	30	S202UDC-K30
	32	S202UDC-K32
	40	S202UDC-K40
	50	S202UDC-K50
	60	S202UDC-K60
	63	S202UDC-K63

Note: Standard UL 489 (only DC; please note polarity of device).

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S200UDC-Z

Branch circuit protection — UL 489, CSA 22.2 No. 5



S201UDC-Z16



S202UDC-Z16

Number of poles	Rated current I_n A	Cat. no.
1	1	S201UDC-Z1
	1.6	S201UDC-Z1.6
	2	S201UDC-Z2
	3	S201UDC-Z3
	4	S201UDC-Z4
	5	S201UDC-Z5
	6	S201UDC-Z6
	8	S201UDC-Z8
	10	S201UDC-Z10
	13	S201UDC-Z13
	15	S201UDC-Z15
	16	S201UDC-Z16
	20	S201UDC-Z20
	25	S201UDC-Z25
	30	S201UDC-Z30
	32	S201UDC-Z32
	40	S201UDC-Z40
	50	S201UDC-Z50
	60	S201UDC-Z60
	63	S201UDC-Z63
2	1	S202UDC-Z1
	1.6	S202UDC-Z1.6
	2	S202UDC-Z2
	3	S202UDC-Z3
	4	S202UDC-Z4
	5	S202UDC-Z5
	6	S202UDC-Z6
	8	S202UDC-Z8
	10	S202UDC-Z10
	13	S202UDC-Z13
	15	S202UDC-Z15
	16	S202UDC-Z16
	20	S202UDC-Z20
	25	S202UDC-Z25
	30	S202UDC-Z30
	32	S202UDC-Z32
	40	S202UDC-Z40
	50	S202UDC-Z50
	60	S202UDC-Z60
	63	S202UDC-Z63

Note: Standard UL 489 (only DC; please note polarity of device).

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S800U-K, 240 V AC

Branch circuit protection — UL 489



S801U-K100



S802U-K100



S803U-K100



S804U-K100

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	10	S801U-K10	3	10	S803U-K10
	15	S801U-K15		15	S803U-K15
	20	S801U-K20		20	S803U-K20
	25	S801U-K25		25	S803U-K25
	30	S801U-K30		30	S803U-K30
	40	S801U-K40		40	S803U-K40
	50	S801U-K50		50	S803U-K50
	60	S801U-K60		60	S803U-K60
	70	S801U-K70		70	S803U-K70
	80	S801U-K80		80	S803U-K80
	90	S801U-K90		90	S803U-K90
	100	S801U-K100		100	S803U-K100
2	10	S802U-K10	4	10	S804U-K10
	15	S802U-K15		15	S804U-K15
	20	S802U-K20		20	S804U-K20
	25	S802U-K25		25	S804U-K25
	30	S802U-K30		30	S804U-K30
	40	S802U-K40		40	S804U-K40
	50	S802U-K50		50	S804U-K50
	60	S802U-K60		60	S804U-K60
	70	S802U-K70		70	S804U-K70
	80	S802U-K80		80	S804U-K80
	90	S802U-K90		90	S804U-K90
	100	S802U-K100		100	S804U-K100

Available with ring tongue terminals upon request.

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S800U-Z, 240 V AC

Branch circuit protection — UL 489



S801U-Z100



S802U-Z100



S803U-Z100



S804U-Z100

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	10	S801U-Z10	3	10	S803U-Z10
	15	S801U-Z15		15	S803U-Z15
	20	S801U-Z20		20	S803U-Z20
	25	S801U-Z25		25	S803U-Z25
	30	S801U-Z30		30	S803U-Z30
	40	S801U-Z40		40	S803U-Z40
	50	S801U-Z50		50	S803U-Z50
	60	S801U-Z60		60	S803U-Z60
	70	S801U-Z70		70	S803U-Z70
	80	S801U-Z80		80	S803U-Z80
	90	S801U-Z90		90	S803U-Z90
	100	S801U-Z100		100	S803U-Z100
2	10	S802U-Z10	4	10	S804U-Z10
	15	S802U-Z15		15	S804U-Z15
	20	S802U-Z20		20	S804U-Z20
	25	S802U-Z25		25	S804U-Z25
	30	S802U-Z30		30	S804U-Z30
	40	S802U-Z40		40	S804U-Z40
	50	S802U-Z50		50	S804U-Z50
	60	S802U-Z60		60	S804U-Z60
	70	S802U-Z70		70	S804U-Z70
	80	S802U-Z80		80	S804U-Z80
	90	S802U-Z90		90	S804U-Z90
	100	S802U-Z100		100	S804U-Z100

Available with ring tongue terminals upon request.

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S804U-UCZ



S804U-UCZ80

Ordering information

Rated current (A)	Cat. no.
10	S804U-UCZ10
15	S804U-UCZ15
20	S804U-UCZ20
25	S804U-UCZ25
30	S804U-UCZ30
40	S804U-UCZ40
50	S804U-UCZ50
60	S804U-UCZ60
70	S804U-UCZ70
80	S804U-UCZ80

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Accessories

SU200M, SUP200M, SU200MR and S200UDC — UL 489, CSA 22.2 No. 5



S2C-H6RU

Auxiliary contacts

Description	Cat. no.
For field mounting: right side	S2C-H6RU



S2C-S6RU

Bell alarm

Description	Cat. no.
For field mounting: right side	S2C-S6RU

Shunt trip

Description	Cat. no.
For field mounting: right side 12…60 V AC/DC	S2C-A1U
For field mounting: right side 110…415 V AC 110…250 V DC	S2C-A2U



S2C-A…U

Rotary operating mechanism

Description	Cat. no.
Rotary handle mechanism can be used with any 5 or 6 mm shaft and any kind of handle (for example, selector handles, pistol handles)	S2C-DH



S2C-DH

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Accessories

SU200M, SUP200M, SU200MR and S200UDC — UL 489, CSA 22.2 No. 5



PS...BP

Busbars for use with SU200M, S200UDC, and SUP200M, cannot be cut

Amp rating[1]	Number of poles	Phases	Busbar length (mm)	Cat. no.
80/115	6	1	103.2	PS 1/6/16BP
	12	1	208.8	PS 1/12/16BP
	18	1	314.4	PS 1/18/16BP
80/115	6	2	103.2	PS 2/6/16BP
	12	2	208.8	PS 2/12/16BP
	18	2	314.4	PS 2/18/16BP
80/115	6	3	103.2	PS 3/6/16BP
	12	3	208.8	PS 3/12/16BP
	18	3	314.4	PS 3/18/16BP

[1] Depending on enclosure size



BSK-BP

Busbar tooth covers for BS...BP (UL 489)

Description	Cat. no.
Covers three unused poles of busbar	BSK-BP



AST35/15BP

Feeder terminals for PS...BP (UL 489)

Description	Cat. no.
Terminal, insulated with pin contact	AST35/15BP
Feeder terminal, single-pole terminal, can be mounted side by side, feed on the pin of the busbar	SZ-ESK BP



SZ-ESK BP

Busbars PS...BP-C for use with SU200M, SUP200M and S200UDC, can be cut to length

Number of phases	Phase sequence	Cat. no.
1	L1-L1-L1...	PS1/57/25BP-C
	L1-Aux (free)-L1-Aux (free)...[2]	PS1/37/25HBP-C
2	L1-L2-L1-L2...	PS2/56/25BP-C
	L1-L2-Aux (free)-L1-L2-Aux (free)...[2]	PS2/46/25HBP-C
3	L1-L2-L3-L1-L2-L3...	PS3/57/25BP-C
	L1-L2-L3-Aux (free)-L1-L2-L3-Aux (free)...[2]	PS3/48/25HBP-C
	L1-Aux (free)-L2-Aux (free)-L3-Aux (free)...[2]	PS3/39/25HBP-C

[2] For devices with auxiliary contact (half module) after each phase sequence



PS...BP-C

Accessories

Description	Cat. no.
Tooth covers, for 3 pins	BSK BP-C
End caps	PS-END 3 BP-C
Feeder terminal	AST 35/58 BP-C

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Accessories

SU200M, SUP200M, SU200MR and S200UDC — UL 489, CSA 22.2 No. 5



PS...BP-CR

Busbars for SU200MR, can be cut to length

Busbars PS...BP-CR for use with end caps PS-END 3 BP-C				
Number of phases	**Phase sequence**	**Number of pins pc.**	**Cross section mm²**	**Cat. no.**
1	L1-L1-L1...	57	25	PS1/57/25BP-CR
	L1-Aux (free)-L1-Aux (free)...[1]	37	25	PS1/37/25HBP-CR
2	L1-L2-L1-L2...	56	25	PS2/56/25BP-CR
	L1-L2-Aux (free)-L1-L2-Aux (free)...[1]	46	25	PS2/46/25HBP-CR
3	L1-L2-L3-L1-L2-L3...	57	25	PS3/57/25BP-CR
	L1-L2-L3-Aux (free)-L1-L2-L3-Aux (free)...[1]	48	25	PS3/48/25HBP-CR
	L1-Aux (free)-L2-Aux (free)-L3-Aux (free)...[1]	39	25	PS3/39/25HBP-CR

[1] For devices with auxiliary contact (half module) after each phase sequence



S2C-LOTO-S

Accessories

Description	Cat. no.
Tooth covers, for 3 pins	BSK BP-CR
End caps	PS-END 3 BP-C



SZ-FST 2

Lockout/tag out device

Description	Cat. no.
For single-pole MCBs	S2C-LOTO-S
For multi-pole MCBs	S2C-LOTO-M



FP1

Filling piece

Description	Weight 1 piece kg	Pack unit pc.	Cat. no.
Filling piece	0.01	25	SZ-FST 2



SFP

False poles

Description	Weight 1 piece kg	Pack unit pc.	Cat. no.
False pole — 1 module	0.01	100	FP1
Support for false pole	0.012	10	SFP



ME...

Flanges

Description	Weight 1 piece kg	Pack unit pc.	Cat. no.
Flange for rear board mounting 1 module — IP40	0.040	1	ME 1
Flange for rear board mounting 2 modules — IP40	0.045	1	ME 2
Flange for rear board mounting 3 modules — IP40	0.055	1	ME 3
Flange for rear board mounting 4 modules — IP40	0.060	1	ME 4
Flange for rear board mounting 6 modules — IP40	0.070	1	ME 6
Flange for rear board mounting 8 modules — IP40	0.080	1	ME 8

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S800W-RSU remote switching unit
UL 489



S800W-RSU
(breaker is not
included)

Remote switching unit

Description	Cat. no.
Remote switching unit	S800W-RSU

S800-RSU cable including plug

Description	Cat. no.
3 meter cable 0.5 mm^2 (20 AWG) including 10-pole Micro-Fit 3.0™ plug	S800-RSU-CP



S800-RSU-CP

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Accessories
S800U


S800-SOR

Shunt trip

Description (for field mounting, left side)	Cat. no.
Shunt operation release 24 V AC/DC	S800-SOR24
Shunt operation release 48–130 V AC/DC	S800-SOR130
Shunt operation release 110–250 V AC/DC	S800-SOR250


S800-UVR

Under-voltage release

Description	Cat. no.
Under-voltage release 24–36 V AC/DC	S800-UVR36
Under-voltage release 48–60 V AC/DC	S800-UVR60
Under-voltage release 110–130 V AC/DC	S800-UVR130
Under-voltage release 220–250 V AC/DC	S800-UVR250


S800-AUX

Auxiliary contacts

Description	Cat. no.
Auxiliary contact	S800-AUX

Bell alarm

Description	Cat. no.
Bell alarm	S800-AUX/ALT

Ring tongue adapter

Description	Cat. no.
Ring tongue adapter	S800-RT2125


S800-AUX/ALT


S800-RT2125

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Accessories
S800U



S800-RD

Rotary operating mechanism
Allows “through-the-door” operation.

Description	Cat. no.
Handle mechanism	S800-RD
Gray rotary handle	S800-RHE-H

UL locking device

Description	Cat. no.
Red rotary handle	S800-RHE-EM
Shaft extension	S800-RHE-S
Padlock/LOTO adapter (LOTO hasp not included)	S800U-PLL



S800-RHE-H



S800-RHE-EM



S800-RHE-S



S800U-PLL

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UL 1077 series

Overview

ST200M, S200MUC, S200MR, S800S, S800C, S300P, ST200MTR series



ST201M



ST202M



S200MR

Description

The UL 1077 family of supplementary protectors offers a compact solution for protection requirements. The devices are DIN rail mounted.

The UL 1077 MCBs are available with application-specific trip characteristics to provide maximum circuit protection.

The supplementary protectors offer thermal magnetic trip protection according to B, C, D, K and Z trip curves.

For the worldwide market, the breakers carry UL, CSA, IEC, CE and many other agency approvals and certifications.

Features

- Energy limiting
- Fast breaking time (2.3–2.5 ms)
- Bus connection system
- Wide range of accessories
- Available with variable depth handle mechanism
- CE certified and marked
- DIN rail mounting
- Finger-safe terminals
- Multi-function terminals
- Suitable for reverse feed
- UL 1077 recognized supplemental protective device, UL file #E76126 and E167556

S800S and S800C series

The small pole width of only 27 mm allows a space-saving installation. The current range covers nominal rated currents from 10 A up to 100 A (S800C) and 6 A up to 63 A (S800S) with a maximum rated short-circuit interrupt rating of up to 20 kA (S800C) and 30 kA (S800S) in UL applications.

Due to the number of global standards met by the S800C/S, the flexibility for worldwide installation is high. A single product can fulfill the needs of both, IEC and UL applications.

Features

- Rated operational voltage up to 480Y/277 V AC – 500 V DC (S800C) and 600Y/347 V AC (S800S), respectively (UL)
- Compression terminals can be easily converted to ring tongue terminals
- Compact
- Space saving



S800C

	ST200M	S200MUC	S200MR	S800S	S800C	S300P	ST200MTR
Ampacity	0.5 to 63 A	0.2 to 63 A	0.2 to 63 A	0.5 to 63 A	10 to 100 A	0.2 to 63 A	0.5 to 63 A
Voltage	480Y/277 V AC 60/125 V DC (1-/2-pole)	480Y/277 V AC 250/500 V DC (1-/2-pole)	480Y/277 V AC –	600Y/347 V AC –	480Y/277 V AC up to 500 V DC	480Y/277 V AC 60/125 V DC (1-/2-pole)	480Y / 277 V AC 1-pole: 250 V DC; 2-/4-pole: up to 500 V DC
Poles	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4 AC 1, 2, 4 DC
Trip curves	B, C, D, K, Z	C, K, Z	K	B, C, D, K	B, C, D, K	B, C, D, K, Z	K, Z
Short circuit interrupt rating	10/5 kA	up to 10 kA	10 kA	up to 30 kA	up to 20 kA	10 kA	ST200MTR: 6 kA ST200MTR (DC): 10 kA
Auxiliary contacts	yes	yes	yes	yes	yes	yes	yes
Bell alarm	yes	yes	yes	yes	yes	yes	yes
Shunt trip	yes	yes	yes	yes	yes	yes	yes
Bottom-mount aux. contact	yes	yes	–	–	–	yes	–
Busbars	yes	yes	yes	–	–	yes	Ring tongue busbar

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ST200M-B

Supplemental protectors — UL 1077, CSA 22.2 No. 235



ST201M-B16



ST202M-B35



ST203M-B7



ST204M-B25

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201M-B0.5	2	0.5	ST202M-B0.5
	1	ST201M-B1		1	ST202M-B1
	1.6	ST201M-B1.6		1.6	ST202M-B1.6
	2	ST201M-B2		2	ST202M-B2
	3	ST201M-B3		3	ST202M-B3
	4	ST201M-B4		4	ST202M-B4
	5	ST201M-B5		5	ST202M-B5
	6	ST201M-B6		6	ST202M-B6
	7	ST201M-B7		7	ST202M-B7
	8	ST201M-B8		8	ST202M-B8
	10	ST201M-B10		10	ST202M-B10
	13	ST201M-B13		13	ST202M-B13
	15	ST201M-B15		15	ST202M-B15
	16	ST201M-B16		16	ST202M-B16
	20	ST201M-B20		20	ST202M-B20
	25	ST201M-B25		25	ST202M-B25
	30	ST201M-B30		30	ST202M-B30
	32	ST201M-B32		32	ST202M-B32
	35	ST201M-B35		35	ST202M-B35
	40	ST201M-B40		40	ST202M-B40
	50	ST201M-B50		50	ST202M-B50
	60	ST201M-B60		60	ST202M-B60
	63	ST201M-B63		63	ST202M-B63
1+NA	0.5	ST201M-B0.5NA	3	0.5	ST203M-B0.5
	1	ST201M-B1NA		1	ST203M-B1
	1.6	ST201M-B1.6NA		1.6	ST203M-B1.6
	2	ST201M-B2NA		2	ST203M-B2
	3	ST201M-B3NA		3	ST203M-B3
	4	ST201M-B4NA		4	ST203M-B4
	5	ST201M-B5NA		5	ST203M-B5
	6	ST201M-B6NA		6	ST203M-B6
	7	ST201M-B7NA		7	ST203M-B7
	8	ST201M-B8NA		8	ST203M-B8
	10	ST201M-B10NA		10	ST203M-B10
	13	ST201M-B13NA		13	ST203M-B13
	15	ST201M-B15NA		15	ST203M-B15
	16	ST201M-B16NA		16	ST203M-B16
	20	ST201M-B20NA		20	ST203M-B20
	25	ST201M-B25NA		25	ST203M-B25
	30	ST201M-B30NA		30	ST203M-B30
	32	ST201M-B32NA		32	ST203M-B32
	35	ST201M-B35NA		35	ST203M-B35
	40	ST201M-B40NA		40	ST203M-B40
	50	ST201M-B50NA		50	ST203M-B50
	60	ST201M-B60NA		60	ST203M-B60
	63	ST201M-B63NA		63	ST203M-B63

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ST200M-B (cont.)

Supplemental protectors — UL 1077, CSA 22.2 No. 235

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
3+NA	0.5	ST203M-B0.5NA	4	0.5	ST204M-B0.5
	1	ST203M-B1NA		1	ST204M-B1
	1.6	ST203M-B1.6NA		1.6	ST204M-B1.6
	2	ST203M-B2NA		2	ST204M-B2
	3	ST203M-B3NA		3	ST204M-B3
	4	ST203M-B4NA		4	ST204M-B4
	5	ST203M-B5NA		5	ST204M-B5
	6	ST203M-B6NA		6	ST204M-B6
	7	ST203M-B7NA		7	ST204M-B7
	8	ST203M-B8NA		8	ST204M-B8
	10	ST203M-B10NA		10	ST204M-B10
	13	ST203M-B13NA		13	ST204M-B13
	15	ST203M-B15NA		15	ST204M-B15
	16	ST203M-B16NA		16	ST204M-B16
	20	ST203M-B20NA		20	ST204M-B20
	25	ST203M-B25NA		25	ST204M-B25
	30	ST203M-B30NA		30	ST204M-B30
	32	ST203M-B32NA		32	ST204M-B32
	35	ST203M-B35NA		35	ST204M-B35
	40	ST203M-B40NA		40	ST204M-B40
	50	ST203M-B50NA		50	ST204M-B50
	60	ST203M-B60NA		60	ST204M-B60
	63	ST203M-B63NA		63	ST204M-B63

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ST200M-C
Supplemental protectors — UL 1077, CSA 22.2 No. 235


ST201M-C16


ST202M-C35


ST203M-C7


ST204M-C25

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201M-C0.5	2	0.5	ST202M-C0.5
	1	ST201M-C1		1	ST202M-C1
	1.6	ST201M-C1.6		1.6	ST202M-C1.6
	2	ST201M-C2		2	ST202M-C2
	3	ST201M-C3		3	ST202M-C3
	4	ST201M-C4		4	ST202M-C4
	5	ST201M-C5		5	ST202M-C5
	6	ST201M-C6		6	ST202M-C6
	7	ST201M-C7		7	ST202M-C7
	8	ST201M-C8		8	ST202M-C8
	10	ST201M-C10		10	ST202M-C10
	13	ST201M-C13		13	ST202M-C13
	15	ST201M-C15		15	ST202M-C15
	16	ST201M-C16		16	ST202M-C16
	20	ST201M-C20		20	ST202M-C20
	25	ST201M-C25		25	ST202M-C25
	30	ST201M-C30		30	ST202M-C30
	32	ST201M-C32		32	ST202M-C32
	35	ST201M-C35		35	ST202M-C35
	40	ST201M-C40		40	ST202M-C40
	50	ST201M-C50		50	ST202M-C50
	60	ST201M-C60		60	ST202M-C60
	63	ST201M-C63		63	ST202M-C63
1+NA	0.5	ST201M-C0.5NA	3	0.5	ST203M-C0.5
	1	ST201M-C1NA		1	ST203M-C1
	1.6	ST201M-C1.6NA		1.6	ST203M-C1.6
	2	ST201M-C2NA		2	ST203M-C2
	3	ST201M-C3NA		3	ST203M-C3
	4	ST201M-C4NA		4	ST203M-C4
	5	ST201M-C5NA		5	ST203M-C5
	6	ST201M-C6NA		6	ST203M-C6
	7	ST201M-C7NA		7	ST203M-C7
	8	ST201M-C8NA		8	ST203M-C8
	10	ST201M-C10NA		10	ST203M-C10
	13	ST201M-C13NA		13	ST203M-C13
	15	ST201M-C15NA		15	ST203M-C15
	16	ST201M-C16NA		16	ST203M-C16
	20	ST201M-C20NA		20	ST203M-BC20
	25	ST201M-C25NA		25	ST203M-C25
	30	ST201M-C30NA		30	ST203M-C30
	32	ST201M-C32NA		32	ST203M-C32
	35	ST201M-C35NA		35	ST203M-C35
	40	ST201M-C40NA		40	ST203M-C40
	50	ST201M-C50NA		50	ST203M-C50
	60	ST201M-C60NA		60	ST203M-C60
	63	ST201M-C63NA		63	ST203M-C63

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ST200M-C (cont.)

Supplemental protectors — UL 1077, CSA 22.2 No. 235

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
3+NA	0.5	ST203M-C0.5NA	4	0.5	ST204M-C0.5
	1	ST203M-C1NA		1	ST204M-C1
	1.6	ST203M-C1.6NA		1.6	ST204M-C1.6
	2	ST203M-C2NA		2	ST204M-C2
	3	ST203M-C3NA		3	ST204M-C3
	4	ST203M-C4NA		4	ST204M-C4
	5	ST203M-C5NA		5	ST204M-C5
	6	ST203M-C6NA		6	ST204M-C6
	7	ST203M-C7NA		7	ST204M-C7
	8	ST203M-C8NA		8	ST204M-C8
	10	ST203M-C10NA		10	ST204M-C10
	13	ST203M-C13NA		13	ST204M-C13
	15	ST203M-C15NA		15	ST204M-C15
	16	ST203M-C16NA		16	ST204M-C16
	20	ST203M-C20NA		20	ST204M-C20
	25	ST203M-C25NA		25	ST204M-C25
	30	ST203M-C30NA		30	ST204M-C30
	32	ST203M-C32NA		32	ST204M-C32
	35	ST203M-C35NA		35	ST204M-C35
	40	ST203M-C40NA		40	ST204M-C40
	50	ST203M-C50NA		50	ST204M-C50
	60	ST203M-C60NA		60	ST204M-C60
	63	ST203M-C63NA		63	ST204M-C63

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ST200M-D

Supplemental protectors — UL 1077, CSA 22.2 No. 235



ST201M-D16



ST202M-D35



ST203M-D7



ST204M-D25

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201M-D0.5	2	0.5	ST202M-D0.5
	1	ST201M-D1		1	ST202M-D1
	1.6	ST201M-D1.6		1.6	ST202M-D1.6
	2	ST201M-D2		2	ST202M-D2
	3	ST201M-D3		3	ST202M-D3
	4	ST201M-D4		4	ST202M-D4
	5	ST201M-D5		5	ST202M-D5
	6	ST201M-D6		6	ST202M-D6
	7	ST201M-D7		7	ST202M-D7
	8	ST201M-D8		8	ST202M-D8
	10	ST201M-D10		10	ST202M-D10
	13	ST201M-D13		13	ST202M-D13
	15	ST201M-D15		15	ST202M-D15
	16	ST201M-D16		16	ST202M-D16
	20	ST201M-D20		20	ST202M-D20
	25	ST201M-D25		25	ST202M-D25
	30	ST201M-D30		30	ST202M-D30
	32	ST201M-D32		32	ST202M-D32
	35	ST201M-D35		35	ST202M-D35
	40	ST201M-D40		40	ST202M-D40
	50	ST201M-D50		50	ST202M-D50
	60	ST201M-D60		60	ST202M-D60
	63	ST201M-D63		63	ST202M-D63
1+NA	0.5	ST201M-D0.5NA	3	0.5	ST203M-D0.5
	1	ST201M-D1NA		1	ST203M-D1
	1.6	ST201M-D1.6NA		1.6	ST203M-D1.6
	2	ST201M-D2NA		2	ST203M-D2
	3	ST201M-D3NA		3	ST203M-D3
	4	ST201M-D4NA		4	ST203M-D4
	5	ST201M-D5NA		5	ST203M-D5
	6	ST201M-D6NA		6	ST203M-D6
	7	ST201M-D7NA		7	ST203M-D7
	8	ST201M-D8NA		8	ST203M-D8
	10	ST201M-D10NA		10	ST203M-D10
	13	ST201M-D13NA		13	ST203M-D13
	15	ST201M-D15NA		15	ST203M-D15
	16	ST201M-D16NA		16	ST203M-D16
	20	ST201M-D20NA		20	ST203M-D20
	25	ST201M-D25NA		25	ST203M-D25
	30	ST201M-D30NA		30	ST203M-D30
	32	ST201M-D32NA		32	ST203M-D32
	35	ST201M-D35NA		35	ST203M-D35
	40	ST201M-D40NA		40	ST203M-D40
	50	ST201M-D50NA		50	ST203M-D50
	60	ST201M-D60NA		60	ST203M-D60
	63	ST201M-D63NA		63	ST203M-D63

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ST200M-D (cont.)

Supplemental protectors — UL 1077, CSA 22.2 No. 235

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
3+NA	0.5	ST203M-D0.5NA	4	0.5	ST204M-D0.5
	1	ST203M-D1NA		1	ST204M-D1
	1.6	ST203M-D1.6NA		1.6	ST204M-D1.6
	2	ST203M-D2NA		2	ST204M-D2
	3	ST203M-D3NA		3	ST204M-D3
	4	ST203M-D4NA		4	ST204M-D4
	5	ST203M-D5NA		5	ST204M-D5
	6	ST203M-D6NA		6	ST204M-D6
	7	ST203M-D7NA		7	ST204M-D7
	8	ST203M-D8NA		8	ST204M-D8
	10	ST203M-D10NA		10	ST204M-D10
	13	ST203M-D13NA		13	ST204M-D13
	15	ST203M-D15NA		15	ST204M-D15
	16	ST203M-D16NA		16	ST204M-D16
	20	ST203M-D20NA		20	ST204M-D20
	25	ST203M-D25NA		25	ST204M-D25
	30	ST203M-D30NA		30	ST204M-D30
	32	ST203M-D32NA		32	ST204M-D32
	35	ST203M-D35NA		35	ST204M-D35
	40	ST203M-D40NA		40	ST204M-D40
	50	ST203M-D50NA		50	ST204M-D50
	60	ST203M-D60NA		60	ST204M-D60
	63	ST203M-D63NA		63	ST204M-D63

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ST200M-K

Supplemental protectors — UL 1077, CSA 22.2 No. 235



ST201M-K16



ST202M-K35



ST203M-K7



ST204M-K25

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201M-K0.5	2	0.5	ST202M-K0.5
	1	ST201M-K1		1	ST202M-K1
	1.6	ST201M-K1.6		1.6	ST202M-K1.6
	2	ST201M-K2		2	ST202M-K2
	3	ST201M-K3		3	ST202M-K3
	4	ST201M-K4		4	ST202M-K4
	5	ST201M-K5		5	ST202M-K5
	6	ST201M-K6		6	ST202M-K6
	7	ST201M-K7		7	ST202M-K7
	8	ST201M-K8		8	ST202M-K8
	10	ST201M-K10		10	ST202M-K10
	13	ST201M-K13		13	ST202M-K13
	15	ST201M-K15		15	ST202M-K15
	16	ST201M-K16		16	ST202M-K16
	20	ST201M-K20		20	ST202M-K20
	25	ST201M-K25		25	ST202M-K25
	30	ST201M-K30		30	ST202M-K30
	32	ST201M-K32		32	ST202M-K32
	35	ST201M-K35		35	ST202M-K35
	40	ST201M-K40		40	ST202M-K40
	50	ST201M-K50		50	ST202M-K50
	60	ST201M-K60		60	ST202M-K60
	63	ST201M-K63		63	ST202M-K63
1+NA	0.5	ST201M-K0.5NA	3	0.5	ST203M-K0.5
	1	ST201M-K1NA		1	ST203M-K1
	1.6	ST201M-K1.6NA		1.6	ST203M-K1.6
	2	ST201M-K2NA		2	ST203M-K2
	3	ST201M-K3NA		3	ST203M-K3
	4	ST201M-K4NA		4	ST203M-K4
	5	ST201M-K5NA		5	ST203M-K5
	6	ST201M-K6NA		6	ST203M-K6
	7	ST201M-K7NA		7	ST203M-K7
	8	ST201M-K8NA		8	ST203M-K8
	10	ST201M-K10NA		10	ST203M-K10
	13	ST201M-K13NA		13	ST203M-K13
	15	ST201M-K15NA		15	ST203M-K15
	16	ST201M-K16NA		16	ST203M-K16
	20	ST201M-K20NA		20	ST203M-K20
	25	ST201M-K25NA		25	ST203M-K25
	30	ST201M-K30NA		30	ST203M-K30
	32	ST201M-K32NA		32	ST203M-K32
	35	ST201M-K35NA		35	ST203M-K35
	40	ST201M-K40NA		40	ST203M-K40
	50	ST201M-K50NA		50	ST203M-K50
	60	ST201M-K60NA		60	ST203M-K60
	63	ST201M-K63NA		63	ST203M-K63

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ST200M-K (cont.)

Supplemental protectors — UL 1077, CSA 22.2 No. 235

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
3+NA	0.5	ST203M-K0.5NA	4	0.5	ST204M-K0.5
	1	ST203M-K1NA		1	ST204M-K1
	1.6	ST203M-K1.6NA		1.6	ST204M-K1.6
	2	ST203M-K2NA		2	ST204M-K2
	3	ST203M-K3NA		3	ST204M-K3
	4	ST203M-K4NA		4	ST204M-K4
	5	ST203M-K5NA		5	ST204M-K5
	6	ST203M-K6NA		6	ST204M-K6
	7	ST203M-K7NA		7	ST204M-K7
	8	ST203M-K8NA		8	ST204M-K8
	10	ST203M-K10NA		10	ST204M-K10
	13	ST203M-K13NA		13	ST204M-K13
	15	ST203M-K15NA		15	ST204M-K15
	16	ST203M-K16NA		16	ST204M-K16
	20	ST203M-K20NA		20	ST204M-K20
	25	ST203M-K25NA		25	ST204M-K25
	30	ST203M-K30NA		30	ST204M-K30
	32	ST203M-K32NA		32	ST204M-K32
	35	ST203M-K35NA		35	ST204M-K35
	40	ST203M-K40NA		40	ST204M-K40
	50	ST203M-K50NA		50	ST204M-K50
	60	ST203M-K60NA		60	ST204M-K60
	63	ST203M-K63NA		63	ST204M-K63

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ST200M-Z

Supplemental protectors — UL 1077, CSA 22.2 No. 235



ST201M-Z16



ST202M-Z35



ST203M-Z7



ST204M-Z25

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201M-Z0.5	2	0.5	ST202M-Z0.5
	1	ST201M-Z1		1	ST202M-Z1
	1.6	ST201M-Z1.6		1.6	ST202M-Z1.6
	2	ST201M-Z2		2	ST202M-Z2
	3	ST201M-Z3		3	ST202M-Z3
	4	ST201M-Z4		4	ST202M-Z4
	5	ST201M-Z5		5	ST202M-Z5
	6	ST201M-Z6		6	ST202M-Z6
	7	ST201M-Z7		7	ST202M-Z7
	8	ST201M-Z8		8	ST202M-Z8
	10	ST201M-Z10		10	ST202M-Z10
	13	ST201M-Z13		13	ST202M-Z13
	15	ST201M-Z15		15	ST202M-Z15
	16	ST201M-Z16		16	ST202M-Z16
	20	ST201M-Z20		20	ST202M-Z20
	25	ST201M-Z25		25	ST202M-Z25
	30	ST201M-Z30		30	ST202M-Z30
	32	ST201M-Z32		32	ST202M-Z32
	35	ST201M-Z35		35	ST202M-Z35
	40	ST201M-Z40		40	ST202M-Z40
	50	ST201M-Z50		50	ST202M-Z50
	60	ST201M-Z60		60	ST202M-Z60
	63	ST201M-Z63		63	ST202M-Z63
1+NA	0.5	ST201M-Z0.5NA	3	0.5	ST203M-Z0.5
	1	ST201M-Z1NA		1	ST203M-Z1
	1.6	ST201M-Z1.6NA		1.6	ST203M-Z1.6
	2	ST201M-Z2NA		2	ST203M-Z2
	3	ST201M-Z3NA		3	ST203M-Z3
	4	ST201M-Z4NA		4	ST203M-Z4
	5	ST201M-Z5NA		5	ST203M-Z5
	6	ST201M-Z6NA		6	ST203M-Z6
	7	ST201M-Z7NA		7	ST203M-Z7
	8	ST201M-Z8NA		8	ST203M-Z8
	10	ST201M-Z10NA		10	ST203M-Z10
	13	ST201M-Z13NA		13	ST203M-Z13
	15	ST201M-Z15NA		15	ST203M-Z15
	16	ST201M-Z16NA		16	ST203M-Z16
	20	ST201M-Z20NA		20	ST203M-Z20
	25	ST201M-Z25NA		25	ST203M-Z25
	30	ST201M-Z30NA		30	ST203M-Z30
	32	ST201M-Z32NA		32	ST203M-Z32
	35	ST201M-Z35NA		35	ST203M-Z35
	40	ST201M-Z40NA		40	ST203M-Z40
	50	ST201M-Z50NA		50	ST203M-Z50
	60	ST201M-Z60NA		60	ST203M-Z60
	63	ST201M-Z63NA		63	ST203M-Z63

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ST200M-Z (cont.)
Supplemental protectors — UL 1077, CSA 22.2 No. 235

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
3+NA	0.5	ST203M-Z0.5NA	4	0.5	ST204M-Z0.5
	1	ST203M-Z1NA		1	ST204M-Z1
	1.6	ST203M-Z1.6NA		1.6	ST204M-Z1.6
	2	ST203M-Z2NA		2	ST204M-Z2
	3	ST203M-Z3NA		3	ST204M-Z3
	4	ST203M-Z4NA		4	ST204M-Z4
	5	ST203M-Z5NA		5	ST204M-Z5
	6	ST203M-Z6NA		6	ST204M-Z6
	7	ST203M-Z7NA		7	ST204M-Z7
	8	ST203M-Z8NA		8	ST204M-Z8
	10	ST203M-Z10NA		10	ST204M-Z10
	13	ST203M-Z13NA		13	ST204M-Z13
	15	ST203M-Z15NA		15	ST204M-Z15
	16	ST203M-Z16NA		16	ST204M-Z16
	20	ST203M-Z20NA		20	ST204M-Z20
	25	ST203M-Z25NA		25	ST204M-Z25
	30	ST203M-Z30NA		30	ST204M-Z30
	32	ST203M-Z32NA		32	ST204M-Z32
	35	ST203M-Z35NA		35	ST204M-Z35
	40	ST203M-Z40NA		40	ST204M-Z40
	50	ST203M-Z50NA		50	ST204M-Z50
	60	ST203M-Z60NA		60	ST204M-Z60
	63	ST203M-Z63NA		63	ST204M-Z63

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S200MR-K with ring tongue terminals

Supplemental protectors — UL 1077, CSA 22.2 No. 235



S201MR-K63



S202MR-K63



S203MR-K63



S204MR-K63

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.2	S201MR-K0.2	3	0.2	S203MR-K0.2
	0.3	S201MR-K0.3		0.3	S203MR-K0.3
	0.5	S201MR-K0.5		0.5	S203MR-K0.5
	0.75	S201MR-K0.75		0.75	S203MR-K0.75
	1	S201MR-K1		1	S203MR-K1
	1.6	S201MR-K1.6		1.6	S203MR-K1.6
	2	S201MR-K2		2	S203MR-K2
	3	S201MR-K3		3	S203MR-K3
	4	S201MR-K4		4	S203MR-K4
	5	S201MR-K5		5	S203MR-K5
	6	S201MR-K6		6	S203MR-K6
	8	S201MR-K8		8	S203MR-K8
	10	S201MR-K10		10	S203MR-K10
	13	S201MR-K13		13	S203MR-K13
	15	S201MR-K15		15	S203MR-K15
	16	S201MR-K16		16	S203MR-K16
	20	S201MR-K20		20	S203MR-K20
	25	S201MR-K25		25	S203MR-K25
	30	S201MR-K30		30	S203MR-K30
	32	S201MR-K32		32	S203MR-K32
	35	S201MR-K35		35	S203MR-K35
	40	S201MR-K40		40	S203MR-K40
	50	S201MR-K50		50	S203MR-K50
	60	S201MR-K60		60	S203MR-K60
	63	S201MR-K63		63	S203MR-K63
2	0.2	S202MR-K0.2	4	0.2	S204MR-K0.2
	0.3	S202MR-K0.3		0.3	S204MR-K0.3
	0.5	S202MR-K0.5		0.5	S204MR-K0.5
	0.75	S202MR-K0.75		0.75	S204MR-K0.75
	1	S202MR-K1		1	S204MR-K1
	1.6	S202MR-K1.6		1.6	S204MR-K1.6
	2	S202MR-K2		2	S204MR-K2
	3	S202MR-K3		3	S204MR-K3
	4	S202MR-K4		4	S204MR-K4
	5	S202MR-K5		5	S204MR-K5
	6	S202MR-K6		6	S204MR-K6
	8	S202MR-K8		8	S204MR-K8
	10	S202MR-K10		10	S204MR-K10
	13	S202MR-K13		13	S204MR-K13
	15	S202MR-K15		15	S204MR-K15
	16	S202MR-K16		16	S204MR-K16
	20	S202MR-K20		20	S204MR-K20
	25	S202MR-K25		25	S204MR-K25
	30	S202MR-K30		30	S204MR-K30
	32	S202MR-K32		32	S204MR-K32
	35	S202MR-K35		35	S204MR-K35
	40	S202MR-K40		40	S204MR-K40
	50	S202MR-K50		50	S204MR-K50
	60	S202MR-K60		60	S204MR-K60
	63	S202MR-K63		63	S204MR-K63

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S200MUC-C

Supplemental protectors — UL 1077, CSA 22.2 No. 235



S201MUC-C40



S202MUC-C40



S203MUC-C40



S204MUC-C40

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S201MUC-C0.5	3	0.5	S203MUC-C0.5
	1	S201MUC-C1		1	S203MUC-C1
	1.6	S201MUC-C1.6		1.6	S203MUC-C1.6
	2	S201MUC-C2		2	S203MUC-C2
	3	S201MUC-C3		3	S203MUC-C3
	4	S201MUC-C4		4	S203MUC-C4
	6	S201MUC-C6		6	S203MUC-C6
	8	S201MUC-C8		8	S203MUC-C8
	10	S201MUC-C10		10	S203MUC-C10
	13	S201MUC-C13		13	S203MUC-C13
	16	S201MUC-C16		16	S203MUC-C16
	20	S201MUC-C20		20	S203MUC-C20
	25	S201MUC-C25		25	S203MUC-C25
	32	S201MUC-C32		32	S203MUC-C32
	40	S201MUC-C40		40	S203MUC-C40
	50	S201MUC-C50		50	S203MUC-C50
	63	S201MUC-C63		63	S203MUC-C63
2	0.5	S202MUC-C0.5	4	0.5	S204MUC-C0.5
	1	S202MUC-C1		1	S204MUC-C1
	1.6	S202MUC-C1.6		1.6	S204MUC-C1.6
	2	S202MUC-C2		2	S204MUC-C2
	3	S202MUC-C3		3	S204MUC-C3
	4	S202MUC-C4		4	S204MUC-C4
	6	S202MUC-C6		6	S204MUC-C6
	8	S202MUC-C8		8	S204MUC-C8
	10	S202MUC-C10		10	S204MUC-C10
	13	S202MUC-C13		13	S204MUC-C13
	16	S202MUC-C16		16	S204MUC-C16
	20	S202MUC-C20		20	S204MUC-C20
	25	S202MUC-C25		25	S204MUC-C25
	32	S202MUC-C32		32	S204MUC-C32
	40	S202MUC-C40		40	S204MUC-C40
	50	S202MUC-C50		50	S204MUC-C50
	63	S202MUC-C63		63	S204MUC-C63

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S200MUC-K

Supplemental protectors — UL 1077, CSA 22.2 No. 235



S201MUC-K40



S202MUC-K40



S203MUC-K40



S204MUC-K40

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.2	S201MUC-K0.2	3	0.2	S203MUC-K0.2
	0.3	S201MUC-K0.3		0.3	S203MUC-K0.3
	0.5	S201MUC-K0.5		0.5	S203MUC-K0.5
	0.75	S201MUC-KO.75		0.75	S203MUC-K0.75
	1	S201MUC-K1		1	S203MUC-K1
	1.6	S201MUC-K1.6		1.6	S203MUC-K1.6
	2	S201MUC-K2		2	S203MUC-K2
	3	S201MUC-K3		3	S203MUC-K3
	4	S201MUC-K4		4	S203MUC-K4
	5	S201MUC-K5		5	S203MUC-K5
	6	S201MUC-K6		6	S203MUC-K6
	8	S201MUC-K8		8	S203MUC-K8
	10	S201MUC-K10		10	S203MUC-K10
	13	S201MUC-K13		13	S203MUC-K13
	15	S201MUC-K15		15	S203MUC-K15
	16	S201MUC-K16		16	S203MUC-K16
	20	S201MUC-K20		20	S203MUC-K20
	25	S201MUC-K25		25	S203MUC-K25
	30	S201MUC-K30		30	S203MUC-K30
	32	S201MUC-K32		32	S203MUC-K32
	35	S201MUC-K35		35	S203MUC-K35
	40	S201MUC-K40		40	S203MUC-K40
	50	S201MUC-K50		50	S203MUC-K50
	60	S201MUC-K60		60	S203MUC-K60
	63	S201MUC-K63		63	S203MUC-K63
2	0.2	S202MUC-K0.2	4	0.2	S204MUC-K0.2
	0.3	S202MUC-K0.3		0.3	S204MUC-K0.3
	0.5	S202MUC-K0.5		0.5	S204MUC-K0.5
	0.75	S202MUC-K0.75		0.75	S204MUC-K0.75
	1	S202MUC-K1		1	S204MUC-K1
	1.6	S202MUC-K1.6		1.6	S204MUC-K1.6
	2	S202MUC-K2		2	S204MUC-K2
	3	S202MUC-K3		3	S204MUC-K3
	4	S202MUC-K4		4	S204MUC-K4
	5	S202MUC-K5		5	S204MUC-K5
	6	S202MUC-K6		6	S204MUC-K6
	8	S202MUC-K8		8	S204MUC-K8
	10	S202MUC-K10		10	S204MUC-K10
	13	S202MUC-K13		13	S204MUC-K13
	15	S202MUC-K15		15	S204MUC-K15
	16	S202MUC-K16		16	S204MUC-K16
	20	S202MUC-K20		20	S204MUC-K20
	25	S202MUC-K25		25	S204MUC-K25
	30	S202MUC-K30		30	S204MUC-K30
	32	S202MUC-K32		32	S204MUC-K32
	35	S202MUC-K35		35	S204MUC-K35
	40	S202MUC-K40		40	S204MUC-K40
	50	S202MUC-K50		50	S204MUC-K50
	60	S202MUC-K60		60	S204MUC-K60
	63	S202MUC-K63		63	S204MUC-K63

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S200MUC-Z

Supplemental protectors — UL 1077, CSA 22.2 No. 235



S201MUC-Z40



S202MUC-Z40



S203MUC-Z40



S204MUC-Z40

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S201MUC-Z0.5	3	0.5	S203MUC-Z0.5
	1	S201MUC-Z1		1	S203MUC-Z1
	1.6	S201MUC-Z1.6		1.6	S203MUC-Z1.6
	2	S201MUC-Z2		2	S203MUC-Z2
	3	S201MUC-Z3		3	S203MUC-Z3
	4	S201MUC-Z4		4	S203MUC-Z4
	5	S201MUC-Z5		5	S203MUC-Z5
	6	S201MUC-Z6		6	S203MUC-Z6
	8	S201MUC-Z8		8	S203MUC-Z8
	10	S201MUC-Z10		10	S203MUC-Z10
	15	S201MUC-Z15		15	S203MUC-Z15
	16	S201MUC-Z16		16	S203MUC-Z16
	20	S201MUC-Z20		20	S203MUC-Z20
	25	S201MUC-Z25		25	S203MUC-Z25
	30	S201MUC-Z30		30	S203MUC-Z30
	32	S201MUC-Z32		32	S203MUC-Z32
	35	S201MUC-Z35		35	S203MUC-Z35
	40	S201MUC-Z40		40	S203MUC-Z40
	50	S201MUC-Z50		50	S203MUC-Z50
	60	S201MUC-Z60		60	S203MUC-Z60
	63	S201MUC-Z63		63	S203MUC-Z63
2	0.5	S202MUC-Z0.5	4	0.5	S204MUC-Z0.5
	1	S202MUC-Z1		1	S204MUC-Z1
	1.6	S202MUC-Z1.6		1.6	S204MUC-Z1.6
	2	S202MUC-Z2		2	S204MUC-Z2
	3	S202MUC-Z3		3	S204MUC-Z3
	4	S202MUC-Z4		4	S204MUC-Z4
	5	S202MUC-Z5		5	S204MUC-Z5
	6	S202MUC-Z6		6	S204MUC-Z6
	8	S202MUC-Z8		8	S204MUC-Z8
	10	S202MUC-Z10		10	S204MUC-Z10
	15	S202MUC-Z15		15	S204MUC-Z15
	16	S202MUC-Z16		16	S204MUC-Z16
	20	S202MUC-Z20		20	S204MUC-Z20
	25	S202MUC-Z25		25	S204MUC-Z25
	30	S202MUC-Z30		30	S204MUC-Z30
	32	S202MUC-Z32		32	S204MUC-Z32
	35	S202MUC-Z35		35	S204MUC-Z35
	40	S202MUC-Z40		40	S204MUC-Z40
	50	S202MUC-Z50		50	S204MUC-Z50
	60	S202MUC-Z60		60	S204MUC-Z60
	63	S202MUC-Z63		63	S204MUC-Z63

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S800C-B
With interchangeable cage terminal


S801C-B


S802C-B


S803C-B


S804C-B

Number of poles	Rated current A	Cat. no.	Number of poles	Rated current A	Cat. no.
1	10	S801C-B10	3	10	S803C-B10
	13	S801C-B13		13	S803C-B13
	16	S801C-B16		16	S803C-B16
	20	S801C-B20		20	S803C-B20
	25	S801C-B25		25	S803C-B25
	32	S801C-B32		32	S803C-B32
	40	S801C-B40		40	S803C-B40
	50	S801C-B50		50	S803C-B50
	63	S801C-B63		63	S803C-B63
	80	S801C-B80		80	S803C-B80
	100	S801C-B100		100	S803C-B100
2	10	S802C-B10	4	10	S804C-B10
	13	S802C-B13		13	S804C-B13
	16	S802C-B16		16	S804C-B16
	20	S802C-B20		20	S804C-B20
	25	S802C-B25		25	S804C-B25
	32	S802C-B32		32	S804C-B32
	40	S802C-B40		40	S804C-B40
	50	S802C-B50		50	S804C-B50
	63	S802C-B63		63	S804C-B63
	80	S802C-B80		80	S804C-B80
	100	S802C-B100		100	S804C-B100

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S800C-C
With interchangeable cage terminal


S801C-C


S802C-C


S803C-C


S804C-C

Number of poles	Rated current A	Cat. no.	Number of poles	Rated current A	Cat. no.
1	10	S801C-C10	3	10	S803C-C10
	13	S801C-C13		13	S803C-C13
	16	S801C-C16		16	S803C-C16
	20	S801C-C20		20	S803C-C20
	25	S801C-C25		25	S803C-C25
	32	S801C-C32		32	S803C-C32
	40	S801C-C40		40	S803C-C40
	50	S801C-C50		50	S803C-C50
	63	S801C-C63		63	S803C-C63
	80	S801C-C80		80	S803C-C80
	100	S801C-C100		100	S803C-C100
2	10	S802C-C10	4	10	S804C-C10
	13	S802C-C13		13	S804C-C13
	16	S802C-C16		16	S804C-C16
	20	S802C-C20		20	S804C-C20
	25	S802C-C25		25	S804C-C25
	32	S802C-C32		32	S804C-C32
	40	S802C-C40		40	S804C-C40
	50	S802C-C50		50	S804C-C50
	63	S802C-C63		63	S804C-C63
	80	S802C-C80		80	S804C-C80
	100	S802C-C100		100	S804C-C100

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S800C-D
With interchangeable cage terminal


S801C-D


S802C-D


S803C-D


S804C-D

Number of poles	Rated current A	Cat. no.	Number of poles	Rated current A	Cat. no.
1	10	S801C-D10	3	10	S803C-D10
	13	S801C-D13		13	S803C-D13
	16	S801C-D16		16	S803C-D16
	20	S801C-D20		20	S803C-D20
	25	S801C-D25		25	S803C-D25
	32	S801C-D32		32	S803C-D32
	40	S801C-D40		40	S803C-D40
	50	S801C-D50		50	S803C-D50
	63	S801C-D63		63	S803C-D63
	80	S801C-D80		80	S803C-D80
	100	S801C-D100		100	S803C-D100
2	10	S802C-D10	4	10	S804C-D10
	13	S802C-D13		13	S804C-D13
	16	S802C-D16		16	S804C-D16
	20	S802C-D20		20	S804C-D20
	25	S802C-D25		25	S804C-D25
	32	S802C-D32		32	S804C-D32
	40	S802C-D40		40	S804C-D40
	50	S802C-D50		50	S804C-D50
	63	S802C-D63		63	S804C-D63
	80	S802C-D80		80	S804C-D80
	100	S802C-D100		100	S804C-D100

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S800C-K
With interchangeable cage terminal


S801C-K


S802C-K


S803C-K


S804C-K

Number of poles	Rated current A	Cat. no.	Number of poles	Rated current A	Cat. no.
1	10	S801C-K10	3	10	S803C-K10
	13	S801C-K13		13	S803C-K13
	16	S801C-K16		16	S803C-K16
	20	S801C-K20		20	S803C-K20
	25	S801C-K25		25	S803C-K25
	32	S801C-K32		32	S803C-K32
	40	S801C-K40		40	S803C-K40
	50	S801C-K50		50	S803C-K50
	63	S801C-K63		63	S803C-K63
	80	S801C-K80		80	S803C-K80
	100	S801C-K100		100	S803C-K100
2	10	S802C-K10	4	10	S804C-K10
	13	S802C-K13		13	S804C-K13
	16	S802C-K16		16	S804C-K16
	20	S802C-K20		20	S804C-K20
	25	S802C-K25		25	S804C-K25
	32	S802C-K32		32	S804C-K32
	40	S802C-K40		40	S804C-K40
	50	S802C-K50		50	S804C-K50
	63	S802C-K63		63	S804C-K63
	80	S802C-K80		80	S804C-K80
	100	S802C-K100		100	S804C-K100

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S800S-B
With interchangeable cage terminal


S801S-B


S802S-B


S803S-B


S804S-B

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S801S-B0.5	3	0.5	S803S-B0.5
	1	S801S-B1		1	S803S-B1
	1.6	S801S-B1.6		1.6	S803S-B1.6
	2	S801S-B2		2	S803S-B2
	2.5	S801S-B2.5		2.5	S803S-B2.5
	3	S801S-B3		3	S803S-B3
	4	S801S-B4		4	S803S-B4
	5	S801S-B5		5	S803S-B5
	6	S801S-B6		6	S803S-B6
	8	S801S-B8		8	S803S-B8
	10	S801S-B10		10	S803S-B10
	13	S801S-B13		13	S803S-B13
	16	S801S-B16		16	S803S-B16
	20	S801S-B20		20	S803S-B20
	25	S801S-B25		25	S803S-B25
	32	S801S-B32		32	S803S-B32
	40	S801S-B40		40	S803S-B40
	50	S801S-B50		50	S803S-B50
	63	S801S-B63		63	S803S-B63
2	0.5	S802S-B0.5	4	0.5	S804S-B0.5
	1	S802S-B1		1	S804S-B1
	1.6	S802S-B1.6		1.6	S804S-B1.6
	2	S802S-B2		2	S804S-B2
	2.5	S802S-B2.5		2.5	S804S-B2.5
	3	S802S-B3		3	S804S-B3
	4	S802S-B4		4	S804S-B4
	5	S802S-B5		5	S804S-B5
	6	S802S-B6		6	S804S-B6
	8	S802S-B8		8	S804S-B8
	10	S802S-B10		10	S804S-B10
	13	S802S-B13		13	S804S-B13
	16	S802S-B16		16	S804S-B16
	20	S802S-B20		20	S804S-B20
	25	S802S-B25		25	S804S-B25
	32	S802S-B32		32	S804S-B32
	40	S802S-B40		40	S804S-B40
	50	S802S-B50		50	S804S-B50
	63	S802S-B63		63	S804S-B63

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S800S-C
With interchangeable cage terminal


S801S-C


S802S-C


S803S-C


S804S-C

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S801S-C0.5	3	0.5	S803S-C0.5
	1	S801S-C1		1	S803S-C1
	1.6	S801S-C1.6		1.6	S803S-C1.6
	2	S801S-C2		2	S803S-C2
	2.5	S801S-C2.5		2.5	S803S-C2.5
	3	S801S-C3		3	S803S-C3
	4	S801S-C4		4	S803S-C4
	5	S801S-C5		5	S803S-C5
	6	S801S-C6		6	S803S-C6
	8	S801S-C8		8	S803S-C8
	10	S801S-C10		10	S803S-C10
	13	S801S-C13		13	S803S-C13
	16	S801S-C16		16	S803S-C16
	20	S801S-C20		20	S803S-C20
	25	S801S-C25		25	S803S-C25
	32	S801S-C32		32	S803S-C32
	40	S801S-C40		40	S803S-C40
	50	S801S-C50		50	S803S-C50
	63	S801S-C63		63	S803S-C63
2	0.5	S802S-C0.5	4	0.5	S804S-C0.5
	1	S802S-C1		1	S804S-C1
	1.6	S802S-C1.6		1.6	S804S-C1.6
	2	S802S-C2		2	S804S-C2
	2.5	S802S-C2.5		2.5	S804S-C2.5
	3	S802S-C3		3	S804S-C3
	4	S802S-C4		4	S804S-C4
	5	S802S-C5		5	S804S-C5
	6	S802S-C6		6	S804S-C6
	8	S802S-C8		8	S804S-C8
	10	S802S-C10		10	S804S-C10
	13	S802S-C13		13	S804S-C13
	16	S802S-C16		16	S804S-C16
	20	S802S-C20		20	S804S-C20
	25	S802S-C25		25	S804S-C25
	32	S802S-C32		32	S804S-C32
	40	S802S-C40		40	S804S-C40
	50	S802S-C50		50	S804S-C50
	63	S802S-C63		63	S804S-C63

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S800S-D
With interchangeable cage terminal


S801S-D


S802S-D


S803S-D


S804S-D

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S801S-D0.5	3	0.5	S803S-D0.5
	1	S801S-D1		1	S803S-D1
	1.6	S801S-D1.6		1.6	S803S-D1.6
	2	S801S-D2		2	S803S-D2
	2.5	S801S-D2.5		2.5	S803S-D2.5
	3	S801S-D3		3	S803S-D3
	4	S801S-D4		4	S803S-D4
	5	S801S-D5		5	S803S-D5
	6	S801S-D6		6	S803S-D6
	8	S801S-D8		8	S803S-D8
	10	S801S-D10		10	S803S-D10
	13	S801S-D13		13	S803S-D13
	16	S801S-D16		16	S803S-D16
	20	S801S-D20		20	S803S-D20
	25	S801S-D25		25	S803S-D25
	32	S801S-D32		32	S803S-D32
	40	S801S-D40		40	S803S-D40
	50	S801S-D50		50	S803S-D50
	63	S801S-D63		63	S803S-D63
2	0.5	S802S-D0.5	4	0.5	S804S-D0.5
	1	S802S-D1		1	S804S-D1
	1.6	S802S-D1.6		1.6	S804S-D1.6
	2	S802S-D2		2	S804S-D2
	2.5	S802S-D2.5		2.5	S804S-D2.5
	3	S802S-D3		3	S804S-D3
	4	S802S-D4		4	S804S-D4
	5	S802S-D5		5	S804S-D5
	6	S802S-D6		6	S804S-D6
	8	S802S-D8		8	S804S-D8
	10	S802S-D10		10	S804S-D10
	13	S802S-D13		13	S804S-D13
	16	S802S-D16		16	S804S-D16
	20	S802S-D20		20	S804S-D20
	25	S802S-D25		25	S804S-D25
	32	S802S-D32		32	S804S-D32
	40	S802S-D40		40	S804S-D40
	50	S802S-D50		50	S804S-D50
	63	S802S-D63		63	S804S-D63

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S800S-K
With interchangeable cage terminal


S801S-K


S802S-K


S803S-K


S804S-K

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S801S-K0.5	3	0.5	S803S-K0.5
	1	S801S-K1		1	S803S-K1
	1.6	S801S-K1.6		1.6	S803S-K1.6
	2	S801S-K2		2	S803S-K2
	2.5	S801S-K2.5		2.5	S803S-K2.5
	3	S801S-K3		3	S803S-K3
	4	S801S-K4		4	S803S-K4
	5	S801S-K5		5	S803S-K5
	6	S801S-K6		6	S803S-K6
	8	S801S-K8		8	S803S-K8
	10	S801S-K10		10	S803S-K10
	13	S801S-K13		13	S803S-K13
	16	S801S-K16		16	S803S-K16
	20	S801S-K20		20	S803S-K20
	25	S801S-K25		25	S803S-K25
	32	S801S-K32		32	S803S-K32
	40	S801S-K40		40	S803S-K40
	50	S801S-K50		50	S803S-K50
	63	S801S-K63		63	S803S-K63
2	0.5	S802S-K0.5	4	0.5	S804S-K0.5
	1	S802S-K1		1	S804S-K1
	1.6	S802S-K1.6		1.6	S804S-K1.6
	2	S802S-K2		2	S804S-K2
	2.5	S802S-K2.5		2.5	S804S-K2.5
	3	S802S-K3		3	S804S-K3
	4	S802S-K4		4	S804S-K4
	5	S802S-K5		5	S804S-K5
	6	S802S-K6		6	S804S-K6
	8	S802S-K8		8	S804S-K8
	10	S802S-K10		10	S804S-K10
	13	S802S-K13		13	S804S-K13
	16	S802S-K16		16	S804S-K16
	20	S802S-K20		20	S804S-K20
	25	S802S-K25		25	S804S-K25
	32	S802S-K32		32	S804S-K32
	40	S802S-K40		40	S804S-K40
	50	S802S-K50		50	S804S-K50
	63	S802S-K63		63	S804S-K63

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S300P
Technical features



General data	
Tripping characteristics	B, C, D, K, Z
Rated voltage	1P: 277 V AC, 60 V DC 2...4P: 480Y/277 V AC, 125 V DC (2 poles in series)
Rated interrupting capacity	10 kA
Application suppl. prot., for general use.	TC2, OL0, SC:U1
Reference temperature for tripping characteristics	40 °C
Electrical endurance	6,000 ops., 1 cycle (1 s.-ON, 9 s.-OFF)
Mechanical data	
Housing	Insulation group I, RAL 7035
Toggle	Insulation group II, black, sealable
Contact position indication	Real CPI (green OFF / red ON)
Trip position indicator	TPI (gray NO TRIP / orange TRIP)
Protection degree acc. to DIN EN 60529	IP20, IP40 in enclosure with cover
Mechanical endurance	20,000 ops.
Shock resistance acc. to IEC/EN 60068-2-27	25 g - 3 shocks - 18 ms
Vibration resistance acc. to IEC/EN 60068-2-6	5 g - 20 cycles at 5 ... 150 ... 5 Hz at 0.8 In
Environmental conditions (damp heat cyclic) acc. to IEC/EN 60068-2-30	28 cycles with 55 °C/90–96 % and 25 °C/95–100 %
Ambient temperature	-40 ... +70 °C
Storage temperature	-50 ... +70 °C
Installation	
Terminal	Fail-safe bi-directional cylinder-lift terminal
Cross-section of conductors (top/bottom)	Solid, stranded: 35 mm² / 35 mm² flexible: 25 mm² / 25 mm² 14–4 AWG
Cross-section of busbars (top/bottom)	10 mm² / 10 mm² 14–8 AWG
Torque	2.8 Nm; 18 in-lbs.
Screw driver	No. 2 Pozidrive
Mounting	On 35 mm DIN rail, acc. to EN 60715 by dual DIN-rail release
Mounting position	Any
Supply	Any
Standards	
IEC/EN 60947-2	
IEC/EN 60898-1	
UL 1077	
CSA 22.2. No. 235	
GB/T 14048.2	
GB/T 10963.1	

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S300P-B

UL 1077, CSA 22.2 No. 235



S301P-B



S302P-B



S303P-B



S304P-B

S300P-B characteristics
Function: Protection and control of circuits against overloads and short circuits; protection for people and long lengths of cables in TN and IT systems.
Standards: UL 1077, IEC/EN 60898-1, IEC/EN 60947-2
UL 1077 interrupt rating: 10 kA

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	6	S301P-B6	3	6	S303P-B6
	8	S301P-B8		8	S303P-B8
	10	S301P-B10		10	S303P-B10
	13	S301P-B13		13	S303P-B13
	16	S301P-B16		16	S303P-B16
	20	S301P-B20		20	S303P-B20
	25	S301P-B25		25	S303P-B25
	32	S301P-B32		32	S303P-B32
	40	S301P-B40		40	S303P-B40
	50	S301P-B50		50	S303P-B50
	63	S301P-B63		63	S303P-B63
2	6	S302P-B6	4	6	S304P-B6
	8	S302P-B8		8	S304P-B8
	10	S302P-B10		10	S304P-B10
	13	S302P-B13		13	S304P-B13
	16	S302P-B16		16	S304P-B16
	20	S302P-B20		20	S304P-B20
	25	S302P-B25		25	S304P-B25
	32	S302P-B32		32	S304P-B32
	40	S302P-B40		40	S304P-B40
	50	S302P-B50		50	S304P-B50
	63	S302P-B63		63	S304P-B63

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S300P-C
UL 1077, CSA 22.2 No. 235


S301P-C


S302P-C


S303P-C


S304P-C

S300P-C characteristics
Function: Protection and control of circuits against overloads and short circuits; protection for people and long lengths of cables in TN and IT systems.
Standards: UL 1077, IEC/EN 60898-1, IEC/EN 60947-2
UL 1077 interrupt rating: 10 kA

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S301P-C0,5	3	0.5	S303P-C0,5
	1	S301P-C1		1	S303P-C1
	1.6	S301P-C1,6		1.6	S303P-C1,6
	2	S301P-C2		2	S303P-C2
	3	S301P-C3		3	S303P-C3
	4	S301P-C4		4	S303P-C4
	6	S301P-C6		6	S303P-C6
	8	S301P-C8		8	S303P-C8
	10	S301P-C10		10	S303P-C10
	13	S301P-C13		13	S303P-C13
	16	S301P-C16		16	S303P-C16
	20	S301P-C20		20	S303P-C20
	25	S301P-C25		25	S303P-C25
	32	S301P-C32		32	S303P-C32
	40	S301P-C40		40	S303P-C40
	50	S301P-C50		50	S303P-C50
	63	S301P-C63		63	S303P-C63
2	0.5	S302P-C0,5	4	0.5	S304P-C0,5
	1	S302P-C1		1	S304P-C1
	1.6	S302P-C1,6		1.6	S304P-C1,6
	2	S302P-C2		2	S304P-C2
	3	S302P-C3		3	S304P-C3
	4	S302P-C4		4	S304P-C4
	6	S302P-C6		6	S304P-C6
	8	S302P-C8		8	S304P-C8
	10	S302P-C10		10	S304P-C10
	13	S302P-C13		13	S304P-C13
	16	S302P-C16		16	S304P-C16
	20	S302P-C20		20	S304P-C20
	25	S302P-C25		25	S304P-C25
	32	S302P-C32		32	S304P-C32
	40	S302P-C40		40	S304P-C40
	50	S302P-C50		50	S304P-C50
	63	S302P-C63		63	S304P-C63

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S300P-D
UL 1077, CSA 22.2 No. 235


S301P-D


S302P-D


S303P-D


S304P-D

S300P-D characteristics
Function: Protection and control of circuits against overloads and short circuits; protection for people and long lengths of cables in TN and IT systems.
Standards: UL 1077, IEC/EN 60898-1, IEC/EN 60947-2
UL 1077 interrupt rating: 10 kA

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S301P-D0,5	3	0.5	S303P-D0,5
	1	S301P-D1		1	S303P-D1
	1.6	S301P-D1,6		1.6	S303P-D1,6
	2	S301P-D2		2	S303P-D2
	3	S301P-D3		3	S303P-D3
	4	S301P-D4		4	S303P-D4
	6	S301P-D6		6	S303P-D6
	8	S301P-D8		8	S303P-D8
	10	S301P-D10		10	S303P-D10
	13	S301P-D13		13	S303P-D13
	16	S301P-D16		16	S303P-D16
	20	S301P-D20		20	S303P-D20
	25	S301P-D25		25	S303P-D25
	32	S301P-D32		32	S303P-D32
	40	S301P-D40		40	S303P-D40
	50	S301P-D50		50	S303P-D50
	63	S301P-D63		63	S303P-D63
2	0.5	S302P-D0,5	4	0.5	S304P-D0,5
	1	S302P-D1		1	S304P-D1
	1.6	S302P-D1,6		1.6	S304P-D1,6
	2	S302P-D2		2	S304P-D2
	3	S302P-D3		3	S304P-D3
	4	S302P-D4		4	S304P-D4
	6	S302P-D6		6	S304P-D6
	8	S302P-D8		8	S304P-D8
	10	S302P-D10		10	S304P-D10
	13	S302P-D13		13	S304P-D13
	16	S302P-D16		16	S304P-D16
	20	S302P-D20		20	S304P-D20
	25	S302P-D25		25	S304P-D25
	32	S302P-D32		32	S304P-D32
	40	S302P-D40		40	S304P-D40
	50	S302P-D50		50	S304P-D50
	63	S302P-D63		63	S304P-D63

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S300P-K
UL 1077, CSA 22.2 No. 235


S301P-K


S302P-K


S303P-K


S304P-K

S300P-K (power) characteristics
Function: Protection and control of circuits like motors. transformers and auxiliary circuits. against overloads and short circuits.

Advantages: No nuisance tripping in the case of functional peak currents up to 10xIn. Depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.
UL 1077 interrupt rating: 10 kA

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.2	S301P-K0.2	3	0.2	S303P-K0.2
	0.3	S301P-K0.3		0.3	S303P-K0.3
	0.5	S301P-K0,5		0.5	S303P-K0,5
	0.75	S301P-K0.75		0.75	S303P-K0.75
	1	S301P-K1		1	S303P-K1
	1.6	S301P-K1,6		1.6	S303P-K1,6
	2	S301P-K2		2	S303P-K2
	3	S301P-K3		3	S303P-K3
	4	S301P-K4		4	S303P-K4
	6	S301P-K6		6	S303P-K6
	8	S301P-K8		8	S303P-K8
	10	S301P-K10		10	S303P-K10
	13	S301P-K13		13	S303P-K13
	16	S301P-K16		16	S303P-K16
	20	S301P-K20		20	S303P-K20
	25	S301P-K25		25	S303P-K25
	32	S301P-K32		32	S303P-K32
	40	S301P-K40		40	S303P-K40
	50	S301P-K50		50	S303P-K50
	63	S301P-K63		63	S303P-K63
2	0.2	S302P-K0.2	4	0.2	S304P-K0.2
	0.3	S302P-K0.3		0.3	S304P-K0.3
	0.5	S302P-K0,5		0.5	S304P-K0,5
	0.75	S302P-K0.75		0.75	S304P-K0.75
	1	S302P-K1		1	S304P-K1
	1.6	S302P-K1,6		1.6	S304P-K1,6
	2	S302P-K2		2	S304P-K2
	3	S302P-K3		3	S304P-K3
	4	S302P-K4		4	S304P-K4
	6	S302P-K6		6	S304P-K6
	8	S302P-K8		8	S304P-K8
	10	S302P-K10		10	S304P-K10
	13	S302P-K13		13	S304P-K13
	16	S302P-K16		16	S304P-K16
	20	S302P-K20		20	S304P-K20
	25	S302P-K25		25	S304P-K25
	32	S302P-K32		32	S304P-K32
	40	S302P-K40		40	S304P-K40
	50	S302P-K50		50	S304P-K50
	63	S302P-K63		63	S304P-K63

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S300P-Z
UL 1077, CSA 22.2 No. 235


S301P-Z


S302P-Z


S303P-Z


S304P-Z

S300P-Z characteristics
Function: Protection and control of electronic circuits against lower and long duration overloads and short circuits.
Standards: UL1077, IEC/EN 60947-2
UL 1077 interrupt rating: 10 kA

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	S301P-Z0,5	3	0.5	S303P-Z0,5
	1	S301P-Z1		1	S303P-Z1
	1.6	S301P-Z1,6		1.6	S303P-Z1,6
	2	S301P-Z2		2	S303P-Z2
	3	S301P-Z3		3	S303P-Z3
	4	S301P-Z4		4	S303P-Z4
	6	S301P-Z6		6	S303P-Z6
	8	S301P-Z8		8	S303P-Z8
	10	S301P-Z10		10	S303P-Z10
	16	S301P-Z16		16	S303P-Z16
	20	S301P-Z20		20	S303P-Z20
	25	S301P-Z25		25	S303P-Z25
	32	S301P-Z32		32	S303P-Z32
	40	S301P-Z40		40	S303P-Z40
	50	S301P-Z50		50	S303P-Z50
	63	S301P-Z63		63	S303P-Z63
2	0.5	S302P-Z0,5	4	0.5	S304P-Z0,5
	1	S302P-Z1		1	S304P-Z1
	1.6	S302P-Z1,6		1.6	S304P-Z1,6
	2	S302P-Z2		2	S304P-Z2
	3	S302P-Z3		3	S304P-Z3
	4	S302P-Z4		4	S304P-Z4
	6	S302P-Z6		6	S304P-Z6
	8	S302P-Z8		8	S304P-Z8
	10	S302P-Z10		10	S304P-Z10
	16	S302P-Z16		16	S304P-Z16
	20	S302P-Z20		20	S304P-Z20
	25	S302P-Z25		25	S304P-Z25
	32	S302P-Z32		32	S304P-Z32
	40	S302P-Z40		40	S304P-Z40
	50	S302P-Z50		50	S304P-Z50
	63	S302P-Z63		63	S304P-Z63

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ST200MTR — ring tongue terminal
Technical features



		ST200MTR
Data acc. to UL1077 / CSA 22.2 No.235	Standards	UL1077 / CSA 22.2 No.235
	Poles	1P, 2P, 3P, 4P for AC 1P, 2P and 4P for DC
	Tripping characteristics	K, Z rated tripping current 1.6 x In (see tripping curve)
	Rated current I_n	0.5 ≤ In ≤ 63A
	Rated frequency f	50/60 and DC (0 Hz)
	Rated insulation voltage Ui	400 V DC (pollution degree 3) 500 V DC (pollution degree 2)
	Overvoltage category	III
	Rated voltage	480Y / 277 V AC 1P: 250 V DC and 2+4P: up to 500 V DC (pollution degree 2)
	Rated interrupting capacity	6 kA AC 10 kA DC
	Application	Suppl. prot. for general use. Application Codes: TC2, OL0, SC: U1
	Reference temperature for tripping characteristics	25 °C

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ST200MTR — ring tongue terminal

K characteristic



ST201MTR-K3



ST202MTR-K0,5



ST203MTR-K1



ST204MTR-K1

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201MTR-K0,5	3	0.5	ST203MTR-K0,5
	1	ST201MTR-K1		1	ST203MTR-K1
	1.6	ST201MTR-K1,6		1.6	ST203MTR-K1,6
	2	ST201MTR-K2		2	ST203MTR-K2
	3	ST201MTR-K3		3	ST203MTR-K3
	4	ST201MTR-K4		4	ST203MTR-K4
	5	ST201MTR-K5		5	ST203MTR-K5
	6	ST201MTR-K6		6	ST203MTR-K6
	8	ST201MTR-K8		8	ST203MTR-K8
	10	ST201MTR-K10		10	ST203MTR-K10
	13	ST201MTR-K13		13	ST203MTR-K13
	15	ST201MTR-K15		15	ST203MTR-K15
	16	ST201MTR-K16		16	ST203MTR-K16
	20	ST201MTR-K20		20	ST203MTR-K20
	25	ST201MTR-K25		25	ST203MTR-K25
	30	ST201MTR-K30		30	ST203MTR-K30
	32	ST201MTR-K32		32	ST203MTR-K32
	35	ST201MTR-K35		35	ST203MTR-K35
	40	ST201MTR-K40		40	ST203MTR-K40
	50	ST201MTR-K50		50	ST203MTR-K50
	60	ST201MTR-K60		60	ST203MTR-K60
	63	ST201MTR-K63		63	ST203MTR-K63
2	0.5	ST202MTR-K0,5	4	0.5	ST204MTR-K0,5
	1	ST202MTR-K1		1	ST204MTR-K1
	1.6	ST202MTR-K1,6		1.6	ST204MTR-K1,6
	2	ST202MTR-K2		2	ST204MTR-K2
	3	ST202MTR-K3		3	ST204MTR-K3
	4	ST202MTR-K4		4	ST204MTR-K4
	5	ST202MTR-K5		5	ST204MTR-K5
	6	ST202MTR-K6		6	ST204MTR-K6
	8	ST202MTR-K8		8	ST204MTR-K8
	10	ST202MTR-K10		10	ST204MTR-K10
	13	ST202MTR-K13		13	ST204MTR-K13
	15	ST202MTR-K15		15	ST204MTR-K15
	16	ST202MTR-K16		16	ST204MTR-K16
	20	ST202MTR-K20		20	ST204MTR-K20
	25	ST202MTR-K25		25	ST204MTR-K25
	30	ST202MTR-K30		30	ST204MTR-K30
	32	ST202MTR-K32		32	ST204MTR-K32
	35	ST202MTR-K35		40	ST204MTR-K35
	40	ST202MTR-K40		50	ST204MTR-K40
	50	ST202MTR-K50		60	ST204MTR-K50
	60	ST202MTR-K60		63	ST204MTR-K60
	63	ST202MTR-K63			

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ST200MTR — ring tongue terminal

K characteristic — DC



ST201MTR-K1 DC



ST202MTR-K1 DC



ST204MTR-K1 DC

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201MTR-K0,5 DC	4	0.5	ST204MTR-K0,5 DC
	1	ST201MTR-K1 DC		1	ST204MTR-K1 DC
	1.6	ST201MTR-K1,6 DC		1.6	ST204MTR-K1,6 DC
	2	ST201MTR-K2 DC		2	ST204MTR-K2 DC
	3	ST201MTR-K3 DC		3	ST204MTR-K3 DC
	4	ST201MTR-K4 DC		4	ST204MTR-K4 DC
	5	ST201MTR-K5 DC		5	ST204MTR-K5 DC
	6	ST201MTR-K6 DC		6	ST204MTR-K6 DC
	8	ST201MTR-K8 DC		8	ST204MTR-K8 DC
	10	ST201MTR-K10 DC		10	ST204MTR-K10 DC
	13	ST201MTR-K13 DC		13	ST204MTR-K13 DC
	15	ST201MTR-K15 DC		15	ST204MTR-K15 DC
	16	ST201MTR-K16 DC		16	ST204MTR-K16 DC
	20	ST201MTR-K20 DC		20	ST204MTR-K20 DC
	25	ST201MTR-K25 DC		25	ST204MTR-K25 DC
	30	ST201MTR-K30 DC		30	ST204MTR-K30 DC
	32	ST201MTR-K32 DC		32	ST204MTR-K32 DC
	35	ST201MTR-K35 DC		35	ST204MTR-K35 DC
	40	ST201MTR-K40 DC		40	ST204MTR-K40 DC
	50	ST201MTR-K50 DC		50	ST204MTR-K50 DC
	60	ST201MTR-K60 DC		60	ST204MTR-K60 DC
	63	ST201MTR-K63 DC		63	ST204MTR-K63 DC
2	0.5	ST202MTR-K0,5 DC			
	1	ST202MTR-K1 DC			
	1.6	ST202MTR-K1,6 DC			
	2	ST202MTR-K2 DC			
	3	ST202MTR-K3 DC			
	4	ST202MTR-K4 DC			
	5	ST202MTR-K5 DC			
	6	ST202MTR-K6 DC			
	8	ST202MTR-K8 DC			
	10	ST202MTR-K10 DC			
	13	ST202MTR-K13 DC			
	15	ST202MTR-K15 DC			
	16	ST202MTR-K16 DC			
	20	ST202MTR-K20 DC			
	25	ST202MTR-K25 DC			
	30	ST202MTR-K30 DC			
	32	ST202MTR-K32 DC			
	35	ST202MTR-K35 DC			
	40	ST202MTR-K40 DC			
	50	ST202MTR-K50 DC			
	60	ST202MTR-K60 DC			
	63	ST202MTR-K63 DC			

Please consider polarity as note above the codes.

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ST200MTR — ring tongue terminal
Z characteristic


ST201MTR-Z1


ST202MTR-Z1


ST203MTR-Z1


ST204MTR-Z1

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201MTR-Z0,5	3	0.5	ST203MTR-Z0,5
	1	ST201MTR-Z1		1	ST203MTR-Z1
	1.6	ST201MTR-Z1,6		1.6	ST203MTR-Z1,6
	2	ST201MTR-Z2		2	ST203MTR-Z2
	3	ST201MTR-Z3		3	ST203MTR-Z3
	4	ST201MTR-Z4		4	ST203MTR-Z4
	5	ST201MTR-Z5		5	ST203MTR-Z5
	6	ST201MTR-Z6		6	ST203MTR-Z6
	8	ST201MTR-Z8		8	ST203MTR-Z8
	10	ST201MTR-Z10		10	ST203MTR-Z10
	15	ST201MTR-Z15		15	ST203MTR-Z15
	16	ST201MTR-Z16		16	ST203MTR-Z16
	20	ST201MTR-Z20		20	ST203MTR-Z20
	25	ST201MTR-Z25		25	ST203MTR-Z25
	30	ST201MTR-Z30		30	ST203MTR-Z30
	32	ST201MTR-Z32		32	ST203MTR-Z32
	35	ST201MTR-Z35		35	ST203MTR-Z35
	40	ST201MTR-Z40		40	ST203MTR-Z40
	50	ST201MTR-Z50		50	ST203MTR-Z50
	60	ST201MTR-Z60		60	ST203MTR-Z60
	63	ST201MTR-Z63		63	ST203MTR-Z63
2	0.5	ST202MTR-Z0,5	4	0.5	ST204MTR-Z0,5
	1	ST202MTR-Z1		1	ST204MTR-Z1
	1.6	ST202MTR-Z1,6		1.6	ST204MTR-Z1,6
	2	ST202MTR-Z2		2	ST204MTR-Z2
	3	ST202MTR-Z3		3	ST204MTR-Z3
	4	ST202MTR-Z4		4	ST204MTR-Z4
	5	ST202MTR-Z5		5	ST204MTR-Z5
	6	ST202MTR-Z6		6	ST204MTR-Z6
	8	ST202MTR-Z8		8	ST204MTR-Z8
	10	ST202MTR-Z10		10	ST204MTR-Z10
	15	ST202MTR-Z15		15	ST204MTR-Z15
	16	ST202MTR-Z16		16	ST204MTR-Z16
	20	ST202MTR-Z20		20	ST204MTR-Z20
	25	ST202MTR-Z25		25	ST204MTR-Z25
	30	ST202MTR-Z30		30	ST204MTR-Z30
	32	ST202MTR-Z32		32	ST204MTR-Z32
	35	ST202MTR-Z35		35	ST204MTR-Z35
	40	ST202MTR-Z40		40	ST204MTR-Z40
	50	ST202MTR-Z50		50	ST204MTR-Z50
	60	ST202MTR-Z60		60	ST204MTR-Z60
	63	ST202MTR-Z63		63	ST204MTR-Z63

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ST200MTR — ring tongue terminal

Z characteristic — DC



ST201MTR-Z1 DC



ST202MTR-Z1 DC



ST204MTR-Z1 DC

Number of poles	Rated current I_n A	Cat. no.	Number of poles	Rated current I_n A	Cat. no.
1	0.5	ST201MTR-Z0,5 DC	4	0.5	ST204MTR-Z0,5 DC
	1	ST201MTR-Z1 DC		1	ST204MTR-Z1 DC
	1.6	ST201MTR-Z1,6 DC		1.6	ST204MTR-Z1,6 DC
	2	ST201MTR-Z2 DC		2	ST204MTR-Z2 DC
	3	ST201MTR-Z3 DC		3	ST204MTR-Z3 DC
	4	ST201MTR-Z4 DC		4	ST204MTR-Z4 DC
	5	ST201MTR-Z5 DC		5	ST204MTR-Z5 DC
	6	ST201MTR-Z6 DC		6	ST204MTR-Z6 DC
	8	ST201MTR-Z8 DC		8	ST204MTR-Z8 DC
	10	ST201MTR-Z10 DC		10	ST204MTR-Z10 DC
	15	ST201MTR-Z15 DC		15	ST204MTR-Z15 DC
	16	ST201MTR-Z16 DC		16	ST204MTR-Z16 DC
	20	ST201MTR-Z20 DC		20	ST204MTR-Z20 DC
	25	ST201MTR-Z25 DC		25	ST204MTR-Z25 DC
	30	ST201MTR-Z30 DC		30	ST204MTR-Z30 DC
	32	ST201MTR-Z32 DC		32	ST204MTR-Z32 DC
	35	ST201MTR-Z35 DC		35	ST204MTR-Z35 DC
	40	ST201MTR-Z40 DC		40	ST204MTR-Z40 DC
	50	ST201MTR-Z50 DC		50	ST204MTR-Z50 DC
	60	ST201MTR-Z60 DC		60	ST204MTR-Z60 DC
	63	ST201MTR-Z63 DC		63	ST204MTR-Z63 DC
2	0.5	ST202MTR-Z0,5 DC			
	1	ST202MTR-Z1 DC			
	1.6	ST202MTR-Z1,6 DC			
	2	ST202MTR-Z2 DC			
	3	ST202MTR-Z3 DC			
	4	ST202MTR-Z4 DC			
	5	ST202MTR-Z5 DC			
	6	ST202MTR-Z6 DC			
	8	ST202MTR-Z8 DC			
	10	ST202MTR-Z10 DC			
	15	ST202MTR-Z15 DC			
	16	ST202MTR-Z16 DC			
	20	ST202MTR-Z20 DC			
	25	ST202MTR-Z25 DC			
	30	ST202MTR-Z30 DC			
	32	ST202MTR-Z32 DC			
	35	ST202MTR-Z35 DC			
	40	ST202MTR-Z40 DC			
	50	ST202MTR-Z50 DC			
	60	ST202MTR-Z60 DC			
	63	ST202MTR-Z63 DC			

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Accessories

ST200M, S200MR and S200MUC — UL 1077, CSA 22.2 No. 235



S2C-H6...

Auxiliary contacts

Description (for field mounting: right side)	Cat. no.
Auxiliary contact 1 CO	S2C-H6R
Auxiliary contact 1 NO/1 NC	S2C-H6-11R
Auxiliary contact 2 NO	S2C-H6-20R
Auxiliary contact 2 NC	S2C-H6-02R



S2C-S/H6R

Bell alarm — signal contact

Description	Cat. no.
For field mounting: right side	S2C-S/H6R



S2C-A

Shunt trip

Description (for field mounting: right side)	Cat. no.
A1-12-60 V AC (12–60 V DC)	S2C-A1
A2-110-415 V AC (110–250 V DC)	S2C-A2



S2C-UA

Under-voltage release

Description (for field mounting: right side)	Cat. no.
12 V DC	S2C-UA12DC
24 V AC or V DC	S2C-UA24AC or S2C-UA24DC
48 V AC or V DC	S2C-UA48AC or S2C-UA48DC
110 V AC or V DC	S2C-UA110AC or S2C-UA110DC
230 V AC or V DC	S2C-UA230AC or S2C-UA230DC
400 V AC	S2C-UA400AC



SA1

Locking device

Description	Cat. no.
Locking device, 3 mm	SA1
Padlock with two keys	SA2



SA2



S2C-H

Bottom-fitted auxiliary contact

Description	Cat. no.
Auxiliary contact 1 NC	S2C-H01
Auxiliary contact 1 NO	S2C-H10

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Busbars PS...CB and accessories according to UL 508
Ordering data

Busbars suitable for cutting

Phases	mm²	No. of pins	Weight 1 piece kg	Pack unit pc.	Cat. no.
1-phase busbars, pin distance 17.6 mm, end caps PS-END 1 CB					
1	18	57	0.289	10	PS 1/57/18 CB
1	25	57	0.360	10	PS 1/57/25 CB
1-phase busbars, connection of 1-pole devices with auxiliary, end caps PS-END 1 CB					
1	18	37	0.254	10	2CDL210508R3718
1	25	37	0.310	10	2CDL210508R3725
2-phase busbars, pin distance 17.6 mm, end caps PS-END 3 CB					
2	18	56	0.639	10	PS 2/56/18 CB
2	25	56	0.795	10	PS 2/56/25 CB
2-phase busbars, connection of 2-pole devices with auxiliary, end caps PS-END 3 CB					
2	18	46	0.672	10	PS 2/46/18 H CB
2	25	46	0.782	10	PS 2/46/25 H CB
3-phase busbars, pin distance 17.6 mm, end caps PS-END 3					
3	18	57	0.929	10	PS 3/57/18 CB
3	25	57	1.026	10	PS 3/57/25 CB
3-phase busbars, connection of 3-pole devices with auxiliary, end caps PS-END 3 CB					
3	18	48	0.788	10	PS 3/48/18 H CB
3	25	48	0.974	10	PS 3/48/25 H CB
3-phase busbars, connection of 1-pole devices with auxiliary, end caps PS-END 3 CB					
3	18	39	0.794	10	PS 3/39/18 H CB
3	25	39	0.974	10	PS 3/39/25 H CB

Accessories

Description	Weight 1 piece kg	Pack unit pc.	Cat. no.
Electric shock-protection cap			
	0.008	10	BSK CB
Feeder terminals with pin contact			
for use with MCB and 1-phase busbar	0.025	25	AST 35/15-2 CB
for use with MCB and 2-/3-phase busbar	0.032	10	AST 35/38-2 CB
for use with E90 and 2-/3-phase busbar	0.032	10	AST 35/38-1 CB
for use with E90 and 1-phase busbar	0.025	25	AST 35/15-1 CB
Single-pole terminal, can be mounted side by side, feed to the busbar pin			
	0.032	50	SZ ESK SP
End caps			
for use with PS 1...CB	0.001	50	PS-END 1 CB
for use with PS 2...CB and PS3...CB	0.002	50	PS-END 3 CB

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S804U-PVS5

Ground fault detector interrupter for photovoltaic systems



S804U-PVS5

Ordering information

Description	Rated current A	Cat. no.
For GFDI applications	5	S804U-PVS5

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S803W-SCL-SR

UL short circuit current limiter, self-resetting



S803W-SCL-SR

UL version short circuit current limiter, self-resetting, 3 pole

Description	Cat. no.
32 A self-resetting current limiter	S803W-SCL32-SR
63 A self-resetting current limiter	S803W-SCL63-SR
100 A self-resetting current limiter	S803W-SCL100-SR

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EPD24
Electronic protection devices

Electronic protection devices

Rated current I_N A	Weight 1 piece kg	Packing unit	Cat. no.
0.5	0.065	4	EPD24-TB-101-0.5A
1	0.065	4	EPD24-TB-101-1A
2	0.065	4	EPD24-TB-101-2A
3	0.065	4	EPD24-TB-101-3A
4	0.065	4	EPD24-TB-101-4A
6	0.065	4	EPD24-TB-101-6A
8	0.065	4	EPD24-TB-101-8A
10	0.065	4	EPD24-TB-101-10A
12	0.065	4	EPD24-TB-101-12A

Accessories

Description	Weight 1 piece kg	Packing unit	Cat. no.
Busbars for LINE+ and 0 V, grey insulation, length 500 mm[1]	0.20	10	EPD-BB500
Signal bars for auxiliary contacts, grey insulation, length 21 mm	0.04	10	EPD-SB21

[1] Ampacity at one line entry Imax = 50 A (Recommendation: mid line entry)
Ampacity at two line entries Imax = 63 A

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F200 series A type
Technical features



				F200 AC	F200 A
Electrical features	Standards			IEC/EN 61008-1; IEC/EN 61008-2-1, UL 1053[1]	
	Type (wave form of the earth leakage sensed)			AC	A
	Poles			2P[6], 4P (for 125 A only 4P)	
	Rated current In		A	16, 25, 40, 63, 80, 100, 125	
	Rated sensitivity IΔn		A	0.01-0.03-0.1-0.3-0.5	
	Rated voltage Ue	IEC	V	230/400 - 240/415	
		UL/CSA	V	480Y/277 (up to 100 A)	
	Insulation voltage Ui		V	500	
	Operating voltage of circuit test Ut	IEC	V	In ≤ 100; Right neutral: 110 (170 for 30mA) - 254[5]; Left neutral: 195 (250 for 30 mA) - 440[5] In = 125 A; Right neutral: 185 (150 for 30 mA) - 440 (250 for 30 mA)[5]; Left neutral: 195 (250 for 30 mA) - 440	
		UL/CSA	V	In ≤ 100; Right neutral: 110 (170 for 30mA) - 277[5]; Left neutral: 195 (250 for 30 mA) - 480[4,5]	
	Rated frequency		Hz	50...60	
	Rated conditional short-circuit current Inc=IΔ[3]	SCPD - fuse gG 100 A	kA	10 (for 125 A fuse is gG 125 A)	
	Rated residual breaking capacity IΔm=Im		kA	1 (1.25 for 125 A)	
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4	
	Dielectric test voltage at ind. freq. for 1 min.		kV	2.5	
	Overvoltage category			III, disconnector abilities	
	Surge current resistance (wave 8/20)		A	NA	
Mechanical features	Toggle			blue sealable in ON-OFF position	
	Contact position indicator (CPI)			yes	
	Electrical life			10000 (2000 for 125 A)	
	Mechanical life			20000 (5000 for 125 A)	
	Protection degree	housing		IP4X	
		terminals		IP2X	
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%	
	Ambient temperature (with daily average ≤ +35 °C)	IEC	°C	-25...+55 (-25...+40 for 125 A)	
	Storage temperature		°C	-40...+70	
Installation	Terminal type			failsafe bi-directional cylinder-lift terminal at top and bottom (shock protected) (cage for In > 63 A)[2]	
	Terminal size top/bottom for cable	IEC	mm^2	25/25 (35/35 single slot terminal for In > 63 A)	
		UL/CSA	AWG	18-4 (up to 63 A)	
	Terminal size top/bottom for busbar	IEC	mm^2	10/10 (not for In = 80-100 A)	
		UL/CSA	AWG	18-8 (up to 63 A)	
	Tightening torque	IEC	Nm	2.8 (3 for In = 125 A)	
		UL/CSA	in-lbs.	25 (up to 63 A)	
	Tool			Nr. 2 Pozidriv	
	Mounting			on DIN rail EN 60715 (35 mm) by means of fast clip device	
	Mounting position			Any	
	Connection			from top and bottom	
	Withdrawal from busbar			it is possible without using any tools only from the bottom (not for 125 A)	
Dimensions and weight	Dimensions (H x D x W)	2P	mm	85 x 69 x 35	
		4P	mm	85 x 69 x 70 (85 x 69.5 x 72 for 125 A)	
	Weight	2P	g	200	
		4P	g	350 (380 for In = 80 and 100 A and 460 for In = 125A)	
Combination with auxiliary elements	Combinable with:	auxiliary contact		yes (no for 125 A)	
		signal contact/ auxiliary switch		yes	
		shunt trip		yes (no for 125 A)	
		undervoltage release		yes (no for 125 A)	

[1]Ground-fault sensing and relaying equipment-component (up to 63 A)
[2]prior to connection of aluminum conductors (≥ 4 mm^2) ensure that their contact points are cleaned, brushed and coated with grease
[3]for S700-E/K 100A, S750-E 63A, S750DR-E/K 63A and other SCPD coordination values see Chapter 3 of Solutions for electrical distribution in buildings - technical details
[4]F200 left neutral has not the UL certification and the UL mark
[5]Only for versions with marking according to EN 61008-1; EN 61008-2-1
[6]Neutral conductor can be wired anywhere for 2P devices

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F200 series A type
Technical features



				F200 A AP-R	F200 A S	F200 A 110V
Electrical features	Standards			IEC/EN 61008-1; IEC/EN 61008-2-1, UL 1053[1]		IEC 61008-1; IEC 61008-2-1; UL 1053
	Type (wave form of the earth leakage sensed)			A	A	A
	Poles			2P[6], 4P (for 125 A only 4P)		2P, 4P
	Rated current In		A	25, 40, 63, 80, 100, 125	40, 63, 80, 100, 125	25, 40, 63, 80, 100
	Rated sensitivity IΔn		A	0.03	0.1-0.3-0.5-1	0.03
	Rated voltage Ue	IEC	V	0.01-0.03-0.1-0.3-0.5		
		UL/CSA	V	230/400 - 240/415		-
	Insulation voltage Ui		V	500		
	Operating voltage of circuit test Ut	IEC	V	In ≤ 100; Right neutral: 110 (170 for 30mA) - 254[5]; Left neutral: 195 (250 for 30 mA) - 440[5] In = 125 A; Right neutral: 185 (150 for 30 mA) - 440 (250 for 30 mA)[5]; Left neutral: 195 (250 for 30 mA) - 440		110-254
		UL/CSA	V	In ≤ 100; Right neutral: 110 (170 for 30mA) - 277[5]; Left neutral: 195 (250 for 30 mA) - 480[4,5]		
	Rated frequency		Hz	50...60		
	Rated conditional short-circuit current Inc=IΔ[3]	SCPD - fuse gG 100 A	kA	10 (for 125 A fuse is gG 125 A		
	Rated residual breaking capacity IΔm=Im		kA	1 (1.25 for 125 A)		
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4		
	Dielectric test voltage at ind. freq. for 1 min.		kV	2.5		
	Overvoltage category			III, disconnector abilities		
	Surge current resistance (wave 8/20)		A	3000	5000	NA
Mechanical features	Toggle			blue sealable in ON-OFF position		
	Contact position indicator (CPI)			yes		
	Electrical life			10000 (2000 for 125 A)		10000
	Mechanical life			20000 (5000 for 125 A)		20000
	Protection degree	housing		IP4X		
		terminals		IP2X		
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%		
	Ambient temperature (with daily average ≤ +35 °C)	IEC	°C	-25...+55 (-25...+40 for 125 A)		-25...+55
	Storage temperature		°C	-40...+70		
Installation	Terminal type			failsafe bi-directional cylinder-lift terminal at top and bottom (shock protected) (cage for In > 63 A)[2]		
	Terminal size top/bottom for cable	IEC	mm²	25/25 (35/35 single slot terminal for In > 63 A)		
		UL/CSA	AWG	18-4 (up to 63 A)		-
	Terminal size top/bottom for busbar	IEC	mm²	10/10 (not for In = 80-100 A)		
		UL/CSA	AWG	18-8 (up to 63 A)		-
	Tightening torque	IEC	Nm	2.8 (3 for In = 125 A)		2.8
		UL/CSA	in-lbs.	25 (up to 63 A)		-
	Tool			Nr. 2 Pozidriv		
	Mounting			on DIN rail EN 60715 (35 mm) by means of fast clip device		
	Mounting position			Any		
	Connection			from top and bottom		
	Withdrawal from busbar			it is possible without using any tools only from the bottom (not for 125 A)		
Dimensions and weight	Dimensions (H x D x W)	2P	mm	85 x 69 x 35		
		4P	mm	85 x 69 x 70 (85 x 69.5 x 72 for 125 A)		
	Weight	2P	g	200		
		4P	g	350 (380 for In = 80 and 100 A and 460 for In = 125A)		
Combination with auxiliary elements	Combinable with:	auxiliary contact		yes (no for 125 A)		
		signal contact/auxiliary switch		yes		
		shunt trip		yes (no for 125 A)		
		undervoltage release		yes (no for 125 A)		

[1]Ground-fault sensing and relaying equipment-component (up to 63 A)
[2]prior to connection of aluminum conductors (≥ 4 mm²) ensure that their contact points are cleaned, brushed and coated with grease
[3]for S700-E/K 100A, S750-E 63A, S750DR-E/K 63A and other SCPD coordination values see Chapter 3 of Solutions for electrical distribution in buildings - technical details
[4]F200 left neutral has not the UL certification and the UL mark
[5]Only for versions with marking according to EN 61008-1; EN 61008-2-1
[6]Neutral conductor can be wired anywhere for 2P device

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F200 series A type
30 mA sensitivity



F202 110V

Number of poles	Rated residual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
2	30	25	F202 A-25/0.03 110V	0.225	1/6
		40	F202 A-40/0.03 110V	0.225	1/6
		63	F202 A-63/0.03 110V	0.225	1/6
		80	F202 A-80/0.03 110V	0.225	1/6
		100	F202 A-100/0.03 110V	0.225	1/6



F204 110V

Number of poles	Rated residual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
4	30	25	F204 A-25/0.03 110V	0.375	1/3
		40	F204 A-40/0.03 110V	0.375	1/3
		63	F204 A-63/0.03 110V	0.375	1/3
		80	F204 A-80/0.03 110V	0.405	1/3
		100	F204 A-100/0.03 110V	0.405	1/3

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F200 series A type



F202

F 200 A type

Number of poles	Ratedresidual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
2	10	16	F202 A-16/0.01	0.225	1/6
	100	25	F202 A-25/0.1	0.225	1/6
		40	F202 A-40/0.1	0.225	1/6
		63	F202 A-63/0.1	0.225	1/6
		80	F202 A-80/0.1	0.225	1/6
		100	F202 A-100/0.1	0.225	1/6
	300	25	F202 A-25/0.3	0.225	1/6
		40	F202 A-40/0.3	0.225	1/6
		63	F202 A-63/0.3	0.225	1/6
		80	F202 A-80/0.3	0.225	1/6
		100	F202 A-100/0.3	0.225	1/6
	500	25	F202 A-25/0.5	0.225	1/6
		40	F202 A-40/0.5	0.225	1/6
		63	F202 A-63/0.5	0.225	1/6
		80	F202 A-80/0.5	0.225	1/6
		100	F202 A-100/0.5	0.225	1/6

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F200 series A type



F204



F204 125 A

Number of poles	Rated residual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
4	100	25	F204 A-25/0.1	0.375	1/3
		40	F204 A-40/0.1	0.375	1/3
		63	F204 A-63/0.1	0.375	1/3
		80	F204 A-80/0.1	0.405	1/3
		100	F204 A-100/0.1	0.405	1/3
	300	25	F204 A-25/0.3	0.375	1/3
		40	F204 A-40/0.3	0.375	1/3
		63	F204 A-63/0.3	0.375	1/3
		80	F204 A-80/0.3	0.405	1/3
		100	F204 A-100/0.3	0.405	1/3
	500	25	F204 A-25/0.5	0.375	1/3
		40	F204 A-40/0.5	0.375	1/3
		63	F204 A-63/0.5	0.375	1/3
		80	F204 A-80/0.5	0.405	1/3
		100	F204 A-100/0.5	0.405	1/3

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F200 series A type
AP-R



F202

F 200 AP-R, A type
Short-term delayed tripping. Pulse-current resistant up to 3000 A. Short-term delay 10 ms.

Number of poles	Ratedresidual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
2	30	25	F202 A-25/0.03 AP-R	0.225	1/6
		40	F202 A-40/0.03 AP-R	0.225	1/6
		63	F202 A-63/0.03 AP-R	0.225	1/6
		80	F202 A-80/0.03 AP-R	0.225	1/6
		100	F202 A-100/0.03 AP-R	0.225	1/6



F204

Number of poles	Ratedresidual current IΔn mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
4	30	25	F204 A-25/0.03 AP-R	0.375	1/3
		40	F204 A-40/0.03 AP-R	0.375	1/3
		63	F204 A-63/0.03 AP-R	0.375	1/3
		80	F204 A-80/0.03 AP-R	0.405	1/3
		100	F204 A-100/0.03 AP-R	0.405	1/3

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F200 series A type
Selective



F202

F 200 A selective type

Number of poles	Ratedresidual current I∆n mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
2	100	40	F202 A S-40/0.1	0.225	1/6
		63	F202 A S-63/0.1	0.225	1/6
		100	F202 A S-100/0.1	0.225	1/6
	300	40	F202 A S-40/0.3	0.225	1/6
		63	F202 A S-63/0.3	0.225	1/6
		100	F202 A S-100/0.3	0.225	1/6
	500	40	F202 A S-40/0.5	0.225	1/6
		63	F202 A S-63/0.5	0.225	1/6
		100	F202 A S-100/0.5	0.225	1/6



F204

Number of poles	Ratedresidual current I∆n mA	Rated current	Order details	Weight 1 piece	Pack unit
		In A	Type code	kg	pc.
4	100	40	F204 A S-40/0.1	0.375	1/3
		63	F204 A S-63/0.1	0.375	1/3
		100	F204 A S-100/0.1	0.405	1/3
	300	40	F204 A S-40/0.3	0.375	1/3
		63	F204 A S-63/0.3	0.375	1/3
		100	F204 A S-100/0.3	0.405	1/3
		125	F204 A S-125/0.3	0.500	1
	500	40	F204 A S-40/0.5	0.375	1/3
		63	F204 A S-63/0.5	0.375	1/3
		100	F204 A S-100/0.5	0.405	1/3
		125	F204 A S-125/0.5	0.500	1

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DS201UL RCBO
Technical features

	Standards			**UL 1053, UL 1077,IEC 61009-1, IEC 61009-2-1**
Electrical features	Type (wave form of the earth leakage sensed)		–	A
	Number of poles		–	1P + N
	Rated current In		A	6 ≤ In ≤ 40
	Rated sensitivity IΔn		A	0.03
	Rated voltage Ue		V	230-240
	Insulation voltage Ui		V	500 V AC
	Overvoltage category		–	III
	Pollution degree		–	2
	Operating voltage of circuit test Ut		V	110 – 277
	Rated frequency		Hz	50/60
	Rated breaking capacity acc. to To UL 1053, IEC 61009-1, IEC 61009-2-1	Icn	A	6 000
	Rated breaking capacity acc. to IEC 60947-2	ultimate Icu	kA	10
		service Ics	kA	7.5
	Rated residual breaking capacity IΔm according to IEC 61009-1	IΔm	A	6 000
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4 kV
	Dielectric test voltage at ind. freq. for 1 min.		kV	2 kV (50 / 60Hz, 1 min.)
	Thermomagnetic release - characteristic	B: 3 In ≤ In ≤ 5 In	–	■
		C: 5 In ≤ In ≤ 10 In	–	■
		K: 10 In < = In >= 14 In	–	■
	Rated residual breaking capacity IΔm		A	6 000
	Surge current resistance (wave 8/20 µs)		–	NA
Mechanical features	Housing		–	Insulation group I - II, RAL 7035
	Toggle		–	Insulation group II, Black RAL 9005, sealable in ON-OFF positions
	Contact position indication		–	Green/Red Window
	Earth fault trip indication		–	Blue flag on toggle
	Electrical life		operations	10000
	Mechanical life		operations	20000
	Protection degree acc. to EN 60529	housing	–	IP4X
		terminals	–	IP2X
	Shock resistance acc. to IEC/EN 60068-2-27			25g - 2 shocks - 13ms
	Vibration resistance acc. to IEC/EN 60068-2-6		–	0.1 mm or 1 g - 20 cycles at 5…150…5 Hz
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C / RH	28 cycles with 55°C/90-96% and 25°C/95-100%
	Reference temperature for setting of thermal element		°C / °F	30 / 86
	Ambient temperature (with daily average ≤ +35 °C)		°C / °F	-25…+55 / -13…+131
	Storage temperature		°C / °F	-40…+70 / -40…+158
Installation	Terminal type	top / bottom	–	Failsafe bi-directional cylinder-lift terminal (shock protected)
	Terminal size for solid cables	top / bottom	mm^2 / AWG	25/25 / 10/10
	Terminal size for stranded cables	top / bottom	mm^2 / AWG	16/16 / 6/6
	These terminals are not suitable for copper compact stranded conductors			
	Terminal size for busbars	top / bottom	mm^2 / AWG	10/8
	Tightening torque	top / bottom	Nm / in.lb	2.8 / 24.5
	Stripping length of the cable		mm / in	12 / 0.5
	Mounting		–	on DIN rail EN 60715 (35mm) by means of mounting clip
	Mounting position		–	Any
	Supply from		–	Top/Bottom terminals
Dimensions and weight	Dimensions (H x D x W)		mm / in	85 x 69 x 35 / 3.34 x 2.71 x 1.37
	Weight		g / lb	200 / 0.44
Combination with auxiliary elements	Combinable with accessories and auxiliaries	Auxiliary contact	–	yes
		Signal contact / auxiliary contact	–	yes
		Shunt trip	–	yes
		Auxiliary contact for bottom fitting	–	yes
		Undervoltage release	–	yes
		Overvoltage release	–	yes
		Motor operating device	–	yes

N.B The combination is mechanically compatible with but no UL approved.

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DS201UL RCBO


DS201 UL

DS201 UL 6000 **A** **type, B characteristic**
Function: protection of end user single-phase circuits against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contact and additional protection against direct contact (IΔn=30 mA).

This particular series of devices is UL & CSA approved and is a supplementary protector.

Application: residential, commercial, industrial.
Standard: UL 1053 & 1077, CSA C22.2 N0. 144, CSA C22.2 N0. 235

No. of poles	Rated residual current IΔn mA	Rated current	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
		In A	EAN	Type code	Order code		kg	pc.
1+N	30	6	577614	DS201 B6 A30 UL	2CSR255187R1065	–	0.2	1
		10	565819	DS201 B10 A30 UL	2CSR255187R1105	–	0.2	1
		13	590712	DS201 B13 A30 UL	2CSR255187R1135	–	0.2	1
		16	578918	DS201 B16 A30 UL	2CSR255187R1165	–	0.2	1
		20	567170	DS201 B20 A30 UL	2CSR255187R1205	–	0.2	1
		30	576617	DS201 B30 A30 UL	2CSR255187R1305	–	0.2	1
		32	564812	DS201 B32 A30 UL	2CSR255187R1325	–	0.2	1
		35	588313	DS201 B35 A30 UL	2CSR255187R1355	–	0.2	1
		40	576518	DS201 B40 A30 UL	2CSR255187R1405	–	0.2	1


DS201 UL

DS201 UL 6000 **A** **type, C characteristic**
Function: protection of end user single-phase circuits against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contact and additional protection against direct contact (IΔn=30 mA).

This particular series of devices is UL & CSA approved and is a supplementary protector.

Application: residential, commercial, industrial.
Standard: UL 1053 & 1077, CSA C22.2 N0. 144, CSA C22.2 N0. 235

No. of poles	Rated residual current IΔn mA	Rated current	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
		In A	EAN	Type code	Order code		kg	pc.
1+N	30	6	588511	DS201 C6 A30 UL	2CSR255187R1064	–	0.2	1
		10	576716	DS201 C10 A30 UL	2CSR255187R1104	–	0.2	1
		13	564911	DS201 C13 A30 UL	2CSR255187R1134	–	0.2	1
		16	589518	DS201 C16 A30 UL	2CSR255187R1164	–	0.2	1
		20	577713	DS201 C20 A30 UL	2CSR255187R1204	–	0.2	1
		30	590811	DS201 C30 A30 UL	2CSR255187R1304	–	0.2	1
		32	579014	DS201 C32 A30 UL	2CSR255187R1324	–	0.2	1
		35	567219	DS201 C35 A30 UL	2CSR255187R1354	–	0.2	1
		40	589419	DS201 C40 A30 UL	2CSR255187R1404	–	0.2	1

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DS201UL RCBO



DS201 UL

DS201 UL 6000 **A** **type, K characteristic**
Function: protection of end user single-phase circuits against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contact and additional protection against direct contact (IΔn=30 mA).

This particular series of devices is UL & CSA approved and is a supplementary protector.

Application: residential, commercial, industrial.
Standard: UL 1053 & 1077, CSA C22.2 N0. 144, CSA C22.2 N0. 235

No. of poles	Rated residual current IΔn mA	Rated current	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
		In A	EAN	Type code	Order code		kg	pc.
1+N	30	10	564713	DS201 K10 A30 UL	2CSR255187R1107	–	0.2	1
		13	589310	DS201 K13 A30 UL	2CSR255187R1137	–	0.2	1
		16	577515	DS201 K16 A30 UL	2CSR255187R1167	–	0.2	1
		20	565710	DS201 k20 A30 UL	2CSR255187R1207	–	0.2	1

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E90 fuse holders
Technical features

Type		**E 90/32**	**E 90/32 PV 1000 V**	**E 90/32 PV 1500 V**
Rated current	[A]	32	32	30
Rated voltage	[V]	690	1000	1500 V DC
Type of current		AC/DC	DC	DC
Fuse		10.3 x 38	10.3 x 38	10x30
Rated frequency	[Hz]	50 - 60	–	6
Tightening torque	[Nm]	PZ2 2 - 2.5	PZ2 2 - 2.5	PZ2 18-22 lb-in
Protection degree		IP20	IP20	IP20
Terminals section	[mm²]	25	25	–
Cross section rigid copper conductors	[AWG]	16÷10	not forseen	1 wire: 16-10 AWG
Cross section stranded copper conductors	[AWG]	16÷3	8÷3	1 wire: 0.75 -25 (18-4 AWG) 2 wires: 18-6 AWG
Cable temperature	[°C]		[°C] CU 60, 75, 90	max 90 (acc. UL)
Padlockable (when open)		•	•	
Sealable (when closed)		•	•	

Reference Standard		**E 90/32**	**E 90/32 PV 1000 V**	**E 90/32 PV 1500 V**
UL 4248-1		•		
UL 4248-4				
UL 4248-8				
UL 4248-18			•	•

Approvals		**E 90/32**	**E 90/32 PV 1000 V**	**E 90/32 PV 1500 V**
cULus				
UL			•	•
cURus		•		
CSA				

**** IP20 also as standalone device installed on DIN rail, with respect to cables with a cross-section area ≥ 10 mm²

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E90 fuse holders
Technical features

Type		E 90/50	E 90/125	E 90/30 CC	E 90/30 J	E 90/60 J
Rated current	[A]	50	125	30	30	360
Rated voltage	[V]	800	800	600	600	600
Type of current		AC/DC	AC/DC	AC/DC	AC/DC	AC/DC
Fuse		14 x 51	22 x 58	Class CC 10.4 x 38	Class J 21 x 57	Class J 27 x 60
Rated frequency	[Hz]	50 - 60	50 - 60	60	60	60
Tightening torque	[Nm]	PZ2 3 - 3.5	PZ2 3.5 - 4	PZ2 2 - 2.5	PZ2 3.5 - 4	PZ2 3.5 - 4
Protection degree		IP20 ****	IP20 ****	IP20	n.a.	n.a.
Terminals section	[mm^2]	35	50	25	50	50
Cross section rigid copper conductors	[AWG]	14÷10	14÷10	16÷10	14÷10	14÷10
Cross section stranded copper conductors	[AWG]	14÷2	14÷1	16÷3	14÷1	14÷1
Cable temperature	[°C]					
Padlockable (when open)		•	•	•	•	•
Sealable (when closed)		•	•	•	•	•

Reference Standard	E 90/50	E 90/125	E 90/30 CC	E 90/30 J	E 90/60 J
UL 4248-1	•	•	•	•	•
UL 4248-4			•		
UL 4248-8				•	•
UL 4248-18					

Approvals	E 90/50	E 90/125	E 90/30 CC	E 90/30 J	E 90/60 J
cULus			•	•	•
UL					
cURus	•	•			
CSA			•	•	•

**** IP20 also as standalone device installed on DIN rai

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E90 fuse holders



E 92

E 90 fuse holders
E 90 series fuse holders are designed for providing protection against short circuits and overloads. The housing is made of self-extinguishing thermoplastic material resistant to high temperatures (all materials are UL listed) while the contact clips are in silver plated copper.

E 90 fuse holders can be sealed or padlocked to ensure operator safety during maintenance. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not. For easy and quick installation E 90 range is totally compatible with our UL 508 busbars.

Thanks to cURus approval, they can be installed in UL certified machines.



E 94

E 90 fuse switch disconnectors for 10.3 x 38 mm fuses (AC-22B)

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	32	1	009238	E 91/32	0.061	6
1	32	1	024835	E 91/32s	0.062	6
1+N	32	2	008934	E 91N/32	0.130	3
1+N	32	2	515036	E 91N/32s	0.132	3
2	32	2	008835	E 92/32	0.122	3
2	32	2	514930	E 92/32s	0.132	3
3	32	3	047537	E 93/32	0.183	2
3	32	3	020639	E 93/32s	0.184	2
3+N	32	4	047339	E 93N/32	0.252	1
3+N	32	4	514831	E 93N/32s	0.255	1
4	32	4	047230	E 94/32	0.244	1
4	32	4	020530	E 94/32s	0.248	1

s: version with blown fuse indicator light

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E90 fuse holders
PV 1000 V



E 90 PV

E 90 PV fuse holders
E 90 PV series fuse holders, designed for operating voltages of 1000 V DC with utilization category DC-20B, are particularly suited for protection against overcurrents of photovoltaic systems. The single-pole or two-pole E 90 PV disconnectors for 10.3 x 38 mm cylindrical fuse links offer a reliable, compact and affordable solution for photovoltaic installations. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

E 90 PV fuse disconnectors for 10.3 x 38 mm fuses (DC-20B)

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	32	1	047131	E 91/32 PV	0.061	6
1	32	1	046936	E 91/32s PV	0.062	6
2	32	2	047032	E 92/32 PV	0.122	3
2	32	2	569138	E 92/32s PV	0.233	3

s: version with blown fuse indicator light

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E90 fuse holders
PV 1500



E 90 PV 1500

E 90 PV fuse holder
The E 90 PV 1500 series of fuse holders has been designed for applications up 1500 V DC. Thanks to their rated voltage up to 1500 V DC they are the ideal solution for protecting cells and inverters. In case of maintenance, they ensure isolation of circuits and strings up to 1500 V in direct current, in total safety. The main features of E 90 PV 1500 fuse holders include venting grooves and cooling chambers which improved heat dissipation.

E 90 PV fuse holder for 10 × 85 mm and 10/14 × 85 mm fuses

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	32	22.5	020417	E91/32 PV1500e	0.080	5
1	32	22.5	743613	E91/32 PV1500e	0.080	60

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E90 fuse holders
50/125



E 90 50/125

90 50/125 fuse holders
The E 90 50/125 fuse holders range is specifically intended for industrial circuit protection when currents are from 50 A to 125 A. They can, respectively, carry any type of cylindrical fuses 14x51 and 22x58 mm. The E 90 50/125 fuse holders can be sealed or padlocked in open position to ensure operator safety during maintenance operations. Versions with blown fuse indicator (LED) allow checking whether the fuse is still working correctly or not.

E 90/50 fuse holders for 14 x 51 mm fuses (AC-20B)

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	50	1.5	790228	E 91/50	0.095	4
1	50	1.5	372028	E 91/50s	0.095	4
1+N	50	3	779827	E 91N/50	0.19	2
1+N	50	3	023920	E 91N/50s	0.19	2
2	50	3	779728	E 92/50	0.19	2
2	50	3	070320	E 92/50s	0.19	2
3	50	4.5	779629	E 93/50	0.285	1
3	50	4.5	574828	E 93/50s	0.285	1
3+N	50	6	779520	E 93N/50	0.38	1
3+N	50	6	563020	E 93N/50s	0.38	1

E 90/125 fuse holders for 22 x 58 mm fuses (AC-20B)

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	100	2	775720	E 91/125	0.135	4
1	100	2	896326	E 91/125s	0.135	4
1+N	100	4	773528	E 91N/125	0.27	2
1+N	100	4	049425	E 91N/125s	0.27	2
2	100	4	771326	E 92/125	0.27	2
2	100	4	049326	E 92/125s	0.27	2
3	100	6	775027	E 93/125	0.405	1
3	100	6	049227	E 93/125s	0.405	1
3+N	100	8	965329	E 93N/125	0.54	1
3+N	100	8	049128	E 93N/125s	0.54	1

s: version with blown fuse indicator light

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E90 fuse holders
For class CC cartridge fuses


E 91


E 93

Technical features

Type			E 90/30 CC
Rated voltage		[V]	600
Rated current		[A]	30
Type of current			AC/DC
Rated frequency		[Hz]	60
Fuse			class CC
Tightening torque		[Nm]	PZ2 2-2.5*
		[lb-in]	PZ2 18-22**
Terminals cross-section		[mm²]	25
Cross-section rigid copper conductors	1 wire		1.5-25 mm² (16-10 AWG)
	2 wires		5 mm² (10 AWG)
Cross-section stranded copper conductors	1 wire		1.5-16 mm² (16-3 AWG)
	2 wires		2-5 mm² (14-10 AWG)
Voltage range for LED indicator light (only s version)		[V]	24 - 1000 AC/DC
Can be sealed closed			■
Can be padlocked open			■

* PZ2 2.8 Nm in case of rigid copper conductors, 2 wires
** PZ2 24,5 lb-in in case of rigid copper conductors, 2 wires

The E 90 fuse holders for Class CC cylindrical fuse links are specifically designed for the North American market in compliance with the UL standards. In accordance with the reference standards UL 4248-1 and UL 4248-4, they come in voltage and current ratings up to 600V and 30A. They are available in 1P, 1P+N, 2P, 3P, 3P+N and 4P versions. They can be padlocked open and sealed closed.
The E 90 fuse holders are the ideal solution for process control and industrial systems, automation systems, industrial installations and control circuits. The versions with blown fuse indicator light provide a visual signal of the fuse break condition

E 90 for class CC cartridge fuses

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	30	1	998723	E 91/30 CC	0.061	6
1	30	1	998822	E 91/30s CC	0.062	6
1+N	30	2	998921	E 91N/30 CC	0.13	3
1+N	30	2	999027	E 91N/30s CC	0.13	3
2	30	2	999126	E 92/30 CC	0.122	3
2	30	2	999225	E 92/30s CC	0.122	3
3	30	3	999324	E 93/30 CC	0.183	2
3	30	3	999423	E 93/30s CC	0.183	2
3+N	30	4	999522	E 93N/30 CC	0.252	1
3+N	30	4	999621	E 93N/30s CC	0.252	1
4	30	4	999720	E 94/30 CC	0.244	1
4	30	4	999829	E 94/30s CC	0.244	1

s: version with blown fuse indicator light

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E90 fuse holders
For Class J fuses



E 90 Class J

Technical features

Type		E 90/30 J	E 90/60 J
Rated current	[A]	30	60
Rated voltage	[V]	600	
Type of current		AC/DC	
Fuse		Class J 1-30A	Class J 31-60A
Rated frequency	[Hz]	60	
Tightening torque	[Nm]	PZ2 3.5-4	
Terminals cross-section	[mm²]	50	
Cross-section rigid copper conductors	[AWG]	14-10	
Cross-section stranded copper conductors	[AWG]	14-8	
Can be sealed closed		■	
Can be padlocked open		■	

E 90 Class J

The E 90 Class J fuse holders are the ideal solution for industrial systems, industrial installations and control circuits. They are specifically designed for the North American market in compliance with the UL standards. In accordance with the reference standard UL 4248-8, they come in voltage and current ratings up to 600V and 30/60A. They are available in 1P, 2P and 3P versions. The versions with blown fuse indicator light provide a visual signal of the fuse break condition. They can be padlocked open and sealed closed to ensure operator safety during maintenance operations.

E 90/30 fuse holders for Class J fuses

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	30	2	048220	E 91/30 J	0.135	4
2	30	4	048121	E 92/30 J	0.27	2
3	30	6	048022	E 93/30 J	0.405	1
1	30	2	047926	E 91/30s J	0.135	4
2	30	4	047827	E 92/30s J	0.27	2
3	30	6	047728	E 93/30s J	0.405	1

E 90/60 fuse holders for Class J fuses

Poles	Rated current	Modules	Bbn 8012542	Order details	Weight 1 piece	Pack unit
	In		EAN	Type code	kg	pc.
1	60	2.5	047629	E 91/60 J	0.175	3
2	60	5	049821	E 92/60 J	0.35	1
3	60	7.5	049722	E 93/60 J	0.525	1
1	60	2.5	049623	E 91/60s J	0.175	3
2	60	5	049524	E 92/60s J	0.35	1
3	60	7.5	738824	E 93/60s J	0.525	1

s: version with blown fuse indicator light

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E90 fuse holders
9F PV cylindrical fuses



E 9F PV

Type		E9F PV	E9F PV 1500
Reference standards	-	IEC 60269-6; ROHS 2002/98/CE, UL	IEC 60269-6; ROHS 2002/98/CE, UL
Rated current	[A]	1...30	4...32
Rated operational voltage	[V]	1000 DC	1500 DC
Breaking capacity	[kA]	10	50
Overall dimensions	[mm]	10.3 x 38	10 x 85

E 9F PV cylindrical fuses for photovoltaic applications
The E9F PV series of cylindrical fuses has been specifically designed for protecting direct current circuits up to 1500 V DC. Those fuses are the best way to protect the strings, inverters and surge arresters in photovoltaic installations.
The range of E9F PV fuses is available in the 10.3 x 38 mm size for up to 30 A rated current values at a nominal voltage of 1000 V DC or in the 10x85 mm size up to 32 A rated current at a nominal voltage of 1500 V DC.

E 9F PV cylindrical fuses 10.3 x 38 mm

Rated current	Bbn 8012542	Order details	Weight 1 piece	Pack unit
In	EAN	Type code	kg	pc.
1 A	134568	E 9F1 PV	0.007	10
2 A	134667	E 9F2 PV	0.007	10
3 A	134766	E 9F3 PV	0.007	10
4 A	134865	E 9F4 PV	0.007	10
5 A	134964	E 9F5 PV	0.007	10
6 A	135060	E 9F6 PV	0.007	10
7 A	135169	E 9F7 PV	0.007	10
8 A	135268	E 9F8 PV	0.007	10
10 A	135367	E 9F10 PV	0.007	10
12 A	135466	E 9F12 PV	0.007	10
15 A	135565	E 9F15 PV	0.007	10
20 A	135664	E 9F20 PV	0.007	10
25 A	135763	E 9F25 PV	0.007	10
30 A	135862	E 9F30 PV	0.007	10

E9F PV cylindrical fuses 10 x 85 mm

Rated current	Bbn 8012542	Order details	Weight 1 piece	Pack unit
In	EAN	Type code	kg	pc.
4 A	339410	E9F4 PV1500	0.010	5
5 A	052852	E9F5 PV1500	0.010	5
6 A	052951	E9F6 PV1500	0.010	5
7 A	053057	E9F7 PV1500	0.010	5
8 A	053156	E9F8 PV1500	0.010	5
10 A	053255	E9F10 PV1500	0.010	5
12 A	053354	E9F12 PV1500	0.010	5
15 A	053453	E9F15 PV1500	0.010	5
20 A	068754	E9F20 PV1500	0.010	5
25 A	068952	E9F25 PV1500	0.010	5
30 A	069058	E9F30 PV1500	0.010	5
32 A	069256	E9F32 PV1500	0.010	5

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CONTROL SECTION 7

Pilot devices



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Modular plastic range


MP1-10R


MP3-10R


MP1-10L


MP1-10Y


MP1-10G


MP1-20G


MP1-10B


MP1-10W

Non-illuminated pushbuttons

Color	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
Momentary flush pushbutton					
Red	Black plastic	MP1-10R	1SFA611100R1001	10	0.016
	Chrome plastic	MP1-20R	1SFA611100R2001	10	0.016
	Chrome metal	MP1-30R	1SFA611100R3001	10	0.026
Green	Black plastic	MP1-10G	1SFA611100R1002	10	0.016
	Chrome plastic	MP1-20G	1SFA611100R2002	10	0.016
	Chrome metal	MP1-30G	1SFA611100R3002	10	0.026
Yellow	Black plastic	MP1-10Y	1SFA611100R1003	10	0.016
Blue	Black plastic	MP1-10L	1SFA611100R1004	10	0.016
White	Black plastic	MP1-10W	1SFA611100R1005	10	0.016
Black	Black plastic	MP1-10B	1SFA611100R1006	10	0.016
	Chrome plastic	MP1-20B	1SFA611100R2006	10	0.016
	Chrome metal	MP1-30B	1SFA611100R3006	10	0.026
Clear	Black plastic	MP1-10C	1SFA611100R1008	10	0.016
Maintained flush pushbutton					
Red	Black plastic	MP2-10R	1SFA611101R1001	10	0.016
Momentary extended pushbutton					
Red	Black plastic	MP3-10R	1SFA611102R1001	10	0.016
Green	Black plastic	MP3-10G	1SFA611102R1002	10	0.016
Black	Black plastic	MP3-10B	1SFA611102R1006	10	0.016
Clear	Black plastic	MP3-10C	1SFA611102R1008	10	0.016


MP3-11R


MP1-11L


MP1-11G


MP1-11C


MP1-11Y

Illuminated pushbuttons

Color	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
Momentary flush pushbutton					
Red	Black plastic	MP1-11R	1SFA611100R1101	10	0.016
	Chrome plastic	MP1-21R	1SFA611100R2101	10	0.016
	Chrome metal	MP1-31R	1SFA611100R3101	10	0.026
Green	Black plastic	MP1-11G	1SFA611100R1102	10	0.016
	Chrome plastic	MP1-21G	1SFA611100R2102	10	0.016
	Chrome metal	MP1-31G	1SFA611100R3102	10	0.026
Yellow	Black plastic	MP1-11Y	1SFA611100R1103	10	0.016
Blue	Black plastic	MP1-11L	1SFA611100R1104	10	0.016
White	Black plastic	MP1-11W	1SFA611100R1105	10	0.016
Clear	Black plastic	MP1-11C	1SFA611100R1108	10	0.016
Maintained flush pushbutton					
Red	Black plastic	MP2-11R	1SFA611101R1101	10	0.016
Green	Black plastic	MP2-11G	1SFA611101R1102	10	0.016
Momentary extended pushbutton					
Red	Black plastic	MP3-11R	1SFA611102R1101	10	0.016
Green	Black plastic	MP3-11G	1SFA611102R1102	10	0.016
White	Black plastic	MP3-11W	1SFA611102R1105	10	0.016

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Modular plastic range



MPD1-11B

Non-illuminated double pushbuttons

Upper button	Lower button	Type	Order code	Pkg qty	Weight (1 pce) kg
Flush pushbutton					
● Green	**● Red**				
No text	No text	MPD1-11B	1SFA611130R1106	10	0.025
I	0	MPD2-11B	1SFA611131R1106	10	0.025
Extended lower pushbutton					
● Green	**● Red**				
I	0	MPD13-11B	1SFA611142R1106	10	0.025
START	STOP	MPD15-11B	1SFA611144R1106	10	0.025



MPD13-11G



MPD1-11R

Illuminated double pushbuttons

Upper button	Lower button	Indicator light	Type	Order code	Pkg qty	Weight (1 pce) kg
Flush lower pushbutton						
● Green	**● Red**					
No text	No text	● Red	MPD1-11R	1SFA611130R1101	10	0.025
I	0	● Green	MPD2-11G	1SFA611131R1102	10	0.025
I	0	● Yellow	MPD2-11Y	1SFA611131R1103	10	0.025
No text	No text	○ Clear	MPD1-11C	1SFA611130R1108	10	0.025
I	0	○ Clear	MPD2-11C	1SFA611131R1108	10	0.025
Extended lower pushbuttons						
● Green	**● Red**					
I	0	● Green	MPD13-11G	1SFA611142R1102	10	0.025
START	STOP	○ Clear	MPD15-11C	1SFA611144R1108	10	0.025



KP6-40R



KP6-40G



KP6-40B

Heavy duty pushbuttons for 30 mm mounting hole

Color	Type	Order code	Pkg qty	Weight (1 pce) kg
● Red	KP6-40R	1SFA616105R4001	1	0.028
● Green	KP6-40G	1SFA616105R4002	1	0.028
● Black	KP6-40B	1SFA616105R4006	1	0.028

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Modular plastic range



MPM1-10B

Non-illuminated mushroom pushbuttons momentary

Color	Type	Order code	Pkg qty	Weight (1 pce) kg
Ø 40 mm				
Red	MPM1-10R	1SFA611124R1001	10	0.018
Black	MPM1-10B	1SFA611124R1006	10	0.018



KPR3-104B

Flush reset pushbuttons with shaft (flexible joint not included)

Color	Text	Type	Order code	Pkg qty	Weight (1 pce) kg
Flush reset pushbutton					
Black	No text	KPR3-100B	1SFA616162R1006	10	0.027
	RESET	KPR3-104B	1SFA616162R1046	10	0.027
Blue	R	KPR3-101L	1SFA616162R1014	10	0.027
White	R	KPR3-101W	1SFA616162R1015	10	0.027

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Modular plastic range



MPET3-10R



MPMT4-10R



MPET4-10R

Non illuminated emergency stop pushbuttons

Color	Release method	Type	Order code	Pkg qty	Weight (1 pce) kg
Ø 30 mm					
Red	Twist release	MPET3-10R	1SFA611520R1001	1	0.036
Ø 40 mm					
Red	Twist release	MPET4-10R	1SFA611523R1001	1	0.036
Red	Pull release	MPEP4-10R	1SFA611524R1001	1	0.036
Red	Key code 455	MPEK4-11R	1SFA611525R1101	1	0.065
Ø 60 mm					
Red	Twist release	MPMT4-10R	1SFA611513R1001	1	0.048



MPMP3-11R



MPMT4-11R

Illuminated emergency stop pushbuttons

Color	Release method	Type	Order code	Pkg qty	Weight (1 pce) kg
Ø 40 mm					
Red	Twist release	MPMT3-11R	1SFA611510R1101	1	0.041
Ø 60 mm					
Red	Twist release	MPMT4-11R	1SFA611513R1101	1	0.048



ML1-100R



ML1-100G



ML1-100Y



ML1-100L



ML1-100C

Pilot lights

Color	Type	Order code	Pkg qty	Weight (1 pce) kg
Red	ML1-100R	1SFA611400R1001	10	0.018
Green	ML1-100G	1SFA611400R1002	10	0.018
Yellow	ML1-100Y	1SFA611400R1003	10	0.018
Blue	ML1-100L	1SFA611400R1004	10	0.018
White	ML1-100W	1SFA611400R1005	10	0.018
Clear	ML1-100C	1SFA611400R1008	10	0.018

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Modular plastic range


M2SS1-10B


M2SS4-10B

Non-illuminated selector switches

Operating principle	Color	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
2-position - Short handle						
	● Black	Black plastic	M2SS1-10B	1SFA611200R1006	10	0.015
	● Black	Black plastic	M2SS2-10B	1SFA611201R1006	10	0.015
		Chrome plastic	M2SS2-20B	1SFA611201R2006	10	0.015
		Chrome metal	M2SS2-30B	1SFA611201R3006	10	0.024
3-position - Short handle						
	● Black	Black plastic	M3SS1-10B	1SFA611210R1006	10	0.015
		Chrome plastic	M3SS1-20B	1SFA611210R2006	10	0.015
		Chrome metal	M3SS1-30B	1SFA611210R3006	10	0.024
	● Black	Black plastic	M3SS2-10B	1SFA611211R1006	10	0.015
	● Black	Black plastic	M3SS3-10B	1SFA611212R1006	10	0.015
	● Black	Black plastic	M3SS7-10B	1SFA611216R1006	10	0.015
2-position - Long handle						
	● Black	Black plastic	M2SS4-10B	1SFA611203R1006	10	0.018
	● Black	Black plastic	M2SS5-10B	1SFA611204R1006	10	0.018
3-position - Long handle						
	● Black	Black plastic	M3SS4-10B	1SFA611213R1006	10	0.018


M2SS1-11G

Illuminated selector switches

Operating principle	Color	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
2-position - Short handle						
	● Green	Black plastic	M2SS1-11G	1SFA611200R1102	10	0.015
	● Green	Black plastic	M2SS2-11G	1SFA611201R1102	10	0.015
3-position - Long handle						
	● Green	Black plastic	M3SS1-11G	1SFA611210R1102	10	0.018

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Modular plastic range



M2SSK1-101

Key-operated selector switches

Operating principle	Key	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
2-position maintained						
 Key can be removed in both positions	Key code 455	Black plastic	M2SSK1-101	1SFA611280R1001	1	0.045
 Key can be removed in B position only	Key code 455	Black plastic	M2SSK2-101	1SFA611281R1001	1	0.045
2-position momentary						
 Key can be removed in position B only	Key code 455	Black plastic	M2SSK3-101	1SFA611282R1001	1	0.045
3-position maintained						
 Key can be removed in all positions	Key code 455	Black plastic	M3SSK1-101	1SFA611283R1001	1	0.045
3-position momentary						
 Key can be removed in position B only	Key code 455	Black plastic	M3SSK3-101	1SFA611285R1001	1	0.045

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Modular plastic range



MT-105B

Potentiometers

Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
Knob with resistor 5 kΩ				
Black plastic	MT-105B	1SFA611410R1056	1	0.040
Chrome metal	MT-305B	1SFA611410R3056	1	0.049
Knob with resistor 10 kΩ				
Black plastic	MT-110B	1SFA611410R1106	1	0.040
Chrome metal	MT-310B	1SFA611410R3106	1	0.048



MTS2-10B

Toggle switches

Operating principle	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
2-position maintained					
	Black plastic	MTS1-10B	1SFA611300R1006	10	0.014
3-position momentary					
	Black plastic	MTS2-10B	1SFA611301R1006	10	0.014



MJS2-60B

Joysticks IP67 and IP69K

Position	Bezel	Type	Order code	Pkg qty	Weight (1 pce) kg
Without latching function					
2-position momentary					
	Chrome metal	MJS2-60B	1SFA611702R6006	1	0.052
4-position momentary					
	Chrome metal	MJS6-60B	1SFA611706R6006	1	0.052

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Modular plastic range



MCBH-00



MCBH5-00

Holders

Description	Contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
3-position	– –	MCBH-00	1SFA611605R1100	10	0.006
5-position[1]	– –	MCBH5-00	1SFA611601R1100	10	0.008

[1]Double contact blocks are required on side positions.



MCB-10



MCB-02



MCBL-01

Contact blocks

Description	Contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
Single contact blocks for front mounting					
For 3 & 5-position holder	1 0	MCB-10	1SFA611610R1001	10	0.013
	0 1	MCB-01	1SFA611610R1010	10	0.013
Single contact blocks, gold plated contacts					
For 3 & 5-position holder	1 0	MCB-10G	1SFA611610R1101	10	0.013
	0 1	MCB-01G	1SFA611610R1110	10	0.013
Double contacts blocks for front mounting					
For 3 & 5-position holder	2 0	MCB-20	1SFA611610R1002	10	0.026
	0 2	MCB-02	1SFA611610R1020	10	0.026
Single contact blocks for back mounting in enclosures					
For 3 & 5-position holder	1 0	MCB-10B	1SFA611610R2001	10	0.013
	0 1	MCB-01B	1SFA611610R2010	10	0.013

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Modular plastic range



MLBL-00W

LED blocks for front mounting

Color	Rated current mA	Wavelength nm	Luminance mcd	Type	Order code	Pkg qty	Weight (1pce) kg
Rated voltage 24 V AC/DC							
Red	10.0	620	250	MLBL-01R	1SFA611621R1011	10	0.012
Green	10.0	520	1500	MLBL-01G	1SFA611621R1012	10	0.012
Yellow	10.0	588	250	MLBL-01Y	1SFA611621R1013	10	0.012
Blue	10.0	468	450	MLBL-01L	1SFA611621R1014	10	0.012
White	10.0	[1]	600	MLBL-01W	1SFA611621R1015	10	0.012
Rated voltage 110-130 V AC							
Red	10.0	620	200	MLBL-04R	1SFA611621R1041	10	0.012
Green	10.0	520	1200	MLBL-04G	1SFA611621R1042	10	0.012
Yellow	10.0	588	250	MLBL-04Y	1SFA611621R1043	10	0.012
White	10.0	[1]	500	MLBL-04W	1SFA611621R1045	10	0.012
Rated voltage 110-130 V DC							
Red	10.0	620	250	MLBL-05R	1SFA611621R1051	10	0.012
Green	10.0	520	1500	MLBL-05G	1SFA611621R1052	10	0.012
Yellow	10.0	588	300	MLBL-05Y	1SFA611621R1053	10	0.012
White	10.0	[1]	600	MLBL-05W	1SFA611621R1055	10	0.012
Rated voltage 230 V AC							
Red	10.0	620	250	MLBL-07R	1SFA611621R1071	10	0.012
Green	10.0	520	1500	MLBL-07G	1SFA611621R1072	10	0.012
Yellow	10.0	588	300	MLBL-07Y	1SFA611621R1073	10	0.012
Blue	10.0	468	450	MLBL-07L	1SFA611621R1074	10	0.012
White	10.0	[1]	600	MLBL-07W	1SFA611621R1075	10	0.012

Note: care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

[1] X=0.31, Y=0.32 according to the ICI Chromaticity diagram.

This represents ABB's core pilot device offering. Please reference the **Pilot Device catalog** for the complete portfolio.

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Modular plastic range



KA1 -8029 / -8030



MA1-8015



KA1-8010



MA1-8053

Accessories

Description	Bezel / color	Type	Order code	Pkg qty	Weight (1pce) kg
30 mm adaptors for 22 mm operator (1.5 - 4 mm panel thickness)					
For pushbuttons, selector switches, pilot lights, potentiometers, emergency stop pushbuttons, MPE	Black plastic	KA1-8029	1SFA616920R8029	1	0.010
	Chrome metal	KA1-8030	1SFA616920R8030	1	0.010
Mounting tools					
Mounting tool for tightening the locking nut		MA1-8015	1SFA611920R8015	1	0.021
Protective ring To prevent accidental operation. Cannot be used together with Legend plate holder					
Flush pushbuttons	Metal and black plastic	KA1-8010	1SFA616920R8010	10	0.008
Shroud with anti rotation tabs, slot for pad-lock and with water drainage					
Emergency stop, machine stop 40 mm	Yellow	MA1-8053	1SFA611920R8053	10	0.020

Note: Din-rail adaptor should be used with 2 contact blocks for rear mounting type MCB..B.



MEPY1-0



MEP2-0

Plastic enclosures

Empty plastic enclosures with stainless steel screws for modular and compact range

Description	Color	Holes for cable gland	Type	Order code	Pkg qty	Weight (1 pce) kg
1-seat	Dark grey / light grey	M20 and Pg 13.5/Pg16 and (M20)	MEP1-0	1SFA611811R1000	1	0.15
1-seat	Yellow / light grey	M20 and Pg 13.5/Pg16 and (M20)	MEPY1-0	1SFA611821R1000	1	0.15
2-seat	Dark grey / light grey	M20 and Pg 13.5/Pg16 and (M20)	MEP2-0	1SFA611812R1000	1	0.17
3-seat	Dark grey / light grey	M20 and Pg 13.5/Pg16 and (M20)	MEP3-0	1SFA611813R1000	1	0.20
4-seat	Dark grey / light grey	M25/Pg 16 and (M20)	MEP4-0	1SFA611814R1000	1	0.23
6-seat	Dark grey / light grey	M25/Pg 16 and (M20)	MEP6-0	1SFA611816R1000	1	0.30

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Compact range



CP1-10R-10



CP1-30G-10



CP1-10Y-10



CP1-10L-10

Non-illuminated flush pushbuttons - momentary

Color	Bezel	Contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
Red	Black plastic	1 0	CP1-10R-10	1SFA619100R1011	10	0.018
		0 1	CP1-10R-01	1SFA619100R1041	10	0.018
		1 1	CP1-10R-11	1SFA619100R1071	10	0.022
	Chrome metal	0 1	CP1-30R-01	1SFA619100R3041	10	0.032
Green	Black plastic	1 0	CP1-10G-10	1SFA619100R1012	10	0.018
		1 1	CP1-10G-11	1SFA619100R1072	10	0.022
		2 0	CP1-10G-20	1SFA619100R1022	10	0.022
	Chrome metal	1 0	CP1-30G-10	1SFA619100R3012	10	0.032
Yellow	Black plastic	1 0	CP1-10Y-10	1SFA619100R1013	10	0.018
		1 1	CP1-10Y-11	1SFA619100R1073	10	0.022
Blue	Black plastic	1 0	CP1-10L-10	1SFA619100R1014	10	0.018
White	Black plastic	1 0	CP1-10W-10	1SFA619100R1015	10	0.018
Black	Black plastic	1 0	CP1-10B-10	1SFA619100R1016	10	0.018
		1 1	CP1-10B-11	1SFA619100R1076	10	0.022
		2 0	CP1-10B-20	1SFA619100R1026	10	0.022



CP1-11R-10



CP1-11G-10

Illuminated flush pushbuttons - momentary

Color	Bezel	Contacts	Type	Order code	Pkg qty	Weight (1 pce) kg
Rated voltage 24 V AC / DC						
Red	Black plastic	1 0	CP1-11R-10	1SFA619100R1111	10	0.025
		0 1	CP1-11R-01	1SFA619100R1141	10	0.025
Green	Black plastic	1 0	CP1-11G-10	1SFA619100R1112	10	0.025
Rated voltage 110...130 V AC / DC						
Red	Black plastic	1 0	CP1-12R-10	1SFA619100R1211	10	0.025
		0 1	CP1-12R-01	1SFA619100R1241	10	0.025
Green	Black plastic	1 0	CP1-12G-10	1SFA619100R1212	10	0.025
Rated voltage 220 V AC / DC						
Red	Black plastic	1 0	CP1-13R-10	1SFA619100R1311	10	0.025
		0 1	CP1-13R-01	1SFA619100R1341	10	0.025
Green	Black plastic	1 0	CP1-13G-10	1SFA619100R1312	10	0.025

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Compact range



CP6-10R-11



CP6-10G-11



CP6-10B-11

Heavy duty pushbuttons

Color	Contacts		Type	Order code	Pkg qty	Weight (1 pce) kg
Red	1	1	CP6-10R-11	1SFA619105R1071	10	0.031
Green	1	1	CP6-10G-11	1SFA619105R1072	10	0.031
Black	1	1	CP6-10B-11	1SFA619105R1076	10	0.031



CE3T-10R-01



CE4P-10R-01



CE4T-10R-01



CE4K1-10R-02

Non-illuminated emergency stop pushbuttons

Operator	Release method	Contacts		Type	Order code	Pkg qty	Weight (1 pce) kg
Ø 30 mm							
Red	Twist release	0	1	CE3T-10R-01	1SFA619500R1041	1	0.032
		1	1	CE3T-10R-11	1SFA619500R1071	1	0.032
		0	2	CE3T-10R-02	1SFA619500R1051	1	0.032
Ø 40 mm							
Red	Twist release	0	1	CE4T-10R-01	1SFA619550R1041	1	0.036
		1	1	CE4T-10R-11	1SFA619550R1071	1	0.036
		0	2	CE4T-10R-02	1SFA619550R1051	1	0.036
Red	Pull release	1	1	CE4P-10R-11	1SFA619551R1071	1	0.036
		0	2	CE4P-10R-02	1SFA619551R1051	1	0.036
Red	Key code 455	1	1	CE4K1-10R-11	1SFA619552R1071	1	0.064
		0	2	CE4K1-10R-02	1SFA619552R1051	1	0.064

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Compact range



CL2-502R



CL2-506G



CL2-508Y



CL2-506L



CL2-506C

Pilot lights

Color	Rated current mA	Anti-inductive voltage Vpeak	Wavelength nm	Illumination lx	Type	Order code	Pkg qty	Weight (1 pce) kg
Voltage 24 V AC / DC								
Red	16	6	625	80	CL2-502R	1SFA619403R5021	10	0.016
Green	16	6	520	135	CL2-502G	1SFA619403R5022	10	0.016
Yellow	16	6	590	55	CL2-502Y	1SFA619403R5023	10	0.016
Blue	16	6	470	10	CL2-502L	1SFA619403R5024	10	0.016
Clear	16	6	[1]	230	CL2-502C	1SFA619403R5028	10	0.016
Voltage 110 ... 130 V AC								
Red	15-17	20	625	85	CL2-513R	1SFA619403R5131	10	0.016
Green	15-17	20	520	90	CL2-513G	1SFA619403R5132	10	0.016
Yellow	15-17	20	590	85	CL2-513Y	1SFA619403R5133	10	0.016
Voltage 110 ... 130 V DC								
Red	8-9	20	625	55	CL2-515R	1SFA619403R5151	10	0.016
Green	8-9	20	520	125	CL2-515G	1SFA619403R5152	10	0.016
Yellow	8-9	20	590	50	CL2-515Y	1SFA619403R5153	10	0.016
Voltage 220 V DC								
Red	6	20	625	40	CL2-520R	1SFA619403R5201	10	0.016
Green	6	20	520	90	CL2-520G	1SFA619403R5202	10	0.016
Yellow	6	20	590	30	CL2-520Y	1SFA619403R5203	10	0.016
Voltage 230 V AC								
Red	17	30	625	95	CL2-523R	1SFA619403R5231	10	0.016
Green	17	35	520	155	CL2-523G	1SFA619403R5232	10	0.016
Yellow	17	35	590	70	CL2-523Y	1SFA619403R5233	10	0.016
Blue	17	35	470	10	CL2-523L	1SFA619403R5234	10	0.016
Clear	17	35	[1]	225	CL2-523C	1SFA619403R5238	10	0.016
Rated voltage 380 ... 415 V AC								
Red	15-17	55	625	85	CL2-542R	1SFA619403R5421	10	0.016
Green	15-17	65	520	130	CL2-542G	1SFA619403R5422	10	0.016

[1] X = 0.31, Y = 0.32

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Compact range



CB1-610R

Buzzers - Illuminated

Color	Light and sound output	Rated current mA	Luminance mcd	Type	Order code	Pkg qty	Weight (1 pce) kg
Rated voltage 24 V AC / DC							
● Red	Pulsation	53	60	CB1-610R	1SFA619600R6101	10	0.021
Rated voltage 110 ... 130 V AC							
● Red	Pulsation	70	60	CB1-611R	1SFA619600R6111	10	0.021
Rated voltage 110 ... 130 V DC							
● Red	Pulsation	15	60	CB1-612R	1SFA619600R6121	10	0.021
Rated voltage 230 V AC							
● Red	Pulsation	70	60	CB1-613R	1SFA619600R6131	10	0.021



CB1-620B

Buzzers - Non-illuminated

Color	Sound output	Rated current mA	Luminance mcd	Type	Order code	Pkg qty	Weight (1 pce) kg
Rated voltage 24 V AC / DC							
● Black	Continuous	40	-	CB1-620B	1SFA619600R6206	10	0.021
	Pulsation	48	-	CB1-630B	1SFA619600R6306	10	0.021
Rated voltage 110 ... 130 V AC							
● Black	Continuous	40	-	CB1-621B	1SFA619600R6216	10	0.021
	Pulsation	48	-	CB1-631B	1SFA619600R6316	10	0.021
Rated voltage 110 ... 130 V DC							
● Black	Continuous	15	-	CB1-622B	1SFA619600R6226	10	0.021
	Pulsation	15	-	CB1-632B	1SFA619600R6326	10	0.021
Rated voltage 230 V AC							
● Black	Continuous	40	-	CB1-623B	1SFA619600R6236	10	0.021
	Pulsation	40	-	CB1-633B	1SFA619600R6336	10	0.021

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Compact range



C2SS1-10B-10



C3SS2-30B-20

Non-illuminated selector switches

Operating principle	Bezel	Contacts		Type	Order code	Pkg qty	Weight (1 pce) kg
2-position - short handle maintained							
	Black plastic	1	0	C2SS1-10B-10	1SFA619200R1016	10	0.02
		1	1	C2SS1-10B-11	1SFA619200R1076	10	0.024
		2	0	C2SS1-10B-20	1SFA619200R1026	10	0.024
	Black plastic	1	0	C2SS2-10B-10	1SFA619201R1016	10	0.02
		1	1	C2SS2-10B-11	1SFA619201R1076	10	0.024
		2	0	C2SS2-10B-20	1SFA619201R1026	10	0.024
3-position - short handle maintained							
	Black plastic	1	1	C3SS1-10B-11	1SFA619210R1076	10	0.024
		2	0	C3SS1-10B-20	1SFA619210R1026	10	0.024
	Chrome metal	2	0	C3SS1-30B-20	1SFA619210R3026	10	0.032
3-position - short handle momentary							
	Black plastic	2	0	C3SS2-10B-20	1SFA619211R1026	10	0.024

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Compact range


KA1-8010


KA1-8021


MA1-8130


KA1


MA6-1060



MA6-1026


CEPY1-0


CA1-8053


KA1-8120

Accessories

Description	Bezel / color	Type	Order code	Pkg qty	Weight (1pce) kg
Protective cover					
To prevent accidental operation. Cannot be used together with Legend plate holder					
For flush pushbuttons	Metal and black plastic	KA1-8010	1SFA616920R8010	10	0.008
Bezel					
For pushbuttons	Chrome metal	KA1-8021	1SFA616920R8021	10	0.015
Blanking plugs					
	Black	MA1-8130	1SFA611920R8130	10	0.005
30 mm adaptors for 22 mm operator (1.5 - 4 mm panel thickness)					
For pushbuttons, selector switches, pilot lights, potentiometers, emergency stop pushbuttons, MPE	Black plastic	KA1-8029	1SFA616920R8029	1	0.010
	Chrome metal	KA1-8030	1SFA616920R8030	1	0.010
Legend plate holder					
Grey plastic		MA6-1060	1SFA611930R1060	10	0.002
Black plastic		KA1-8120	1SFA616920R8120	100	0.002
Legend plate					
Without text or symbol		KA1-8121	1SFA616920R8121	100	0.001
Emergency stop		CA6-1026	1SFA619930R1026	10	0.004
Compact plastic enclosures					
Empty enclosure for compact range					
1-seat	Yellow / light grey	M20 and Pg 13.5/ Pg16 and (M20)	CEPY1-0	1SFA619821R1000	1	0.072
Shrouds					
To be mounted on CEP-series of enclosures or on panel					
Yellow		CA1-8053	1SFA619920R8053	1	0.016

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Modular metal range - stocked 22mm










Modular Metal pushbuttons - 22mm

Description			Ordering code
Momentary flush pushbutton			
Red			P9M-PNRG
Green			P9M-PNVG
Black			P9M-PNNG
Blue			P9M-PNLG
Yellow			P9M-PNGG
White			P9M-PNBG
Momentary extended pushbutton			
Red			P9M-PNRS
Green			P9M-PNVS
Black			P9M-PNNS
White			P9M-PNBS
Momentary flush pushbutton - Illuminated			
Red			P9M-PLRGD
Green			P9M-PLVGD
Blue			P9M-PLLGD
Yellow			P9M-PLGGD
White			P9M-PLBGD
Momentary extended pushbutton - Illuminated			
Red			P9M-PLRSD
Green			P9M-PLVSD
White			P9M-PLBSD
Orange			P9M-PLASD
Marked pushbuttons - momentary	**Text**		
Green	START		P9M-PNVG202
Red	STOP		P9M-PNRG201
Blue	R		P9M-PNLG037
Red	O		P9M-PNRG029
Green	I		P9M-PNVG028
Black	I		P9M-PNNG028
Mushroom pushbuttons - maintained	**Operator size**		
Red	Ø 40 mm		P9M-EM4RN
Green	Ø 40 mm		P9M-EM4VN
Black	Ø 40 mm		P9M-EM4NN
Mushroom pushbuttons - momentary		**Release method**	
Red	Ø 40 mm	Twist release	P9M-ER4RN
Mushroom pushbuttons - maintained with key	**Key code**		
Red	Key code 37		P9M-EC4RN37
Mushroom pushbuttons - momentary - illuminated	**Operator size**		
Red	Ø 40 mm	–	P9M-EM4RL
Mushroom pushbuttons - maintained - illuminated	**Operator size**	**Release method**	
Red	Ø 40 mm	Pull Release	P9M-ET4RL1

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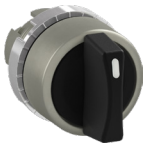
Modular metal range - stocked 22mm



Pilot lights

	Ordering code
○ Clear	P9M-LID
● Green	P9M-LVD
● Blue	P9M-LLD
● Red	P9M-LRD
○ White	P9M-LBD
● Yellow	P9M-LGD
● Orange	P9M-LAD





Selector switches

Key-operated 2-position	**Ordering code**
Maintained BC	P9M-SCI0C01
Momentary BC	P9M-SCI5C01
Key-operated 3-position	
Maintained ABC	P9M-SCZ0T01
Momentary ABC, spring return from A to B and from C to B	P9M-SCZ3C01
2-position	
Maintained AC	P9M-SMD0N
Maintained BC	P9M-SMI0N
Momentary BC, spring return from C to B	P9M-SMI5N
3-position - short handle	
Maintained ABC	P9M-SMZ0N
Momentary ABC, spring return from A to B and from C to B	P9M-SMZ3N
Momentary ABC, spring return from C to B	P9M-SMZ5N

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Modular metal range - stocked 22mm









Contact blocks

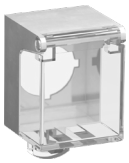
Description	Ordering code
Single contact blocks - Faston Terminals	
1 NO	P9B-10FN
1 NC	P9B-01FN
Holders	
3-position	P9A-CFS3
5-position	P9A-CFS5
Single contact blocks for front mounting	
1 NO	P9B-10VN
1 NC	P9B-01VN
Single contact blocks with N.O. early make contacts and N.C. late break contacts	
1 NO	P9B-10VA
1 NC	P9B-01VR
Double contact blocks	
1 NO + 1 NC	P9B-11VN
2 NO	P9B-20VN
2 NC	P9B-02VN
Power Supply block for LED bulbs (BA9S)	
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNV0
Power Supply block for LED bulbs (BA9S) - Faston Terminals	
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNF0
Full voltage - bulb not included IEC: BA9S max 380 V - 2 W UL - CSA: BA9S max 250 V - 2 W	P9P-DNF0-AA

LED blocks for front mounting	Voltage	Ordering code
● Green	24V AC/DC	P9P-LNVDV
● Blue	24V AC/DC	P9P-LNVDL
● Red	24V AC/DC	P9P-LNVDR
○ White	24V AC/DC	P9P-LNVDB
● Yellow	24V AC/DC	P9P-LNVDG
● Green	120V AC	P9P-LNVJV
● Blue	120V AC	P9P-LNVJL
● Red	120V AC	P9P-LNVJR
○ White	120V AC	P9P-LNVJB
● Yellow	120V AC	P9P-LNVJG
● Green	230V AC	P9P-LNVNV
● Blue	230V AC	P9P-LNVNL
● Red	230V AC	P9P-LNVNR
○ White	230V AC	P9P-LNVNB
● Yellow	230V AC	P9P-LNVNG

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Modular metal range - stocked 22mm



Accessories

Protection cover	Ordering code
Protection cover padlockable for standard pushbuttons, illuminated pushbuttons, selector switches, illuminated selector switches	P9A-CRCL



Maintained accessory	Ordering code
Device for standard pushbuttons, illuminated pushbuttons: To be used only with contact blocks P9B01VN, P9B01VR, P9B10VA and P9B01FN	P9A-CDPP

Tools	Ordering code
Locking ring wrench	P9A-CWAF



Adapter ring	Ordering code
Adapter ring for 30 mm hole to mount P9 22 mm in a 30 mm hole	P9A-RAM32

Terminal adapter	Ordering code
PCB adapter for faston contacts	P9A-CA6



Rubber protective caps (IP66) for standard pushbuttons	Ordering code
Flush Pushbuttons	
● Red	080CP-R
● Green	080CP-V
● Black	080CP-N
○ Clear	080CP-T
Extended pushbuttons	**Ordering code**
○ Clear	P9A-RCST

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Notes

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CONTROL SECTION 8

Electronic relays and controls

Timers, power supplies, relays, limit switches



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Section Updated 01/2026

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Time relays
CT-C range



CT-MFC.12



CT-ERC.22

Selection table

	Order number	1SVR508010R1300	1SVR508020R0000	1SVR508020R1100	1SVR508120R0000	1SVR508100R0000	1SVR508100R0100	1SVR508110R0000	1SVR508110R0100	1SVR508130R0000	1SVR508150R0000	1SVR508160R0000	1SVR508160R0100	1SVR508210R0100	1SVR508211R0100
	Type	CT-MKC.31	CT-MFC.12	CT-MFC.21	CT-ARC.12	CT-ERC.12	CT-ERC.22	CT-AHC.12	CT-AHC.22	CT-VWC.12	CT-EBC.12	CT-TGC.12	CT-TGC.22	CT-SAC.22	CT-SDC.22
Timing function															
ON-delay	⊠	■	■	■		■	■								
OFF-delay with aux. voltage	▬	■	■	■				■	■						
OFF-delay w/o aux. voltage	▬				■										
Impulse-ON	1⎍⊠	■	■	■						■					
Impulse-OFF with aux. voltage	1⎍▬	■	■	■											
Impulse-OFF w/o aux. voltage	1⎍▬				■										
Flasher starting with ON	⎍⊠	■	■	■							■				
Flasher starting with OFF	⎍▬	■	■	■							■				
Pulse generator starting with ON or OFF	⊠⎍											■	■		
Pulse former	1⎍	■	■	■											
Star-delta change-over	⚠													■	■
Features															
Control input, voltage-related triggering			■	■				■	■			■	■		
Time range															
0.05 s - 100 h		■	■	■		■	■	■	■	■	■	2	2		
0.05 s - 10 min					■									■	■
Supply voltage															
12-240 V AC/DC		■		■											
24-48 V DC			■		■	■	■	■	■	■	■	■	■	■	■
24-240 V AC			■		■	■	■	■	■	■	■	■	■	■	■
Output															
Solid state		■													
c/o contact			1	2	1	1	2	1	2	1	1	1	2		
n/o contact														2	2

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Time relays
CT-S range



CT-MVS.21P



CT-MBS.22P



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

*** Order number and type**
All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

Selection table

	Order number*	1SVR7■0020R0200	1SVR7■0020R3300	1SVR7■0021R2300	1SVR7■0020R3100	1SVR7■0030R3300	1SVR7■0010R0200	1SVR7■0010R3200	1SVR7■0040R3300	1SVR7■0100R0300	1SVR7■0100R3300	1SVR7■0100R3100	1SVR7■0180R0300	1SVR7■0180R3300	1SVR7■0180R3100	1SVR7■0110R3300	1SVR7■0120R3100	1SVR7■0120R3300	1SVR7■0210R3300	1SVR7■0211R2300
	Type*	CT-MVS.21●	CT-MVS.22●	CT-MVS.23●	CT-MVS.12●	CT-MXS.22●	CT-MFS.21●	CT-MBS.22●	CT-WBS.22●	CT-ERS.21●	CT-ERS.22●	CT-ERS.12●	CT-APS.21●	CT-APS.22●	CT-APS.12●	CT-AHS.22●	CT-ARS.11●	CT-ARS.21●	CT-SDS.22●	CT-SDS.23●
Timing function																				
ON-delay	⊠	■	■	■	■		■	■	■	■	■	■								
ON-delay, accumulative	⊠(+)	■	■	■	■		■													
OFF-delay w. aux. voltage	▬	■	■	■	■		■	■					■	■	■	■				
OFF-delay w. aux. voltage, accumulative	▬						■													
OFF-delay w/o aux. voltage	▬																■	■		
ON- and OFF-delay, symmetrical	⊠▬	■	■	■	■		■	■												
ON- and OFF-delay, symmetrical, accumulative	⊠▬						■													
ON- and OFF-delay, asymmetrical	⊠▬					■														
ON/OFF function	▭	■	■	■	■	■	■	■	■											
Impulse-ON	1⎍⊠	■	■	■	■		■	■	■											
Impulse-ON, accumulative	1⎍⊠						■													
Impulse-OFF w. aux. voltage	1⎍▬	■	■	■	■		■	■												
Impulse-OFF w. aux. voltage, accumulative	1⎍▬						■													
Impulse-ON and OFF	1⎍⊠					■														
Fixed impulse with adjustable time delay	⊠1⎍								■											
Adjustable impulse with fixed time delay	⊠1⎍								■											
Flasher starting with ON	⎍⊠						■	■	■											
Flasher with reset, starting with ON	⎍⊠						■	■												
Flasher starting with OFF	⎍▬						■	■	■											
Flasher with reset, starting with OFF	⎍▬						■	■												
Flasher starting with ON or OFF	⎍⊠	■	■	■	■															
Pulse generator starting with ON or OFF	⊠⎍					■														
Single pulse generator	⊠1⎍					■														
Pulse former	1⎍	■	■	■	■		■	■												
Star-delta change-over	Δ																		■	■
Star-delta change-over with impulse	Δ1⎍	■	■	■			■	■												
Features																				
Control input, voltage-related triggering		■	■	■	■	■							■	■	■					
Control input, volt-free triggering							2	1								■				
Remote potentiometer connection		■				2	■	■												
2nd c/o contact selectable as instantaneous contact		■					■	■												
Extended temperature range (-40...+60°C)		■					■			■			■							

(Table continued on next page)

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Time relays
CT-S range



CT-MVS.21P



CT-MBS.22P



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

Selection table (continued)

	Order number*	1SVR7■0020R0200	1SVR7■0020R3300	1SVR7■0021R2300	1SVR7■0020R3100	1SVR7■0030R3300	1SVR7■0010R0200	1SVR7■0010R3200	1SVR7■0040R3300	1SVR7■0100R0300	1SVR7■0100R3300	1SVR7■0100R3100	1SVR7■0180R0300	1SVR7■0180R3300	1SVR7■0180R3100	1SVR7■0110R3300	1SVR7■0120R3100	1SVR7■0120R3300	1SVR7■0210R3300	1SVR7■0211R2300
	Type*	CT-MVS.21●	CT-MVS.22●	CT-MVS.23●	CT-MVS.12●	CT-MXS.22●	CT-MFS.21●	CT-MBS.22●	CT-WBS.22●	CT-ERS.21●	CT-ERS.22●	CT-ERS.12●	CT-APS.21●	CT-APS.22●	CT-APS.12●	CT-AHS.22●	CT-ARS.11●	CT-ARS.21●	CT-SDS.22●	CT-SDS.23●
Time range																				
0.05 s - 10 min																■	■	■	■
0.05 s - 300 h	■	■	■	■	2	■	■	■	■	■	■	■	■	■	■				
Supply voltage																				
24-48 V DC		■		■	■		■	■		■	■		■	■	■			■	
24-240 V AC		■		■	■		■	■		■	■		■	■	■			■	
24-240 V AC/DC	■					■			■			■				■	■		
380-440 V AC			■																■
Output																				
c/o contact	2	2	2	1	2	2	2	2	2	2	1	2	2	1	2	1	2		
n/o contact																		2	2

—

*** Order number and type**
All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

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Monitoring relays
Single-phase current



CM-SRS.22S



CM-SFS.22P

Selection table

	Order number	1SVR730840R0200	1SVR740840R0200	1SVR730841R0200	1SVR740841R0200	1SVR730841R1200	1SVR740841R1200	1SVR730840R0300	1SVR730841R0300	1SVR730841R1300	1SVR730840R0400	1SVR740840R0400	1SVR730841R0400	1SVR740841R0400	1SVR730841R1400	1SVR740841R1400	1SVR730840R0500	1SVR730841R0500	1SVR730841R1500	1SVR730840R0600	1SVR740840R0600	1SVR730840R0700	1SVR730760R0400	1SVR740760R0400	1SVR730760R0500
	Type	CM-SRS.11S	CM-SRS.11P	CM-SRS.11S	CM-SRS.11P	CM-SRS.11S	CM-SRS.11P	CM-SRS.12S	CM-SRS.12S	CM-SRS.12S	CM-SRS.21S	CM-SRS.21P	CM-SRS.21S	CM-SRS.21P	CM-SRS.21S	CM-SRS.21P	CM-SRS.22S	CM-SRS.22S	CM-SRS.22S	CM-SRS.M1S	CM-SRS.M1P	CM-SRS.M2S	CM-SFS.21S	CM-SFS.21P	CM-SFS.22S
Rated control supply voltage U_s																									
24 - 240 V AC/DC		■	■					■			■	■					■			■	■	■	■	■	■
110 - 130 V AC				■	■				■				■	■				■							
220 - 240 V AC						■	■			■					■	■			■						
Measuring ranges AC/DC																									
3 - 30 mA		■	■	■	■	■	■				■	■	■	■	■	■				■	■		■	■	
10 - 100 mA		■	■	■	■	■	■				■	■	■	■	■	■				■	■		■	■	
0.1 - 1 A		■	■	■	■	■	■				■	■	■	■	■	■				■	■		■	■	
0.3 - 1.5 A								■	■	■							■	■	■			■			■
1 - 5 A								■	■	■							■	■	■			■			■
3 - 15 A								■	■	■							■	■	■			■			■
Monitoring function																									
Over- or undercurrent		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
Window current monitoring																							■	■	■
Latching																				sel	sel	sel	sel	sel	sel
Open-circuit or closed-circuit principle																				sel	sel	sel	sel	sel	sel
Timing functions for tripping delay																									
ON-delay, 0.1 - 30 s											adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj			
ON- or OFF-delay, 0.1 - 30 s																							sel	sel	sel
Output																									
c/o contact		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Connection type																									
Push-in terminals			■		■		■					■		■		■					■			■	
Double-chamber cage connection terminals		■		■		■		■	■	■	■		■		■		■	■	■	■		■	■		■

adj: adjustable
sel: selectable

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Monitoring relays
Single-phase voltage



CM-ESS.MP



CM-EFS.2

Selection table

	Order number	1SVR730830R0300	1SVR740830R0300	1SVR730831R0300	1SVR740831R0300	1SVR730831R1300	1SVR740831R1300	1SVR730830R0400	1SVR740830R0400	1SVR730831R0400	1SVR740831R0400	1SVR730831R1400	1SVR740831R1400	1SVR730830R0500	1SVR740830R0500	1SVR730750R0400	1SVR740750R0400
	Type	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.MS	CM-ESS.MP	CM-EFS.2S	CM-EFS.2P
Rated control supply voltage U_s																	
24 - 240 V AC/DC		■	■					■	■					■	■	■	■
110 - 130 V AC				■	■					■	■						
220 - 240 V AC						■	■					■	■				
Measuring ranges AC/DC																	
3 - 30 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6 - 60 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
30 - 300 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
60 - 600 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																	
Over- or undervoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Windows voltage monitoring																■	■
Latching														sel	sel	sel	sel
Open-circuit or closed-circuit principle														sel	sel	sel	sel
Timing functions for tripping delay																	
ON-delay, 0.1 - 30 s								adj	adj	adj	adj	adj	adj	adj	adj		
ON- or OFF-delay, 0.1 - 30 s																sel	sel
Output																	
c/o contact		1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Connection type																	
Push-in terminals			■		■		■		■		■		■		■		■
Double-chamber cage connection terminals		■		■		■		■		■		■		■		■	

adj: adjustable
sel: selectable

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Monitoring relays
Three-phase single functional



CM-PBE



CM-PSS.41P



CM-PAS.31P

Selection table

	Order number	1SVR550881R9400	1SVR550882R9500	1SVR550870R9400	1SVR550871R9500	1SVR550824R9100	1SVR550826R9100	1SVR730824R9300	1SVR740824R9300	1SVR730784R2300	1SVR740784R2300	1SVR730784R3300	1SVR740784R3300	1SVR730794R1300	1SVR740794R1300	1SVR730794R3300	1SVR740794R3300	1SVR730794R2300	1SVR740794R2300	1SVR730774R1300	1SVR740774R1300	1SVR730774R3300	1SVR740774R3300
	Type	CM-PBE	CM-PBE	CM-PVE	CM-PVE	CM-PFE	CM-PFE.2	CM-PFS.S	CM-PFS.P	CM-PSS.31S	CM-PSS.31P	CM-PSS.41S	CM-PSS.41P	CM-PVS.31S	CM-PVS.31P	CM-PVS.41S	CM-PVS.41P	CM-PVS.81S	CM-PVS.81P	CM-PAS.31S	CM-PAS.31P	CM-PAS.41S	CM-PAS.41P
Rated control supply voltage U_s																							
Phase to phase																							
160-300 V AC														■	■					■	■		
200-400 V AC																		■	■				
200-500 V AC						■	■	■															
208-440 V AC					■																		
300-500 V AC																■	■					■	■
320-460 V AC			■	■																			
380 V AC									■	■													
380-440 V AC	■	■																					
400 V AC											■	■											
Phase to neutral																							
185-265 V AC			■																				
220-240 V AC	■																						
Rated frequency																							
50/60 Hz	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Suitable for monitoring																							
Single-phase mains	■		■																				
Three-phase mains	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																							
Phase failure	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Phase sequence					■	■	■	■	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	■	■	■	■	■
Overvoltage			■	■					■	■	■	■	■	■	■	■	■	■					
Undervoltage			■	■					■	■	■	■	■	■	■	■	■	■					
Unbalance																			■	■	■	■	
Neutral[1]	■		■																				
Thresholds																							
adjustable (adj) or fixed (fix)	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																							
ON delay							fix	fix											sel	sel	sel	sel	
On and OFF delay	fix	fix	fix	fix	fix	fix			adj	adj	adj	adj	adj	adj	adj	adj	adj	adj					
Connection type																							
Push-in terminals										■		■		■		■		■		■		■	
Double-chamber cage connection terminals									■		■		■		■		■		■		■		

[1] The external conductor voltage towards the neutral conductor is measured.

adj: adjustable
sel: selectable
fix: fixed

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Monitoring relays
Three-phase multi-functional



CM-MPS.23P



CM-MPN.52P

Selection table

	Order number	1SVR730885R1300	1SVR740885R1300	1SVR730885R3300	1SVR740885R3300	1SVR730884R1300	1SVR740884R1300	1SVR730884R3300	1SVR740884R3300	1SVR730885R4300	1SVR740885R4300	1SVR730884R4300	1SVR740884R4300	1SVR750487R8300	1SVR760487R8300	1SVR750488R8300	1SVR760488R8300	1SVR750489R8300	1SVR760489R8300
	Type	CM-MPS.11S	CM-MPS.11P	CM-MPS.21S	CM-MPS.21P	CM-MPS.31S	CM-MPS.31P	CM-MPS.41S	CM-MPS.41P	CM-MPS.23S	CM-MPS.23P	CM-MPS.43S	CM-MPS.43P	CM-MPN.52S	CM-MPN.52P	CM-MPN.62S	CM-MPN.62P	CM-MPN.72S	CM-MPN.72P
Rated control supply voltage U_s																			
Phase to phase																			
160-300 V AC						■	■												
300-500 V AC								■	■			■	■						
350-580 V AC														■	■				
450-720 V AC																■	■		
530-820 V AC																		■	■
Phase to neutral																			
90-170 V AC		■	■																
180-280 V AC				■	■					■	■								
Rated frequency																			
50/60 Hz		■	■	■	■	■	■	■	■					■	■	■	■	■	■
50/60/400 Hz										■	■	■	■						
Suitable for monitoring																			
Mains with harmonic content										■	■	■	■						
Single-phase mains		■	■	■	■					■	■								
Three-phase mains		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																			
Phase failure		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Phase sequence		sel	sel	sel	sel	sel	sel	sel	sel	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Automatic phase sequence correction										adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Overvoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Undervoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Unbalance		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Interrupted neutral monitoring[1]		■	■	■	■					■	■								
Thresholds																			
Adjustable (adj)		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																			
On- or OFF delay		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Connection type																			
Push-in terminals			■		■		■		■		■		■		■		■		■
Double-chamber cage connection terminals		■		■		■		■		■		■		■		■		■	

[1] The relay detects by means of a phase unbalance the interruption of the neutral conductor. The external conductor voltage towards the neutral conductor is measured too.

adj: adjustable
sel: selectable

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Monitoring relays
Grid feeding



CM-UFD.M*M

Selection table

	Order number	1SVR560731R3700	1SVR560730R3401	1SVR560731R3701	1SVR560730R3402	1SVR560731R3702	1SVR560731R3703
	Type	CM-UFD.M22M	CM-UFD.M31	CM-UFD.M31M	CM-UFD.M33	CM-UFD.M33M	CM-UFD.M34M
Rated control supply voltage U_s							
24-240 V AC/DC		■	■	■	■	■	■
Standard							
CEI 0-21		■					
VDE AR-N 4105, VDE AR-N 4110			■	■			
ENA G98, G99					■	■	
DRRG standard of DEWA							■
Rated frequency							
DC or 50 Hz		■	■	■			
DC or 50/60 Hz					■	■	■
Modbus RTU		■		■		■	■
Suitable for monitoring							
Single-phase mains		■	■	■	■	■	■
Three-phase mains		■	■	■	■	■	■
Monitoring function							
Over-/undervoltage		■	■	■	■	■	■
Over-/underfrequency		■	■	■	■	■	■
ROCOF (rate of change of frequency)		■	■	■	■	■	■
10 minutes average value		■	■	■	■	■	■
Vector shift			■	■	■	■	■
Thresholds		adj	adj	adj	adj	adj	adj

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Monitoring relays
Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table

	Order number	1SVR730670R0200	1SVR740670R0200	1SVR730660R0100	1SVR740660R0100	1SVR750660R0200	1SVR760660R0200	1SVR470670R1000	1SVR470670R1100
	Type	CM-IWS.2S	CM-IWS.2P	CM-IWS.1S	CM-IWS.1P	CM-IWN.1S	CM-IWN.1P	CM-IWM.10	CM-IWM.11
Rated control supply voltage U_s									
24 - 240 V AC/DC		■	■	■	■	■	■		
24 V DC								■	■
Measuring voltages									
250 V AC (L-PE)				■	■				
400 V AC (L-PE)		■	■			■	■		
690 V AC (L-PE)						■[1]	■[1]	■[2]	
1000 V AC (L-PE)									■[3]
300 V DC (L-PE)				■	■				
600 V DC (L-PE)						■	■		
690 V DC (L-PE)								■[2]	
1000 V DC (L-PE)						■[1]	■[1]		■[3]
Measuring range									
1 - 100 kΩ		■	■	■	■	■	■		
2 - 200 kΩ						■	■		
2 - 250 kΩ								■	■
System leakage capacitance, max.									
10 µF		■	■	■	■				
20 µF						■	■		
1000 µF								■	
3000 µF									■
Output									
1 c/o		■	■	■	■				
1 x 2 c/o or 2 x 1 c/o						■	■		
2 c/o								■	■
Operating principle									
Open-circuit principle		■	■	■	■			■	■
Open- or closed-circuit principle adjustable						■	■		

[1] With coupling unit CM-IVN screw version CM-IVN.S: 1SVR750669R9400
push-in version CM-IVN.P: 1SVR760669R9400

[2] Allowed voltage range of the supervised network: 0-760 V AC / 0-1000 V

[3] Allowed voltage range of the supervised network: 0-1100 V AC / 0-1500 V DC

(Table continued on next page)

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Monitoring relays
Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table (continued)

	Order number	1SVR730670R0200	1SVR740670R0200	1SVR730660R0100	1SVR740660R0100	1SVR750660R0200	1SVR760660R0200	1SVR470670R1000	1SVR470670R1100
	Type	CM-IWS.2S	CM-IWS.2P	CM-IWS.1S	CM-IWS.1P	CM-IWN.1S	CM-IWN.1P	CM-IWM.10	CM-IWM.11
Test									
Front-face button or control input		■	■	■	■	■	■	■	■
Reset									
Front-face button or control input		■	■	■	■	■	■	■	■
Fault storage / latching configurable		■	■	■	■	■	■		
Non volatile storage configurable		■	■	■	■	■	■		
Interrupted wire detection						■	■	■	■
Threshold values configurable		1	1	1	1	2	2	2	2
Control input (measuring input deactivation)									■
Connection type									
Push-in terminals			■		■		■		
Double-chamber cage connection terminals		■		■		■			
Screw terminals								■	■

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Motor protection relays
Thermistor



CM-MSS.12S



CM-MSS.41S



CM-MSS.51S

Selection table

	Order code	1SVR550805R9300	1SVR550800R9300	1SVR550801R9300	1SVR740720R1400	1SVR730720R1400	1SVR740700R0100	1SVR730700R0100	1SVR740700R2100	1SVR730700R2100	1SVR740722R1400	1SVR730722R1400	1SVR740700R0200	1SVR730700R0200	1SVR740700R2200	1SVR730700R2200	1SVR740712R1400	1SVR730712R1400	1SVR740712R0200	1SVR730712R0200	1SVR740712R2200	1SVR730712R2200	1SVR740712R1200	1SVR730712R1200	1SVR740712R1300	1SVR730712R1300
	Type	CM-MSE	CM-MSE	CM-MSE	CM-MSS.11P	CM-MSS.11S	CM-MSS.12P	CM-MSS.12S	CM-MSS.13P	CM-MSS.13S	CM-MSS.21P	CM-MSS.21S	CM-MSS.22P	CM-MSS.22S	CM-MSS.23P	CM-MSS.23S	CM-MSS.31P	CM-MSS.31S	CM-MSS.32P	CM-MSS.32S	CM-MSS.33P	CM-MSS.33S	CM-MSS.41P	CM-MSS.41S	CM-MSS.51P	CM-MSS.51S
Characteristics																										
ATEX approval					■	■					■	■					■	■	■	■	■	■	■	■	■	■
Number of sensor circuits		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
Single or accumulative evaluation																									■	■
Number of LEDs					3	3	2	2	2	2	3	3	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Contacts																										
1 c/o (SPDT) contact							■	■	■	■																
2 c/o (SPDT) contacts													■	■	■	■			■	■	■	■	■	■		
1 n/o		■	■	■																						
1 n/c and 1 n/o					■	■					■	■					■	■								
2 x 1 c/o or 1 x 2 c/o contacts, configurable																									■	■
Reset																										
Manual													■	■	■	■	■	■	■	■	■	■	■	■	■	■
Remote													■	■	■	■	■	■	■	■	■	■	■	■	■	■
Auto		■	■	■	■	■	■	■	■	■	■	■	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[1]	■[2]	■[2]
Test button																	■	■	■	■	■	■	■	■	■	■
Functions																										
Short-circuit detection											■	■					■	■	■	■	■	■				
Short-circuit detection, configurable																							■	■	■	■
Dynamic interrupted wire detection					■	■					■	■					■	■	■	■	■	■	■	■	■	■
Non-volatile fault storage					■	■					■	■					■	■								
Non-volatile fault storage, configurable																							■	■	■	■

[1] For automatic reset, connect terminals S1 to T2.
[2] For automatic reset, connect terminals S1 to 1T2/2T2.

(Table continued on next page)

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Motor protection relays
Thermistor



CM-MSS.12S



CM-MSS.41S



CM-MSS.51S

Selection table (continued)

	Order code	1SVR550805R9300	1SVR550800R9300	1SVR550801R9300	1SVR740720R1400	1SVR730720R1400	1SVR740700R0100	1SVR730700R0100	1SVR740700R2100	1SVR730700R2100	1SVR740722R1400	1SVR730722R1400	1SVR740700R0200	1SVR730700R0200	1SVR740700R2200	1SVR730700R2200	1SVR740712R1400	1SVR730712R1400	1SVR740712R0200	1SVR730712R0200	1SVR740712R2200	1SVR730712R2200	1SVR740712R1200	1SVR730712R1200	1SVR740712R1300	1SVR730712R1300
	Type	CM-MSE	CM-MSE	CM-MSE	CM-MSS.11P	CM-MSS.11S	CM-MSS.12P	CM-MSS.12S	CM-MSS.13P	CM-MSS.13S	CM-MSS.21P	CM-MSS.21S	CM-MSS.22P	CM-MSS.22S	CM-MSS.23P	CM-MSS.23S	CM-MSS.31P	CM-MSS.31S	CM-MSS.32P	CM-MSS.32S	CM-MSS.33P	CM-MSS.33S	CM-MSS.41P	CM-MSS.41S	CM-MSS.51P	CM-MSS.51S
Rated control supply voltage U_s																										
24 V AC		■																								
110-130 V AC			■																							
220-240 V AC				■																						
24-240 V AC/DC					■	■					■	■					■	■					■	■	■	■
24 V AC/DC							■	■					■	■					■	■						
110-130 V AC, 220-240 V AC									■	■					■	■					■	■				
Connection type																										
Push-in terminals					■		■		■		■		■		■		■		■		■		■		■	
Double-chamber cage connection terminals						■		■		■		■		■		■		■		■		■		■		■
Screw		■	■	■																						

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Monitoring relays
Temperature



CM-TCS

Selection table

	Order number	1SVR 730 740 R9100	1SVR 740 740 R9100	1SVR 730 740 R0100	1SVR 740 740 R0100	1SVR 730 740 R9200	1SVR 740 740 R9200	1SVR 730 740 R0200	1SVR 740 740 R0200	1SVR 730 740 R9300	1SVR 740 740 R9300	1SVR 730 740 R0300	1SVR 740 740 R0300	1SVR750740R01100	1SVR760740R01100	1SVR750740R01200	1SVR760740R01200
	Type	CM-TCS.21S	CM-TCS.21P	CM-TCS.11S	CM-TCS.11P	CM-TCS.22S	CM-TCS.22P	CM-TCS.12S	CM-TCS.12P	CM-TCS.23S	CM-TCS.23P	CM-TCS.13S	CM-TCS.13P	CM-TCN.011S	CM-TCN.011P	CM-TCN.012S	CM-TCN.012P
Rated control supply voltage U_s																	
24 V AC/DC		■	■			■	■			■	■						
24-240 V AC/DC				■	■			■	■			■	■	■	■	■	■
Sensor circuits (2 or 3 wire)																	
Number of temperature sensors		1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3
Number of thresholds		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Measuring temperature range																	
-50...+50°C		■	■	■	■												
0...+100°C						■	■	■	■								
0...+200°C										■	■	■	■				
-200°C...+850°C														■	■	■	■
Monitoring function																	
Overtemperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Undertemperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Window temperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Operating principle																	
Open or closed-circuit principle		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																	
c/o		2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Display NFC														■	■	■	■
Modbus RTU																■	■

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Monitoring relays
Liquid level



CM-ENE MIN



CM-ENS.3x

Selection table

	Order code	1SVR 550 855 R9500	1SVR 550 850 R9500	1SVR 550 851 R9500	1SVR 550 855 R9400	1SVR 550 850 R9400	1SVR 550 851 R9400	1SVR 730 850 R0100	1SVR 740 850 R0100	1SVR 730 850 R2100	1SVR 740 850 R2100	1SVR 730 850 R0200	1SVR 740 850 R0200	1SVR 730 850 R2200	1SVR 740 850 R2200	1SVR 730 850 R0300	1SVR 740 850 R0300
	Type	CM-ENE MIN	CM-ENE MIN	CM-ENE MIN	CM-ENE MAX	CM-ENE MAX	CM-ENE MAX	CM-ENS.11S	CM-ENS.11P	CM-ENS.13S	CM-ENS.13P	CM-ENS.21S	CM-ENS.21P	CM-ENS.23S	CM-ENS.23P	CM-ENS.31S	CM-ENS.31P
Rated control supply voltage U_s																	
24-240 V AC/DC								■	■			■	■			■	■
24 V AC		■			■												
110-130 V AC			■			■				■	■			■	■		
220-240 V AC				■			■			■	■			■	■		
Sensor circuit																	
Number of electrodes (including ground reference)		2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Response sensitivity range																	
0-100 kOhm		■	■	■	■	■	■										
5-100 kOhm								adj	adj	adj	adj						
0.1-1000 kOhm												adj	adj	adj	adj	adj	adj
Monitoring function																	
Dry running protection		■	■	■				■	■	■	■	■	■	■	■	■	■
Overflow protection					■	■	■	■	■	■	■	■	■	■	■	■	■
Liquid level control					■	■	■	■	■	■	■	■	■	■	■	■	■
Operating principle																	
Open-circuit principle		■	■	■				■	■	■	■						
Closed-circuit principle					■	■	■										
Open- or closed-circuit principle												sel	sel	sel	sel	sel	sel
Adjustable ON-/OFF-delay																	
0.1-10 s																■	■
Output contacts																	
n/o		1	1	1	1	1	1										
c/o (SPDT)								1	1	1	1	1	1	1	1	2	2
Connection type																	
Push-in terminals									■		■		■		■		■
Double-chamber cage connection terminals								■		■		■		■		■	
Screw		■	■	■	■	■	■										

adj: adjustable
sel: selectable

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Monitoring relays
Accessories



Bar electrode



Suspension electrode

Ordering details

Accessories

Description	For type	Width in mm	For devices	Type	Order code	Pkg qty	Weight (1 pc) g (oz)
Adapter for screw mounting	CM-S CM-S.S/P	22.5	–	ADP.01	1SVR430029R0100	1	18.4 (0.65)
	CM-N CM-N.S/P	45	–	ADP.02	1SVR440029R0100	1	36.7 (1.30)
Marker label	CM-S, CM-N CM-S.S/P CM-N.S/P	–	without DIP switches	MAR.01	1SVR366017R0100	10	0.19 (0.007)
	CM-S, CM-N	–	with DIP switches	MAR.02	1SVR430043R0000	10	0.13 (0.005)
	CM-S.S/P CM-N.S/P	–	with DIP switches	MAR.12	1SVR730006R0000	10	0.152 (0.335)
Sealable transparent cover	CM-S	22.5	–	COV.01	1SVR430005R0100	1	5.2 (0.18)
	CM-N	45	–	COV.02	1SVR440005R0100	1	7.7 (0.27)
	CM-S.S/P	22.5	–	COV.11	1SVR730005R0100	1	4.0 (0.129)
	CM-N.S/P	45	–	COV.12	1SVR750005R0100	1	7 (0.247)

Bar electrodes

Description	Material no.	Type	Order code	Weight (1 pc) kg (lb)
Compact support for 3 bar electrodes	–	CM-KH-3	1SVR450056R6000	0.06 (0.132)
Distance plate for 3 bar electrodes		CM-AH-3	1SVR450056R7000	0.06 (0.132)
Counter nut for 1" thread		CM-GM-1	1SVR450056R8000	0.06 (0.132)
Length: 300 mm	1.4301	CM-SE-300	1SVR450056R0000	0.08 (0.176)
Length: 600 mm	1.4301	CM-SE-600	1SVR450056R0100	0.08 (0.176)
Length: 1000 mm	1.4301	CM-SE-1000	1SVR450056R0200	0.08 (0.176)

Suspension electrodes

Description	Connection	Material no.	Type	Order code	Weight (1 pc) kg (lb)
CM-HE suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Screw	1.4104	CM-HE	1SVR402902R0000	0.074 (0.163)
CM-HC suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Crimp	1.4104	CM-HC	1SVR402902R1000	0.09 (0.198)
CM-HCT suspension electrode suitable for drink water high-alloy steel, material no. 1.4301 (according to EN 10088-1)	Crimp	1.4301	CM-HCT	1SVR402902R2000	0.09 (0.198)

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Monitoring relays
Accessories



CM-CT



CM-CT
with mounted accessories



CM-CT-A
mounted on DIN rail

Plug-in current transformers CM-CT
- Without primary conductor though with foot angle, insulating protective cap and bar fastening screws
- Primary / rated current from 50 A to 600 A
- Secondary current of 1 A or 5 A
- Class 1

Ordering details

Rated primary current	Secondary current	Burden class	Type	Order code	Weight (1 pc) g (oz)
50 A	1 A	1 VA / 1	CM-CT 50/1	1SVR450116R1000	0.31 (0.683)
75 A		1.5 VA / 1	CM-CT 75/1	1SVR450116R1100	0.31 (0.683)
100 A		2.5 VA / 1	CM-CT 100/1	1SVR450116R1200	0.276 (0.608)
150 A		2.5 VA / 1	CM-CT 150/1	1SVR450116R1300	0.32 (0.705)
200 A		2.5 VA / 1	CM-CT 200/1	1SVR450116R1400	0.222 (0.489)
300 A		5 VA / 1	CM-CT 300/1	1SVR450117R1100	0.29 (0.639)
400 A		5 VA / 1	CM-CT 400/1	1SVR450117R1200	0.27 (0.595)
500 A		5 VA / 1	CM-CT 500/1	1SVR450117R1300	0.29 (0.639)
600 A		5 VA / 1	CM-CT 600/1	1SVR450117R1400	0.24 (0.529)
50 A	5 A	1 VA / 1	CM-CT 50/5	1SVR450116R5000	0.3 (0.661)
75 A		1.5 VA / 1	CM-CT 75/5	1SVR450116R5100	0.31 (0.683)
100 A		2.5 VA / 1	CM-CT 100/5	1SVR450116R5200	0.31 (0.683)
150 A		2.5 VA / 1	CM-CT 150/5	1SVR450116R5300	0.28 (0.617)
200 A		5 VA / 1	CM-CT 200/5	1SVR450116R5400	0.29 (0.639)
300 A		5 VA / 1	CM-CT 300/5	1SVR450117R5100	0.252 (0.556)
400 A		5 VA / 1	CM-CT 400/5	1SVR450117R5200	0.26 (0.573)
500 A		5 VA / 1	CM-CT 500/5	1SVR450117R5300	0.208 (0.459)
600 A		5 VA / 1	CM-CT 600/5	1SVR450117R5400	0.21 (0.463)

Accessories

Description	Type	Order code	Weight (1 pc) g (oz)
Snap-on fastener for DIN rail mounting of CM-CT	CM-CT A	1SVR450118R1000	0.009 (0.02)

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Primary switch mode
Single-phase



CP-S.1

Selection table

		Order number	1SVR320361R1000	1SVR320561R1000	1SVR320661R1000	1SVR320761R1000	1SVR320861R1000
			CP-S.1				
Rated output current	3 A		■				
	5 A			■			
	10 A				■		
	20 A					■	
	40 A						■
Rated output power	72 W		■				
	120 W			■			
	240 W				■		
	480 W					■	
	960 W						■
Rated input voltage	100-240 V AC		■	■	■	■	
	100-250 V DC		■	■	■	■	
	110-240 V AC						■
	110-250 V DC						■
Features	Power reserve design		■	■	■	■	■
	Adjustable output voltage		■	■	■	■	■
	Integrated input fuse		■	■	■	■	■
	Short-circuit stable		■	■	■	■	■
	Fold-forward behavior (U/I)		■	■	■	■	■
	Power factor correction		no	act	act	act	act
	Signalling contact		■	■	■	■	■
	Parallel connection		3	3	3	3	3
	Serial connection		2	2	2	2	2
	Coated PCBA		■	■	■	■	■

pas = passive, act = active

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Primary switch mode power supplies
Single-phase



CP-C.1 24/5.0
CP-C.1 24/5.0-C



CP-C.1 24/10.0
CP-C.1 24/10.0-C



CP-C.1 24/20.0
CP-C.1 24/20.0-C



CP-C.1 24/5.0
light grey



CP-C.1 24/10.0
light grey



CP-D 12/0.83,
CP-D 24/0.42

CP-D 12/2.1,
CP-D 24/1.3

CP-D 24/2.5



CP-E 5/0.75

CP-E 12/2.5

CP-E 48/5.0

CP-E 24/20.0

Selection table

Order number	1SVR427041R1000	1SVR427043R1200	1SVR427041R0000	1SVR427043R0100	1SVR427044R0200	1SVR427045R0400	1SVR427033R3000	1SVR427032R1000	1SVR427035R1000	1SVR427030R0000	1SVR427031R0000	1SVR427032R0000	1SVR427034R0000	1SVR427035R0000	1SVR427036R0000	1SVR427030R2000	1SVR427031R2000	1SVR427034R0000	1SVR427035R2000	1SVR360563R1001	1SVR360663R1001	1SVR360763R1001	1SVR360563R2001	1SVR360663R2001	1SVR360763R2001	1SVR361563R1001	1SVR361663R1001	1SVR361763R1001
Single-phase																												
	CP-D						**CP-E**													**CP-C.1**								
Rated output voltage																												
5 V DC							■																					
12 V DC	■	■						■	■																			
24 V DC			■	■	■	■				■	■	■	■	■	■					■	■	■	■	■	■	■	■	■
48 V DC																■	■	■	■									
Rated output current																												
0.42 A			■																									
0.625 A																■												
0.75 A										■																		
0.83 A	■																											
1.25 A											■						■											
1.3 A				■																								
2.1 A		■																										
2.5 A					■			■				■																
3 A							■																					
4.2 A						■																						
5 A													■					■		■			■			■		
10 A									■					■					■		■			■			■		
20 A															■							■			■			■
Rated output power																												
10 W	■		■																									
15 W							■																					
18 W										■																		
25 W		■																										
30 W				■				■			■					■												
60 W					■							■					■											
100 W						■																						
120 W									■				■							■			■			■		
240 W														■				■			■			■			■	
480 W															■				■			■			■			■
Rated input voltage																												
100-240 V AC	■	■	■	■	■	■	■	■		■	■	■				■	■			■	■	■	■	■	■	■	■	■
115/230 V AC auto select									■				■	■				■										
115-230 V AC															■				■									

(Table continued on next page)

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Primary switch mode power supplies
Single-phase



CP-C.1 24/5.0
CP-C.1 24/5.0-C



CP-C.1 24/10.0
CP-C.1 24/10.0-C



CP-C.1 24/20.0
CP-C.1 24/20.0-C



CP-C.1 24/5.0
light grey



CP-C.1 24/10.0
light grey



CP-D 12/0.83,
CP-D 24/0.42

CP-D 12/2.1,
CP-D 24/1.3

CP-D 24/2.5



CP-E 5/0.75

CP-E 12/2.5

CP-E 48/5.0

CP-E 24/20.0

Selection table (continued)

Order number	1SVR427041R1000	1SVR427043R1200	1SVR427041R0000	1SVR427043R0100	1SVR427044R0200	1SVR427045R0400	1SVR427033R3000	1SVR427032R1000	1SVR427035R1000	1SVR427030R0000	1SVR427031R0000	1SVR427032R0000	1SVR427034R0000	1SVR427035R0000	1SVR427036R0000	1SVR427030R2000	1SVR427031R2000	1SVR427034R0000	1SVR427035R2000	1SVR360563R1001	1SVR360663R1001	1SVR360763R1001	1SVR360563R2001	1SVR360663R2001	1SVR360763R2001	1SVR361563R1001	1SVR361663R1001	1SVR361763R1001
Single-phase																												
	CP-D						**CP-E**													**CP-C.1**								
DC input voltage range																												
90-300 V DC																				■	■	■	■	■	■	■	■	■
90-375 V DC								■			■	■				■	■											
120-375 V DC	■	■	■	■	■	■	■			■					■				■									
210-375 V DC									■				■	■					■									
Features																												
Power reserve design																				■	■	■	■	■	■	■	■	■
Adjustable output voltage		■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Integrated input fuse	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Short-circuit stable	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Fold-forward behavior (U/I)		■		■	■	■		■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Fold-back behavior (hiccup)	■		■				■			■																		
Power factor correction									pas				pas	pas	act			pas	act	act	act	act	act	act	act	act	act	act
Signalling contact											■	■	■	■	■					■	■	■	■	■	■	■	■	■
Extended temp. range	■	■	■	■	■	■		■	■		■	■	■	■	■	■	■	■	■				■	■	■			
Parallel connection							■	■	3	■	■	■	3	3	3	■	■	3	3	5	5	5	5	5	5	5	5	5
Serial connection	■	■	■	■	■	■	■	■	2	■	■	■	2	2	2	■	■	2	2	2	2	2	2	2	2	2	2	2
Coated PCBA																							■	■	■			

pas: passive
act: active

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Primary switch mode power supplies
Three-phase



CP-T 24/5.0



CP-T 24/10.0, CP-T 48/5.0



CP-T 24/20.0, CP-T 48/10.0

Selection table

Order number	1SVR427054R0000	1SVR427055R0000	1SVR427056R0000	1SVR427057R0000	1SVR427054R2000	1SVR427055R2000	1SVR427056R2000
	Three-phase						
	CP-T						
Rated output voltage							
24 V DC	■	■	■	■			
48 V DC					■	■	■
Rated output current							
5 A	■				■		
10 A		■				■	
20 A			■				■
40 A				■			
Rated output power							
120 W	■						
240 W		■			■		
480 W			■			■	
960 W				■			■
Rated input voltage							
3 x 400-500 V AC	■	■	■	■	■	■	■
DC input voltage range							
480-820 V DC	■	■	■	■	■	■	■
Features							
Adjustable output voltage	■	■	■	■	■	■	■
Integrated input fuse	■	■	■	■	■	■	■
Short-circuit stable	■	■	■	■	■	■	■
Fold forward behavior (U/I)	■	■	■		■	■	
Fold back behavior (hiccup)	■	■	■	■	■	■	■
Extended temp. range	■	■	■	■	■	■	■
Signalling contact	■	■	■	■			
Parallel connection		2	2	2	2	2	2
Serial connection		2	2	2	2	2	2

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Power supplies
CP-S.3 and CP-S.DC



CP-S.3

Ordering details - power supplies

Description	Rated input voltage	Rated output voltage	Rated output current	Output power	Power reserve	Coated PCBA	Order code
CP-S.3 24/5.0	3~ 400 - 500 V AC	24 V DC	5.0 A	120 W	150 % I_N for up to 5 s	Yes	1SVR340567R1000
CP-S.3 24/10.0			10.0 A	240 W			1SVR340667R1000
CP-S.3 24/20.0			20.0 A	480 W			1SVR340767R1000
CP-S.3 24/40.0			40.0 A	960 W			1SVR360060R2001



CP-S.DC

Ordering details - power supplies

Description	Rated input voltage	Rated output voltage	Rated output current	Output power	Power reserve	Coated PCBA	Order code
CP-S.DC 24/20.0	600 V DC, 420 - 870 V DC	24 V DC	20.0 A	480 W	150 % I_N for up to 5 s	Yes	1SVR320766R1000

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Electronic protection devices
EPD24



EPD24-TB-101-3A

Description
The protection devices EPD24 extend the ABB product range of modular DIN rail components by electronic overcurrent protection modules for selective protection of 24 V DC load circuits. This protection is achieved by a combination of active electronic current limitation in the case of a short circuit and an overload deactivation from 1.1 x I_n upwards.

If a fault occurs in a load circuit, the protection device EPD24 will detect this rapidly and reliably, then disable the power output transistor and hence interrupt the current flow in the defective circuit. The maximum possible overcurrent is always limited to 1.3…1.8 times the selected rated current. An activation of capacitive loads up to 20,000 µF is possible, deactivation only occurring in the case of overloads or short circuits. Selective deactivation of the defective current circuit means undefined error states and a complete system stop are prevented.

Ordering details

Rated current I_n A	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
0.5	829960	EPD24-TB-101-0.5A	2CDE601101R2905	4	0.065 (1.433)
1	829984	EPD24-TB-101-1A	2CDE601101R2001	4	0.065 (1.433)
2	830003	EPD24-TB-101-2A	2CDE601101R2002	4	0.065 (1.433)
3	830027	EPD24-TB-101-3A	2CDE601101R2003	4	0.065 (1.433)
4	830041	EPD24-TB-101-4A	2CDE601101R2004	4	0.065 (1.433)
6	830065	EPD24-TB-101-6A	2CDE601101R2006	4	0.065 (1.433)
8	830089	EPD24-TB-101-8A	2CDE601101R2008	4	0.065 (1.433)
10	830102	EPD24-TB-101-10A	2CDE601101R2010	4	0.065 (1.433)
12	830126	EPD24-TB-101-12A	2CDE601101R2012	4	0.065 (1.433)

Description	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
Busbars for LINE+ and 0 V, grey insulation, length 500 mm[1]	830140	EPD-BB500	2CDE605100R0500	10	0.2 (0.441)
Signal bars for aux. contacts, grey insulation, length 21 mm	830164	EPD-SB21	2CDE605200R0021	10	0.4 (0.882)

[1] Max. load with one line entry I_{max} = 50 A (recommended: mid line entry)
Max. load with two line entries I_{max} = 63 A

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Electronic protection devices
EPD24



EPD24-A4 0.5-12,
Power jumper for 24 V DC and signal jumper for 0 V, signal and reset

Selective protection of 24 V DC load circuits

Electronic protection devices are used for the reliable protection of standard components in industrial automation applications with 24 V DC. The EPD24 offer selective overcurrent protection for the loads connected and react to short circuit or overload more rapidly than the supplying switch mode power supply; they then selectively switch off the electrical circuit affected. In this way straightforward, quick troubleshooting is made possible.
The 4-channel devices feature very high efficiency and significantly reduced power loss. With a rated current setting from 0.5 to 12 A, a width of 25 mm, seamless expandability by means of jumpers, front-top wiring and straightforward combination with ABB switch mode power supplies, they ensure a uniform portfolio.

Characteristics

- 4-channel electronic protection device
- 24 V DC supply terminal
- Variable rated currents can be set on **Advanced** from 0.5 A to 12 A or on **Entry** from 1 A to 10 A
- Selective load protection using electronic trip characteristic curve
- **Advanced** with active linear current limiting, total current max. 48 A
- **Entry** with time-controlled tripping, total current max. 40 A
- Integrated fail-safe element matched to the maximum rated current
- Very high efficiency
- No derating up to 60 °C ambient temperature
- Switching on of capacitive loads up to 40,000 µF at 12 A rated current
- ON/OFF/Reset button with multicolor LED status indicator
- Signal output (13, 14) with 1 NO contact for group signaling
- Reset input (RST) for remote resetting of tripped channels
- All connection terminals equipped with push-in terminals
- Several devices can be combined using power jumpers for supply and signal jumpers for 0 V, signal and reset
- **Entry** and **Advanced** devices can be combined using jumpers

c UL us LISTED
UL 508
CSA C22.2 No. 14
Ind. Cont. Eq.
E321314

Ordering details
Electronic protection devices

Type	Function	Input	Characteristics	Channels	Rated current	Order code
EPD24-E4 1-10	Entry	24 V DC	Time-controlled tripping	4	1–10 A	2CDE601102R0110
EPD24-A4 0.5-12	Advanced	24 V DC	Active current limiting	4	0.5–12 A	2CDE601102R0512

Accessories

Type	Characteristics	Order code
EPD24 jumpers (1 sets)	1 power jumper for 24 V DC and 3 signal jumpers for 0 V, signal and reset	2CDE605300R0010
EPD24 jumpers (5 sets)	5 power jumpers for 24 V DC and 15 signal jumpers for 0 V, signal and reset	2CDE605300R0050
EPD24 jumpers (25 sets)	25 power jumpers for 24 V DC and 75 signal jumpers for 0 V, signal and reset	2CDE605300R0250

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Pluggable interface relays
CR-S range

How to use the selection table
Choose the desired control supply voltage from the column “Control voltage”, e.g. "5 V DC".
Choose the desired kind of connection terminal from the column “Connection terminal”, e.g. "spring".
Choose the desired material of contact from the column “Contact Material” e.g. "gold plated".

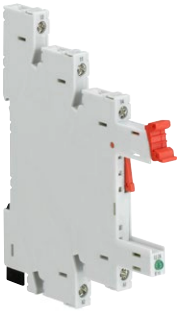
Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code
5 V DC	screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold plated	**CR-S006/024VDC1SZ**	**1SVR405521R1200**	**CR-S005VDC1RG**	**1SVR405501R1020**
12 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020

Example
When you have chosen 5 V DC as control supply voltage, spring connection as connection terminal and gold plated as contact material the following order codes and type designators are valid:

Socket: CR-S006/024VDC1SZ, 1SVR405521R1200
Relay: CR-S005VDC1RG, 1SVR405501R1020

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Pluggable interface relays
CR-S range



CR-S socket



CR-S relay

CR-S range relay assemblies

Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code
5 V DC	screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020
12 V DC	screw	standard	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020
12 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020
24 V DC	screw	standard	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
	spring	standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020
24 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020
48 V AC/DC	screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1R	1SVR405501R4010
		gold plated	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1RG	1SVR405501R4020
	spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1R	1SVR405501R4010
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1RG	1SVR405501R4020
60 V AC/DC	screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1RG	1SVR405501R5020
110-125 V AC/DC	screw	standard	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1RG	1SVR405501R5020
220-240 V AC/DC	screw	standard	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1RG	1SVR405501R5020



CR-S optocoupler

CR-S optocoupler range relay assemblies

Control voltage	Connection terminal	Output characteristics	Socket type	Socket order code	Opto type	Opto order code
24 V DC	screw	Transistor 100 mA - 48 V DC	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1TRA	1SVR405510R3050
	spring		CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRA	1SVR405510R3050
	screw	MOS-FET 2 A - 24 V DC	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1MOS	1SVR405510R3060
	spring		CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1MOS	1SVR405510R3060
	screw	Triac 2 A - 240 V AC	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1TRI	1SVR405510R3070
	spring		CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRI	1SVR405510R3070

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Pluggable interface relays
CR-S range



CR-S complete interface relay

The complete versions of the CR-S range comprise of a pluggable interface relay, socket and marker.

CR-S complete versions

		Relay				Socket					
	Order code	1SVR405501R3010	1SVR405501R3020	1SVR405501R5010	1SVR405501R5020	1SVR405521R3100	1SVR405521R3200	1SVR405521R6100	1SVR405521R6200	1SVR405521R7100	1SVR405521R7200
	Type	CR-S024VDC1R	CR-S024VDC1RG	CR-S060VDC1R	CR-S060VDC1RG	CR-S012/024VADC1SS	CR-S012/024VADC1SZ	CR-S110/125VADC1SS	CR-S110/125VADC1SZ	CR-S220/240VADC1SS	CR-S220/240VADC1SZ
Complete versions											
Order code	**Type**										
1SVR405541R3110	CR-S024VADC1CRS	■				■					
1SVR405541R3120	CR-S024VADC1CRGS		■			■					
1SVR405541R3210	CR-S024VADC1CRZ	■					■				
1SVR405541R3220	CR-S024VADC1CRGZ		■				■				
1SVR405541R6110	CR-S110VADC1CRS			■				■			
1SVR405541R6120	CR-S110VADC1CRGS				■			■			
1SVR405541R6210	CR-S110VADC1CRZ			■					■		
1SVR405541R6220	CR-S110VADC1CRGZ				■				■		
1SVR405541R7110	CR-S230VADC1CRS			■						■	
1SVR405541R7120	CR-S230VADC1CRGS				■					■	
1SVR405541R7210	CR-S230VADC1CRZ			■							■
1SVR405541R7220	CR-S230VADC1CRGZ				■						■

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Pluggable interface relays and optocouplers
CR-P range



CR-P relay

CR-P pluggable relays

	Order code	1SVR405600R4000	1SVR405600R1000	1SVR405600R6000	1SVR405600R8000	1SVR405600R0000	1SVR405600R5000	1SVR405600R7000	1SVR405600R2000	1SVR405600R3000	1SVR405601R4000	1SVR405601R1000	1SVR405601R6000	1SVR405601R8000	1SVR405601R0200	1SVR405601R0000	1SVR405601R5000	1SVR405601R7000	1SVR405601R2000	1SVR405601R3000	1SVR405606R1000	1SVR405606R0000	1SVR405606R7000	1SVR405606R3000
	Type	CR-P012DC1	CR-P024DC1	CR-P048DC1	CR-P110DC1	CR-P024AC1	CR-P048AC1	CR-P110AC1	CR-P120AC1	CR-P230AC1	CR-P012DC2	CR-P024DC2	CR-P048DC2	CR-P110DC2	CR-P012AC2	CR-P024AC2	CR-P048AC2	CR-P110AC2	CR-P120AC2	CR-P230AC2	CR-P024DC2G	CR-P024AC2G	CR-P110AC2G	CR-P230AC2G
Input voltage																								
12 V DC		■									■													
24 V DC			■									■									■			
48 V DC				■									■											
110 V DC					■									■										
12 V AC															■									
24 V AC						■										■						■		
48 V AC							■										■							
110 V AC								■										■					■	
120 V AC									■										■					
230 V AC										■										■				■
Output rating																								
250 V 16 A		■	■	■	■	■	■	■	■	■														
250 V 8 A											■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																								
c/o		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Gold plated contacts																					■	■	■	■

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Pluggable interface relays and optocouplers
CR-P range



CR-P complete version

CR-P range complete versions

	Order code	1SVR405600R4010	1SVR405600R1010	1SVR405600R1011	1SVR405600R1013	1SVR405600R8010	1SVR405600R0010	1SVR405600R2010	1SVR405600R3110	1SVR405600R3011	1SVR405600R3010	1SVR405601R4010	1SVR405601R1010	1SVR405601R1013	1SVR405601R1011	1SVR405601R1012	1SVR405606R1010	1SVR405606R1013	1SVR405606R1011	1SVR405601R8010	1SVR405601R0010	1SVR405601R2010	1SVR405601R3110	1SVR405601R3011	1SVR405601R3012	1SVR405606R3013	1SVR405606R3012	1SVR405606R3010
	Type	CR-P012DC1SS42V	CR-P024DC1SS42V	CR-P024DC1LC42V	CR-P024DC1LC62C	CR-P110DC1SS42CV	CR-P024AC1SS62CV	CR-P120AC1SS92CV	CR-P230AC1SS92CV	CR-P230AC1LS	CR-P230AC1LC92CV	CR-P012DC2SS42V	CR-P024DC2SS42V	CR-P024DC2LS42	CR-P024DC2LS42V	CR-P024DC2LC42	CR-P024DC2GLC42V	CR-P024DC2GLC62C	CR-P024DC2GLC62CV	CR-P110DC2SS42CV	CR-P024AC2SS62CV	CR-P120AC2SS92CV	CR-P230AC2SS92CV	CR-P230AC2LS92CV	CR-P230AC2LC92	CR-P230AC2GLC92	CR-P230AC2GLC92C	CR-P230AC2GLC92CV
Input voltage																												
12 V DC		■										■																
24 V DC			■	■	■								■	■	■	■	■	■	■									
48 V DC																												
110 V DC						■														■								
12 V AC																												
24 V AC							■														■							
48 V AC																												
110 V AC																												
120 V AC								■														■						
230 V AC									■	■	■												■	■	■	■	■	■
Output rating																												
250 V 16 A		■	■	■	■	■	■	■	■	■	■																	
250 V 8 A												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																												
c/o		1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Gold plated contacts																	■	■	■							■	■	■
Socket type																												
Standard socket		■	■			■	■	■	■			■	■							■	■	■	■					
Logical socket				■	■					■	■			■	■	■	■	■	■					■	■	■	■	■
Additional features																												
LED		■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode		■	■	■		■						■	■	■	■	■	■			■					■	■		

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Pluggable interface relays and optocouplers
CR-P range



CR-P complete version

The complete versions of the CR-P range comprise of a pluggable interface relay, socket, holder, marker and a function module.

CR-P complete versions

		Relay								Socket			Function module								Holder
	Order code	1SVR405601R4000	1SVR405601R1000	1SVR405606R1000	1SVR405601R8000	1SVR405601R0000	1SVR405601R2000	1SVR405601R3000	1SVR405606R3000	1SVR405650R1000	1SVR405650R0000	1SVR405650R0200	1SVR405652R0000	1SVR405652R1000	1SVR405652R9100	1SVR405655R0000	1SVR405655R1000	1SVR405654R0100	1SVR405655R0100	1SVR405655R1100	1SVR405659R0000
Complete versions	**Type**	CR-P012DC2	CR-P024DC2	CR-P024DC2G	CR-P110DC2	CR-P024AC2	CR-P120AC2	CR-P230AC2	CR-P230AC2G	CR-PSS	CR-PLS	CR-PLC	CR-P/M 42	CR-P/M 42V	CR-P/M 42CV	CR-P/M 62C	CR-P/M 62CV	CR-P/M 92	CR-P/M 92C	CR-P/M 92CV	CR-PH
Order code	**Type**																				
1SVR405601R4010	CR-P012DC2SS42V	■								■				■							■
1SVR405601R1010	CR-P024DC2SS42V		■							■				■							■
1SVR405601R1013	CR-P024DC2LS42		■								■		■								■
1SVR405601R1011	CR-P024DC2LS42V		■								■			■							■
1SVR405601R1012	CR-P024DC2LC42		■									■	■								■
1SVR405606R1010	CR-P024DC2GLC42V			■								■		■							■
1SVR405606R1013	CR-P024DC2GLC62C			■								■				■					■
1SVR405606R1011	CR-P024DC2GLC62CV			■								■					■				■
1SVR405601R8010	CR-P110DC2SS42CV				■					■					■						■
1SVR405601R0010	CR-P024AC2SS62CV					■				■							■				■
1SVR405601R2010	CR-P120AC2SS92CV						■			■										■	■
1SVR405601R3110	CR-P230AC2SS92CV							■		■										■	■
1SVR405601R3011	CR-P230AC2LS92CV							■			■									■	■
1SVR405601R3012	CR-P230AC2LC92							■				■						■			■
1SVR405606R3013	CR-P230AC2GLC92								■			■						■			■
1SVR405606R3012	CR-P230AC2GLC92C								■			■							■		■
1SVR405606R3010	CR-P230AC2GLC92CV								■			■								■	■

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Pluggable interface relays and optocouplers
CR-M range



CR-M

CR-M pluggable relays without LED

	Order code	1SVR405611R4000	1SVR405611R1000	1SVR405611R6000	1SVR405611R4200	1SVR405611R8000	1SVR405611R8200	1SVR405611R9000	1SVR405611R0000	1SVR405611R5000	1SVR405611R7000	1SVR405611R2000	1SVR405611R3000	1SVR405612R4000	1SVR405612R1000	1SVR405612R6000	1SVR405612R4200	1SVR405612R8000	1SVR405612R8200	1SVR405612R9000	1SVR405612R0000	1SVR405612R5000	1SVR405612R5200	1SVR405612R7000	1SVR405612R2000	1SVR405612R3000	1SVR405613R4000	1SVR405613R1000	1SVR405613R6000	1SVR405613R4200	1SVR405613R8000	1SVR405613R8200	1SVR405613R9000	1SVR405613R0000	1SVR405613R5000	1SVR405613R7000	1SVR405613R2000	1SVR405613R3000
	Type	CR-M012DC2	CR-M024DC2	CR-M048DC2	CR-M060DC2	CR-M110DC2	CR-M125DC2	CR-M220DC2	CR-M024AC2	CR-M048AC2	CR-M110AC2	CR-M120AC2	CR-M230AC2	CR-M012DC3	CR-M024DC3	CR-M048DC3	CR-M060DC3	CR-M110DC3	CR-M125DC3	CR-M220DC3	CR-M024AC3	CR-M048AC3	CR-M060AC3	CR-M110AC3	CR-M120AC3	CR-M230AC3	CR-M012DC4	CR-M024DC4	CR-M048DC4	CR-M060DC4	CR-M110DC4	CR-M125DC4	CR-M220DC4	CR-M024AC4	CR-M048AC4	CR-M110AC4	CR-M120AC4	CR-M230AC4
Input voltage																																					
12 V DC		■												■													■										
24 V DC			■												■													■										
48 V DC				■												■													■									
60 V DC					■												■													■								
110 V DC						■												■													■							
125 V DC							■												■													■						
220 V DC								■												■													■					
24 V AC									■												■													■				
48 V AC										■												■													■				
60 V AC																							■															
110 V AC											■													■												■		
120 V AC												■													■												■	
230 V AC													■													■												■
Output rating																																					
250 V 6 A														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A														■	■	■	■	■	■	■	■	■	■	■	■	■	■											
250 V 12 A		■	■	■	■	■	■	■	■	■	■	■	■																									
Output contacts																																					
c/o		2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4
Gold plated contacts																																						
Additional features																																					
LED																																						
Free-wheeling diode																																						

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Pluggable interface relays and optocouplers
CR-M range



CR-M

CR-M pluggable relays with LED

	Order code	1SVR405611R4100	1SVR405611R4400	1SVR405611R1100	1SVR405611R1400	1SVR405611R6100	1SVR405611R6400	1SVR405611R4300	1SVR405611R8100	1SVR405611R8400	1SVR405611R8300	1SVR405611R8500	1SVR405611R9100	1SVR405611R9400	1SVR405611R0300	1SVR405611R0300	1SVR405611R5100	1SVR405611R7100	1SVR405611R2100	1SVR405611R3100
	Type	CR-M012DC2L	CR-M012DC2LD	CR-M024DC2L	CR-M024DC2LD	CR-M048DC2L	CR-M048DC2LD	CR-M060DC2L	CR-M110DC2L	CR-M110DC2LD	CR-M125DC2L	CR-M125DC2LD	CR-M220DC2L	CR-M220DC2LD	CR-M012AC2L	CR-M024AC2L	CR-M048AC2L	CR-M110AC2L	CR-M120AC2L	CR-M230AC2L
Input voltage																				
12 V DC		■	■																	
24 V DC				■	■															
48 V DC						■	■													
60 V DC								■												
110 V DC									■	■										
125 V DC											■	■								
220 V DC													■	■						
12 V AC															■					
24 V AC																■				
48 V AC																	■			
60 V AC																				
110 V AC																		■		
120 V AC																			■	
230 V AC																				■
Output rating																				
250 V 6 A																				
250 V 10 A																				
250 V 12 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																				
c/o		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Gold plated contacts																				
Additional features																				
LED		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode			■		■		■			■		■		■						

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Pluggable interface relays and optocouplers
CR-M range



CR-M

CR-M pluggable relays with LED

	Order code	1SVR405612R4100	1SVR405612R4400	1SVR405612R1100	1SVR405612R1400	1SVR405612R6100	1SVR405612R6400	1SVR405612R4300	1SVR405612R8100	1SVR405612R8400	1SVR405612R8300	1SVR405612R8500	1SVR405612R9100	1SVR405612R9400	1SVR405612R0300	1SVR405612R0100	1SVR405612R5100	1SVR405612R7100	1SVR405612R2100	1SVR405612R3100
	Type	CR-M012DC3L	CR-M012DC3LD	CR-M024DC3L	CR-M024DC3LD	CR-M048DC3L	CR-M048DC3LD	CR-M060DC3L	CR-M110DC3L	CR-M110DC3LD	CR-M125DC3L	CR-M125DC3LD	CR-M220DC3L	CR-M220DC3LD	CR-M012AC3L	CR-M024AC3L	CR-M048AC3L	CR-M110AC3L	CR-M120AC3L	CR-M230AC3L
Input voltage																				
12 V DC		■	■																	
24 V DC				■	■															
48 V DC						■	■													
60 V DC								■												
110 V DC									■	■										
125 V DC											■	■								
220 V DC													■	■						
12 V AC															■					
24 V AC																■				
48 V AC																	■			
60 V AC																				
110 V AC																		■		
120 V AC																			■	
230 V AC																				■
Output rating																				
250 V 6 A																				
250 V 10 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 12 A																				
Output contacts																				
c/o		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Gold plated contacts																				
Additional features																				
LED		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode			■		■		■			■		■		■						

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Pluggable interface relays and optocouplers
CR-M range



CR-M

CR-M pluggable relays with LED

	Order code	1SVR405613R4100	1SVR405613R4400	1SVR405613R1100	1SVR405614R1100	1SVR405613R6100	1SVR405613R6400	1SVR405613R4300	1SVR405613R8100	1SVR405613R8400	1SVR405613R8300	1SVR405613R8500	1SVR405613R9100	1SVR405613R9400	1SVR405613R0300	1SVR405613R0100	1SVR405613R5100	1SVR405613R7100	1SVR405613R2100	1SVR405613R3100
	Type	CR-M012DC4L	CR-M012DC4LD	CR-M024DC4L	CR-M024DC4LD	CR-M048DC4L	CR-M048DC4LD	CR-M060DC4L	CR-M110DC4L	CR-M110DC4LD	CR-M125DC4L	CR-M125DC4LD	CR-M220DC4L	CR-M220DC4LD	CR-M012AC4L	CR-M024AC4L	CR-M048AC4L	CR-M110AC4L	CR-M120AC4L	CR-M230AC4L
Input voltage																				
12 V DC		■	■																	
24 V DC				■	■															
48 V DC						■	■													
60 V DC								■												
110 V DC									■	■										
125 V DC											■	■								
220 V DC													■	■						
12 V AC															■					
24 V AC																■				
48 V AC																	■			
60 V AC																				
110 V AC																		■		
120 V AC																			■	
230 V AC																				■
Output rating																				
250 V 6 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A																				
250 V 12 A																				
Output contacts																				
c/o		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gold plated contacts																				
Additional features																				
LED		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode			■		■		■			■		■		■						

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Pluggable interface relays and optocouplers
CR-M range



CR-M

CR-M pluggable relays with gold plated contacts

	Order code	1SVR405618R1000	1SVR405618R0000	1SVR405618R7000	1SVR405618R3000	1SVR405618R3000	1SVR405618R4100	1SVR405618R1100	1SVR405618R6100	1SVR405618R4300	1SVR405618R8100	1SVR405618R8300	1SVR405618R9100	1SVR405618R0100	1SVR405618R5100	1SVR405618R7100	1SVR405618R2100	1SVR405618R3100	1SVR405618R4400	1SVR405618R1400
	Type	CR-M024DC4G	CR-M024AC4G	CR-M110AC4G	CR-M230AC4G	CR-M230AC4G	CR-M012DC4LG	CR-M024DC4LG	CR-M048DC4LG	CR-M060DC4LG	CR-M110DC4LG	CR-M125DC4LG	CR-M220DC4LG	CR-M024AC4LG	CR-M048AC4LG	CR-M110AC4LG	CR-M120AC4LG	CR-M230AC4LG	CR-M012DC4LDG	CR-M024DC4LDG
Input voltage																				
12 V DC							■												■	
24 V DC		■						■												■
48 V DC									■											
60 V DC										■										
110 V DC											■									
125 V DC												■								
220 V DC													■							
24 V AC			■											■						
48 V AC															■					
60 V AC																				
110 V AC				■												■				
120 V AC																	■			
230 V AC					■	■												■		
Output rating																				
250 V 6 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A																				
250 V 12 A																				
Output contacts																				
c/o		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gold plated contacts		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Additional features																				
LED								■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode																			■	■

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Pluggable interface relays and optocouplers
CR-M range



CR-M complete version

CR-M range complete versions

	Order code	1SVR405618R4410	1SVR405613R1010	1SVR405613R1011	1SVR405613R1012	1SVR405618R1011	1SVR405618R1010	1SVR405618R1110	1SVR405618R1410	1SVR405613R0010	1SVR405613R3110	1SVR405613R3011	1SVR405613R3012	1SVR405618R3112	1SVR405618R3110	1SVR405618R3111
	Type	CR-M012DC4LDGSS	CR-M024DC4SS42V	CR-M024DC4LS42V	CR-M024DC4LC42	CR-M024DC4GSS42V	CR-M024DC4GLC62CV	CR-M024DC4LGLC22	CR-M024DC4LDGSS	CR-M024AC4LS62CV	CR-M230AC4SS92CV	CR-M230AC4LS92CV	CR-M230AC4LC92	CR-M230AC4GSS92CV	CR-M230AC4LGLC	CR-M230AC4LGSS
Input voltage																
12 V DC		■														
24 V DC			■	■	■	■	■	■	■							
48 V DC																
60 V DC																
110 V DC																
125 V DC																
220 V DC																
24 V AC										■						
48 V AC																
60 V AC																
110 V AC																
120 V AC																
230 V AC											■	■	■	■	■	■
Output rating																
250 V 6 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A																
250 V 12 A																
Output contacts																
c/o		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gold plated contacts		■				■	■	■	■					■	■	■
Socket type																
Standard socket		■	■			■			■		■			■		■
Logical socket				■	■		■	■		■		■	■		■	
Additional features																
LED		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode		■	■	■	■	■		■	■					■		■

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Pluggable interface relays and optocouplers
CR-M range



CR-M complete version

The complete versions of the CR-M range comprise of a pluggable interface relay, socket, holder, marker and where applicable a function module.

CR-M complete versions

Complete versions			Relay									Socket			Function module							Holder
		Order code	1SVR405618R4400	1SVR405613R1000	1SVR405618R1000	1SVR405618R1100	1SVR405618R1400	1SVR405613R0000	1SVR405613R3000	1SVR405618R3000	1SVR405618R3100	1SVR405651R3000	1SVR405651R3100	1SVR405651R3200	1SVR405651R0000	1SVR405652R0000	1SVR405652R1000	1SVR405652R9100	1SVR405655R1000	1SVR405654R0100	1SVR405655R1100	1SVR405659R1000
Order code	Type	Type	CR-M012DC4LDG	CR-M024DC4	CR-M024DC4G	CR-M024DC4LG	CR-M024DC4LDG	CR-M024AC4	CR-M230AC4	CR-M230AC4G	CR-M230AC4LG	CR-M4SS	CR-M4LS	CR-M4LC	CR-P/M 22	CR-P/M 42	CR-P/M 42V	CR-P/M 42CV	CR-P/M 62CV	CR-P/M 92	CR-P/M 92CV	CR-MH
1SVR405618R4410	CR-M012DC4LDGSS		■									■										■
1SVR405613R1010	CR-M024DC4SS42V			■								■					■					■
1SVR405613R1011	CR-M024DC4LS42V			■									■				■					■
1SVR405613R1012	CR-M024DC4LC42			■										■		■						■
1SVR405618R1011	CR-M024DC4GSS42V				■							■					■					■
1SVR405618R1010	CR-M024DC4GLC62CV				■									■					■			■
1SVR405618R1110	CR-M024DC4LGLC22					■								■	■							■
1SVR405618R1410	CR-M024DC4LDGSS						■					■										■
1SVR405613R0010	CR-M024AC4LS62CV							■					■						■			■
1SVR405613R3110	CR-M230AC4SS92CV								■			■									■	■
1SVR405613R3011	CR-M230AC4LS92CV								■				■								■	■
1SVR405613R3012	CR-M230AC4LC92								■					■						■		■
1SVR405618R3112	CR-M230AC4GSS92CV									■		■									■	■
1SVR405618R3110	CR-M230AC4LGLC										■			■								■
1SVR405618R3111	CR-M230AC4LGSS										■	■										■

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Pluggable interface relays and optocouplers
CR-P/M range



CR-P/M ...

CR-P/M function modules

	Order code	1SVR405651R0000	1SVR405652R0000	1SVR405652R1000	1SVR405652R4000	1SVR405652R4100	1SVR405652R9000	1SVR405652R9100	1SVR405653R0000	1SVR405653R4000	1SVR405653R1000	1SVR405654R0000	1SVR405654R1000	1SVR405654R4000	1SVR405654R4100	1SVR405654R0100	1SVR405654R1100	1SVR405655R0000	1SVR405655R1000	1SVR405655R4000	1SVR405655R4100	1SVR405655R0100	1SVR405655R1100	1SVR405656R0000	1SVR405656R1000	1SVR405656R2000
	Type	CR-P/M 22	CR-P/M 42	CR-P/M 42V	CR-P/M 42B	CR-P/M 42BV	CR-P/M 42C	CR-P/M 42CV	CR-P/M 52B	CR-P/M 52D	CR-P/M 52C	CR-P/M 62	CR-P/M 62V	CR-P/M 62E	CR-P/M 62EV	CR-P/M 92	CR-P/M 92V	CR-P/M 62C	CR-P/M 62CV	CR-P/M 62D	CR-P/M 62DV	CR-P/M 92C	CR-P/M 92CV	CR-P/M 72	CR-P/M 72A	CR-P/M 82
Related control supply voltage																										
6-220 V DC		■																								
6-24 V DC			■	■								■	■					■	■							
24-60 V DC				■	■	■								■	■					■	■						
110 V DC							■	■																		
110-230 V DC											■					■	■					■	■			
6-24 V AC									■			■	■					■	■							
24-60 V AC										■				■	■					■	■					
110-230 V AC											■					■	■					■	■			
24 V AC																							■		
115 V AC																								■	
230 V AC																									■
24-240 V AC/DC																									
Function																									
Diode - reverse polarity protection / free-wheeling diode		■																							
Diode and LED - reverse polarity protection / free-wheeling diode			■	■	■	■	■	■																	
RC element - spark quenching									■	■	■														
Diode and LED												■	■	■	■	■	■									
Varistor and LED - overvoltage protection																		■	■	■	■	■	■			
Varistor - overvoltage protection																								■	■	■
LED red			■		■		■					■		■		■		■		■		■				
LED green				■		■		■					■		■		■		■		■		■			

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Pluggable interface relays and optocouplers
CR-U range



CR-U

CR-U pluggable relays without LED

	Order code	1SVR405621R4000	1SVR405621R1000	1SVR405621R6000	1SVR405621R8000	1SVR405621R9000	1SVR405621R0000	1SVR405621R5000	1SVR405621R7000	1SVR405621R2000	1SVR405621R3000	1SVR405622R4000	1SVR405622R1000	1SVR405622R6000	1SVR405622R8000	1SVR405622R8200	1SVR405622R9000	1SVR405622R0000	1SVR405622R5000	1SVR405622R5200	1SVR405622R7000	1SVR405622R2000	1SVR405622R3000
	Type	CR-U012DC2	CR-U024DC2	CR-U048DC2	CR-U110DC2	CR-U220DC2	CR-U024AC2	CR-U048AC2	CR-U110AC2	CR-U120AC2	CR-U230AC2	CR-U012DC3	CR-U024DC3	CR-U048DC3	CR-U110DC3	CR-U125DC3	CR-U220DC3	CR-U024AC3	CR-U048AC3	CR-U060AC3	CR-U110AC3	CR-U120AC3	CR-U230AC3
Input voltage																							
12 V DC		■										■											
24 V DC			■										■										
48 V DC				■										■									
110 V DC					■										■								
125 V DC						■										■							
220 V DC							■										■						
12 V AC																							
24 V AC								■										■					
48 V AC									■										■				
60 V AC																				■			
110 V AC										■											■		
120 V AC											■											■	
230 V AC																							■
Output rating																							
250 V 10 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																							
c/o		2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
Gold plated contacts																							

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Pluggable interface relays and optocouplers

CR-U range



CR-U

CR-U pluggable relays with LED

	Order code	1SVR405621R4100	1SVR405621R4400	1SVR405621R1100	1SVR405621R1400	1SVR405621R6100	1SVR405621R6400	1SVR405621R8100	1SVR405621R8400	1SVR405621R9100	1SVR405621R0300	1SVR405621R0100	1SVR405621R5100	1SVR405621R7100	1SVR405621R2100	1SVR405621R3100	1SVR405622R4100	1SVR405622R4400	1SVR405622R1100	1SVR405623R1100	1SVR405622R6100	1SVR405622R6400	1SVR405622R8100	1SVR405622R8400	1SVR405622R9100	1SVR405622R0300	1SVR405622R0100	1SVR405622R5100	1SVR405622R7100	1SVR405622R2100	1SVR405622R3100
	Type	CR-U012DC2L	CR-U012DC2LD	CR-U024DC2L	CR-U024DC2LD	CR-U048DC2L	CR-U048DC2LD	CR-U110DC2L	CR-U110DC2LD	CR-U220DC2L	CR-U012AC2L	CR-U024AC2L	CR-U048AC2L	CR-U110AC2L	CR-U120AC2L	CR-U230AC2L	CR-U012DC3L	CR-U012DC3LD	CR-U024DC3L	CR-U024DC3LD	CR-U048DC3L	CR-U048DC3LD	CR-U110DC3L	CR-U110DC3LD	CR-U220DC3L	CR-U012AC3L	CR-U024AC3L	CR-U048AC3L	CR-U110AC3L	CR-U120AC3L	CR-U230AC3L
Input voltage																														
12 V DC		■	■														■	■												
24 V DC				■	■														■	■										
48 V DC						■	■														■	■								
110 V DC								■	■														■							
125 V DC																								■						
220 V DC										■															■					
12 V AC											■															■				
24 V AC												■															■			
48 V AC													■															■		
60 V AC																														
110 V AC														■															■	
120 V AC															■															■	
230 V AC																■														■
Output rating																														
250 V 10 A		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																														
c/o		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Gold plated contacts																														
Additional features																														
LED		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode			■		■		■		■									■		■		■		■							

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Pluggable interface relays and optocouplers
CR-U range



CR-U...



CR-U T

CR-U function modules

	Order code	1SVR405661R0000	1SVR405662R0000	1SVR405662R1000	1SVR405662R4000	1SVR405662R4100	1SVR405662R9000	1SVR405662R9100	1SVR405663R0000	1SVR405663R4000	1SVR405663R1000	1SVR405664R0000	1SVR405664R1000	1SVR405664R4000	1SVR405664R4100	1SVR405664R0100	1SVR405664R1100	1SVR405665R0000	1SVR405665R1000	1SVR405665R4000	1SVR405665R4100	1SVR405665R0100	1SVR405665R1100	1SVR405666R0000	1SVR405666R1000	1SVR405666R2000	1SVR405677R0000
	Type	CR-U 21	CR-U 41	CR-U 41V	CR-U 41B	CR-U 41BV	CR-U 41C	CR-U 41CV	CR-U 51B	CR-U 51D	CR-U 51C	CR-U 61	CR-U 61V	CR-U 61E	CR-U 61EV	CR-U 91	CR-U 91V	CR-U 61C	CR-U 61CV	CR-U 61D	CR-U 61DV	CR-U 91C	CR-U 91CV	CR-U 71	CR-U 71A	CR-U 81	CR-U T
Related control supply voltage																											
6-220 V DC		■																									
6-24 V DC			■	■					■			■	■					■	■								
24-60 V DC					■	■				■				■	■					■	■						
110 V DC							■	■																			
110-230 V DC											■					■	■					■	■				
6-24 V AC									■			■	■					■	■								
24-60 V AC										■				■	■					■	■						
110-230 V AC											■					■	■					■	■				
24 V AC																							■				
115 V AC																								■			
230 V AC																									■		
24-240 V AC/DC																											■
Function																											
Diode - reverse polarity protection / free wheeling diode		■																									
Diode and LED - Reverse polarity protection / free-wheeling diode and LED to indicate energized coil			■	■	■	■	■	■																			
RC element - Spark quenching									■	■	■																
Diode and LED - LED to indicate energized coil												■	■	■	■	■	■										
Varistor and LED - Overvoltage protection and LED to indicate energized coil																		■	■	■	■	■	■				
Varistor - Overvoltage protection																								■	■	■	
Multi-function time module																											■
LED red			■		■		■					■		■		■		■		■		■					
LED green				■		■		■					■		■		■		■		■		■				■

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Boxed interface relays
R600 range



R600 - 6 mm



R600 - 12 mm

Selection table

	Order number	1SNA645034R2300	1SNA645036R2500	1SNA645534R2500	1SNA645073R0000	1SNA645035R2400	1SNA645075R0000	1SNA645535R2600	1SNA645019R0400	1SNA645519R0600	1SNA645014R2700	1SNA645018R0300	1SNA645518R0500	1SNA645514R2100	1SNA645001R0300	1SNA645005R0700	1SNA645501R0500	1SNA645505R0100	1SNA645012R2500	1SNA645512R2700	1SNA645071R0000	1SNA645571R0000	1SNA645072R0000	1SNA645572R0000	1SNA645002R0400	1SNA645006R0000
	Type	RB121P-5VDC	RB121PG-5VDC	RBR121P-5VDC	RB121-12VDC	RB121P-12VDC	RB121G-12VDC	RBR121P-12VDC	RB101R-24VUC	RBR101R-24VUC	RB111-24VUC	RB111R-24VUC	RBR111R-24VUC	RBR111-24VUC	RB121-24VUC	RB121G-24VUC	RBR121-24VUC	RBR121G-24VUC	RB122G-24VUC	RBR122G-24VUC	RB121-24VDC	RBR121-24VDC	RB121G-24VDC	RBR121G-24VDC	RB121-48-60VUC	RB121G-48-60VUC
Input voltage																										
5 V DC		■	■	■																						
12 V DC					■	■	■	■																		
24 V DC									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
48-60 V DC																									■	■
115 V DC																										
230 V DC																										
60-230 V DC																										
24 V AC									■	■	■	■	■	■	■	■	■	■	■							
48-60 V AC																									■	■
115 V AC																										
230 V AC																										
60-230 V AC																										
Output rating																										
10 mA - 6 A		■		■	■	■		■	■	■	■	■	■	■	■		■				■	■			■	
3 mA - 6 A			■				■									■		■					■	■		■
1 mA - 8 A																			■	■						
Output contacts																										
c/o		1	1	1	1	1	1	1							1	1	1	1	2	2	1	1	1	1	1	1
n/o											1	1	1	1												
n/c									1	1																
Gold plated contacts			■				■									■		■	■	■			■	■		■
Terminal type																										
Screw		■	■		■	■	■		■		■	■			■	■			■		■		■		■	■
Spring				■				■		■			■	■			■	■		■		■		■			

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Boxed interface relays
R600 range



R600 - 6 mm



R600 - 12 mm

Selection table

	Order number	1SNA645502R0600	1SNA645506R0200	1SNA645040R1500	1SNA645540R1700	1SNA645003R0500	1SNA645007R0100	1SNA645046R0700	1SNA645503R0700	1SNA645507R0300	1SNA645041R0200	1SNA645541R0400	1SNA645016R2100	1SNA645017R2200	1SNA645004R0400	1SNA645008R1200	1SNA645011R2400	1SNA645504R0000	1SNA645508R1400	1SNA645511R2600	1SNA645013R2600	1SNA645513R2000	1SNA645020R0100	1SNA645520R0300
	Type	RBR121-48-60VUC	RBR121G-48-60VUC	RB122G-48-60VUC	RBR122G-48-60VUC	RB121-115VUC	RB121G-115VUC	RB121R-115VUC	RBR121-115VUC	RBR121G-115VUC	RB122G-115VUC	RBR122G-115VUC	RB111-115VUC	RB111-230VUC	RB121-230VUC	RB121G-230VUC	RB121R-230VUC	RB121-230VUC	RBR121G-230VUC	RBR121R-230VUC	RB122G-230VUC	RBR122G-230VUC	RB121-60-230VUC	RBR121-60-230VUC
Input voltage																								
5 V DC																								
12 V DC																								
24 V DC																								
48-60 V DC		■	■	■	■																			
115 V DC						■	■	■	■	■	■	■	■											
230 V DC														■	■	■	■	■	■	■	■	■		
60-230 V DC																							■	■
24 V AC																								
48-60 V AC		■	■	■	■																			
115 V AC						■	■	■	■	■	■	■	■											
230 V AC														■	■	■	■	■	■	■	■	■		
60-230 V AC																							■	■
Output rating																								
10 mA - 6 A		■				■		■	■				■	■	■		■	■		■			■	■
3 mA - 6 A			■				■			■						■			■					
1 mA - 8 A				■	■						■	■									■	■		
Output contacts																								
c/o		1	1	2	2	1	1	1	1	1	2	2			1	1	1	1	1	1	2	2	1	1
n/o													1	1										
n/c																								
Gold plated contacts			■	■	■		■			■	■	■				■			■		■	■		
Terminal type																								
Screw				■		■	■	■			■		■	■	■	■	■				■		■	
Spring		■	■		■				■	■		■						■	■	■		■		■

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Boxed optocouplers
R600 range



R600 - 6 mm



R600 - 12 mm

Selection table

	Order number	1SNA645047R0000	1SNA645547R0200	1SNA645021R2600	1SNA645521R2000	1SNA645049R1200	1SNA645549R1400	1SNA645022R2700	1SNA645522R2100	1SNA645050R1700	1SNA645550R1100	1SNA645051R0400	1SNA645025R2200	1SNA645024R2100	1SNA645551R0600	1SNA645525R2400	1SNA645524R2300	1SNA645053R0600	1SNA645553R0000	1SNA645054R0700	1SNA645058R1300	1SNA645026R2300	1SNA645526R2500	1SNA645559R1600	1SNA645027R2400	1SNA645029R0600	1SNA645527R2600	1SNA645529R0000	1SNA645062R0700	1SNA645028R0500
	Type	OBIC0100-5-12VDC	OBRIC0100-5-12VDC	OBIC0100-24VDC	OBRIC0100-24VDC	OBIC0100-48-60VUC	OBRIC0100-48-60VUC	OBIC0100-115-230	OBRIC0100-115-230	OBOC2000-5-12VDC	OBROC2000-5-12VDC	OBOC2000-24VDC	OBOC2000-24VUC	OBOC5000-24VDC	OBROC2000-24VDC	OBROC2000-24VUC	OBROC5000-24VDC	OBOC2000-48-60VUC	OBROC2000-48-60VUC	OBOC2000-115VUC	OBOC5000-115VUC	OBOC2000-230VUC	OBROC2000-230VUC	OBROC5000-230VUC	OBOA1000-24VDC	OBOA2000-24VDC	OBROA1000-24VDC	OBROA2000-24VDC	OBOA1000-115VUC	OBOA1000-230VUC
Input voltage																														
5-12 V DC		■	■							■	■																			
24 V DC				■	■							■	■	■	■	■	■									■	■	■	■		
48-60 V DC						■	■											■	■												
115-230 V DC								■	■																						
115 V DC																				■	■								■	
230 V DC								■	■													■	■	■						■
24 V AC													■			■														
48-60 V AC						■	■											■	■											
115-230 V AC								■	■																					
115 V AC																				■	■								■	
230 V AC																						■	■	■						■
Output rating																														
100 mA		■	■	■	■	■	■	■	■																					
1 A																									■		■		■	■
2 A										■	■	■	■		■	■		■	■	■		■	■			■		■			
5 A														■			■				■			■							
Output voltage																														
58 V DC		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
230 V AC																										■		■		
400 V AC																									■		■		■	■
Terminal type																														
Screw		■		■		■		■		■		■	■	■				■		■	■	■			■	■			■	■
Spring			■		■		■		■		■				■	■	■		■				■	■			■	■		
Kind of output																														
Transistor		■	■	■	■	■	■	■	■																					
MOS-FET										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
Triac																									■	■	■	■	■	■

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Limit switches
Overview

Limit switches are electromechanical devices. The contacts are mechanically linked to an actuator for visible operations. By combining different types of actuators and casings, our limit switches are perfectly suited to a large variety of applications.



Prewired LS2..

LS	20	P	24	B	11	-	U	01

Limit Switch

2 = Pre-wired limit switch casing width: 30 mm

0 = 1 cable output left / right
1 = 1 cable output bottom

Plastic casing

Actuator
10 ... 92

Contact blocks
11 = 1 N.O. + 1 N.C., up to 10 A

Snap action
B = Zb Snap

Cable length
01 = 1 m

U = cable UL 62 - PVC



Cable inlet LS3.., LS4..

LS	32	M	41	B	11

Limit Switch

3 = Casing width: 30 mm

2 = 1 cable inlet M16 x 1.5 for ISO 16 cable gland
3 = 1 cable inlet M20 x 1.5 for ISO 20 cable gland
5 = 1 cable inlet by 1/2" NPT plastic adaptor delivered not mounted

4 = Casing width: 40 mm

3 = 1 cable inlet M20 x 1.5 for ISO 20 cable gland
5 = 1 cable inlet for 1/2" NPT cable gland

Metal casing

Actuator
10 ... 92

Snap action
B = Zb Snap

Contact types
11 = 1 N.O. + 1 N.C. contacts

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

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Limit switches
Overview

Actuators and movements to be detected

Actuator type	Symbol	Actuator number	Comments*
Plungers		**10** **11** **21**	Plastic or metal plunger
Roller plungers		**12** **13** **14** **15** **22** **24**	Plastic or metal roller Roller or ball at the tip
Roller levers + plunger	 or 	**31** **32**	For horizontal or vertical movement
Roller levers		**41** **42** **45** **46**	Plastic, metal or rubber roller Different roller diameters Different lever sizes and shape
Adjustable roller levers		**51** **52**	Plastic, metal or rubber roller Different roller diameters
Rod Levers		**71** **72**	Metal, fiber glass or nylon rod Different rod diameters
Spring rod levers	 or 	**91** **92**	Plain or insulated spring tip

* NOTE: a same number can be a slightly different actuator from one range to the other. For accurate description of the actuator, please refer to the ordering details pages.
Ex: actuator n°13 is a plastic roller plunger for LS20 and LS30 but a metal roller plunger for LS40 ranges.

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

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Limit switches
Overview



IP67 — LS 2 - — 30 mm width — P Plastic — Double insulation; M Metal

Actuators and movements to be detected

11 12 13 14 15 21 22 24 41
42 45 46 51 54 71 91 92



IP66 — LS 3 - 30 mm width; LS 4 - 40 mm width — M Metal

Actuators and movements to be detected

11 12 13 31 32 41 42
51 52 71 72 91 92



IP65 — LS 3 - 30 mm width; LS 4 - 40 mm width — P Plastic — Double insulation

Actuators and movements to be detected

10 11 12 13 31 32 41
42 51 52 71 72 91 92

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

Double insulation ⧈

A **Class II** or **double insulated** electrical appliance does not require a safety connection to electrical earth (ground).

The degree of protection required for electrical equipment depends on the environmental characteristics.

Ingress Protection	First digit solids protection		Second digit liquids protection	
IP	**6**	Dust Tight	**5**	Low pressure water jet
			6	Powerful water jets
			7	Temporary immersion (up to 1 m)

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Limit switches
Stocked switches



Limit switches

Casing width	Electrical connection	Casing material	Actuator type	Contact type	Contact block	Ordering code
20mm	Pre-wired	Metal	45mm rubber roller lever	Snap action	1 NC+1NO	LS20M42B11-U02
30mm	1/2" NPT	Plastic	n/a	Slow action	1 NC+1NO	LS35P80D11-S
30mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS35P71B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	1 NC+1NO	LS35P41B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	2 NC	LS35P41B02-R
30mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35M51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35P51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	2 NC	LS35P51B02
30mm	Pre-wired	Metal	Plain steel plunger	Snap action	1 NC+1NO	LS20M11B11-U03
30mm	1/2" NPT	Plastic	Plain steel plunger	Snap action	1 NC+1NO	LS35P11B11
30mm	1/2" NPT	Plastic	Plastic roller plunger	Snap action	1 NC+1NO	LS35P13B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Snap action	1 NC+1NO	LS35P31B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Slow action	1 NC+1NO	LS35P32D11-R
30mm	1/2" NPT	Plastic	Spring rod	Snap action	1 NC+1NO	LS35P91B11
30mm	1/2" NPT	Plastic	Straight key	Snap action	1 NC+1NO	LS35P16B11
40mm	1/2" NPT	Metal	w/out head	Snap action	1 NC+1NO	LS45M00B11
40mm	1/2" NPT	Metal	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS45M71B11
40mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	2 NC+1NO	LS45P71B11
40mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45M51B11
40mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45P51B11
40mm	1/2" NPT	Metal	18mm plastic roller lever	Snap action	1 NC+1NO	LS45M41B11
40mm	1/2" NPT	Metal	Adj 22mm SS ball-bearing roller	Snap action	1 NC+1NO	LS45M53B11
40mm	1/2" NPT	Metal	Adj 45mm rubber roller lever	Snap action	1 NC+1NO	LS45M54B11
40mm	1/2" NPT	Metal	Adj 52mm rubber roller lever	Snap action	1 NC+1NO	LS45M52B11
40mm	1/2" NPT	Metal	Plastic roller plunger	Snap action	1 NC+1NO	LS45M13B11
40mm	1/2" NPT	Metal	Spring rod	Snap action	1 NC+1NO	LS45M91B11
40mm	1/2" NPT	Metal	SS lateral plunger	Snap action	1 NC+1NO	LS45M21B11
60mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS75P41B11
60mm	1/2" NPT	Metal	Pull action w/ring	Snap action	1 NC+1NO	LS75M98B11-A
Yellow free movement IPS footswitch					1 NC+1NO	IPSY1A11

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

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CONTROL SECTION 9

Softstarters

PSR, PSRC, PSE, PSTX and ELV-X



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Hydraulic elevator softstarter ELV-X

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PSR
Introduction



Technical specifications
- Rated operational current: 3...105 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...240 V AC, 50/60 Hz or 24 V AC/DC

Features
- Two-phase controlled
- Soft start and stop with voltage ramp
- Built-in bypass for energy saving and easy installation
- Easy set-up by three potentiometers
- Run and Top of Ramp relays available for monitoring
- Connection kits available for connection to ABB's manual motor starters (MMS)

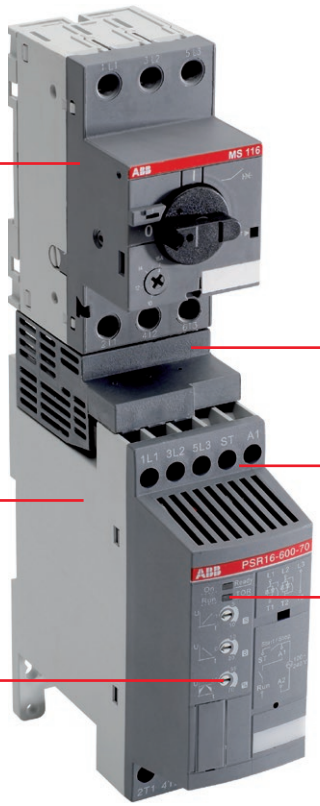
Protections
- Motor protection with manual motor starter

Communication
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Motor protection with manual motor starter PSR together with the MMS to get a complete motor starter with soft start and stop together with overload and short circuit protection.

Screw or DIN-rail mounted PSR is fast and easy to install by using screw mounting or DIN-rail mounting (PSR3 ... PSR45).

Three potentiometers for settings Set-up is made very easy with only three potentiometers, for start ramp time, stop ramp time and initial/end voltage level.



Connection kit (optional) simplifies installation of the PSR by making the connection to the MMS screwless.

Output signal relays for Run and Top of ramp (PSR25 ... PSR105).

LED indicators for On/Ready and Run/Top of ramp.

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PSR
Coordination examples


PSR3 ... PSR16


PSR25 ... PSR30


PSR37 ... PSR45


PSR60 ... PSR105

Normal start in-line connected

Softstarter	PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105[2]
IEC kW (400V)	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
IEC max A	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL HP (440-480 V)	2	3	5	7.5	10	15	20	25	30	40	50	60	75
UL max FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104
Using manual motor starters type 1 coordination will be achieved[1]	**Manual motor starter (50 kA) 400 V, 40 °C**												
	MS116	MS116	MS116	MS132	MS132	MS132	MS132	MS165	MS165	MS165	MS495	MS495	MS495
Using gG fuses type 1 coordination will be achieved[1]	**Fuse protection (50 kA) gG Fuse**												
	10 A	16 A	25 A	32 A	32 A	50 A	63 A	100 A	125 A	125 A	200 A	200 A	250 A
Suitable switch fuse for the above gG fuses[1]	**Switch fuse**												
							OS32G			OS125G			OS250
J-type fuses for UL coordination[1]	**Max. fuse, J-type**												
	35 A	35 A	35 A	35 A	35 A	60 A	60 A	90 A	90 A	110 A	125 A	150 A	200 A
Overload protection is used to protect the motor from over heating[1]	**Thermal overload relay**												
								TF42DU			TA75DU		TA110DU
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**												
	AF9	AF9	AF9	AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] Can be used with MS495 up to 100 A



Coordination tables (SOC) >
For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

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PSR

Normal starts, class 10, in-line
Ordering details



PSR3 ... PSR16



PSR25 ... PSR30



PSR37 ... PSR45



PSR60 ... PSR105

Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 100...240 V AC, 50/60 Hz

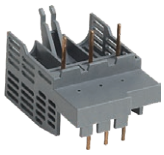
IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
0.75	1.5	2.2	3.9	0.5	0.75	2	2	3.4	PSR3-600-70	1SFA896103R7000	0.4	0.8
1.5	3	4	6.8	1	1.5	3	5	6.1	PSR6-600-70	1SFA896104R7000	0.4	0.8
2.2	4	4	9	2	2	5	7.5	9	PSR9-600-70	1SFA896105R7000	0.4	0.8
3	5.5	5.5	12	3	3	7.5	10	11	PSR12-600-70	1SFA896106R7000	0.4	0.8
4	7.5	7.5	16	3	5	10	10	15.2	PSR16-600-70	1SFA896107R7000	0.4	0.8
5.5	11	15	25	7.5	7.5	15	20	24.2	PSR25-600-70	1SFA896108R7000	0.6	1.3
7.5	15	18.5	30	7.5	10	20	25	28	PSR30-600-70	1SFA896109R7000	0.6	1.3
7.5	18.5	22	37	10	10	25	30	34	PSR37-600-70	1SFA896110R7000	1.0	2.2
11	22	30	45	15	15	30	40	46.2	PSR45-600-70	1SFA896111R7000	1.0	2.2
15	30	37	60	20	20	40	50	59.4	PSR60-600-70	1SFA896112R7000	2.1	4.6
22	37	45	72	20	25	50	60	68	PSR72-600-70	1SFA896113R7000	2.1	4.6
22	45	55	85	25	30	60	75	80	PSR85-600-70	1SFA896114R7000	2.1	4.6
30	55	55	105	30	40	75	100	104	PSR105-600-70	1SFA896115R7000	2.1	4.6

Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 24 V AC/DC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
0.75	1.5	2.2	3.9	0.5	0.75	2	2	3.4	PSR3-600-11	1SFA896103R1100	0.4	0.8
1.5	3	4	6.8	1	1.5	3	5	6.1	PSR6-600-11	1SFA896104R1100	0.4	0.8
2.2	4	4	9	2	2	5	7.5	9	PSR9-600-11	1SFA896105R1100	0.4	0.8
3	5.5	5.5	12	3	3	7.5	10	11	PSR12-600-11	1SFA896106R1100	0.4	0.8
4	7.5	7.5	16	3	5	10	10	15.2	PSR16-600-11	1SFA896107R1100	0.4	0.8
5.5	11	15	25	7.5	7.5	15	20	24.2	PSR25-600-11	1SFA896108R1100	0.6	1.3
7.5	15	18.5	30	7.5	10	20	25	28	PSR30-600-11	1SFA896109R1100	0.6	1.3
7.5	18.5	22	37	10	10	25	30	34	PSR37-600-11	1SFA896110R1100	1.0	2.2
11	22	30	45	15	15	30	40	46.2	PSR45-600-11	1SFA896111R1100	1.0	2.2
15	30	37	60	20	20	40	50	59.4	PSR60-600-11	1SFA896112R1100	2.1	4.6
22	37	45	72	20	25	50	60	68	PSR72-600-11	1SFA896113R1100	2.1	4.6
22	45	55	85	25	30	60	75	80	PSR85-600-11	1SFA896114R1100	2.1	4.6
30	55	55	105	30	40	75	100	104	PSR105-600-11	1SFA896115R1100	2.1	4.6

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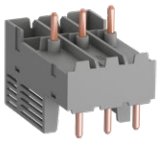
PSR
Accessories



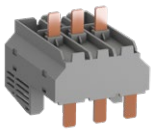
Connection kit for PSR3...16



Connection kit for PSR25...30



Connection kit for PSR37...45



Connection kit for PSR60...72

Connection kit

Article	Breaker type	Type	Order code	Pkg qty	Net kg	lb
PSR3...16	MS116/132	PSR16-MS116	1SFA896211R1001	1	0.03	0.08
PSR25...30	MS132	PSR30-MS132	1SFA896212R1001	1	0.03	0.08
PSR37...45	MS165	PSR45-MS165	1SFA896216R1001	1	0.05	0.11
PSR60...72	MS165	PSR60-MS165	1SFA896215R1001	1	0.05	0.11
PSR60...105	MS495	PSR105-MS495	1SAM501903R1001	1	0.03	0.08



Fan

Fan

Article	Type	Order code	Pkg qty	Net kg	lb
PSR3...16	PSR-FAN3-45A	1SFA896311R1001	1	0.01	0.02
PSR25...30	PSR-FAN60-105A	1SFA896313R1001	1	0.01	0.03



Terminal enlargements

Terminal enlargements

Article	Type	Order code	Pkg qty	Net kg	lb
PSR60... PSR105	PSLW-72	1SFA899002R1072	1	0.16	0.35

Note: Wire range mm² 1 x 10...50 mm², 2 x 10...25 mm²



Fieldbus plug adapter

Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11

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PSR
Technical data

Softstarter types	PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105
Max. Power loss at rated I_e	0.7 W	2.9 W	6.5 W	11.5 W	20.5 W	25 W	36 W	5.5 W	8.1 W	3.6 W	5.2 W	7.2 W	6.6 W

Technical data	
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V +10%/-15%, 50/60 Hz ±5%
Rated control supply voltage U_s	100...240 V AC, 50/60Hz ±5% or 24 V AC/DC, +10%/-15%
Starting capacity at I_e	4 x I_e for 6 sec.
Maximum altitude	4000 m (13123 ft)[3]
Number of starts per hour	
Standard	10[1]
With aux. fan	20[1]
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)[2]
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	
Main circuit	PSR3 - PSR30: IP20 PSR37 - PSR105: IP10
Control circuit	PSR3 - PSR30: IP20
Power consumption	
At 100...240 V AC	PSR3 - PSR30: 12 VA PSR37 - PSR105 10 VA
At 24 V AC/DC	PSR3 - PSR30: 5 W PSR37 - PSR105: 10 VA
Signal relays for run signal: PSR3.. 105	
Resistive load	3 A
AC-15 (contactor)	0.5 A
Signal relays for top of ramp signal: PSR25... 105	
Resistive load	3 A
AC-15 (contactor)	0.5 A
LED	
For On/Ready	Green
For Run/Top of ramp	Green
Settings	
Ramp time during start	1...20 sec.
Ramp time during stop	0...20 sec.
Initial- and end voltage	40...70%

[1] Valid for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8% per °C (0.44% per °F).
[3] When used at high altitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the following formula.

$[\ \%\ \text{of}\ I_e = 100 - \frac{x-1000}{150}\ ]$ x = actual altitude of the softstarter in meter.

Number of starts per hour using PSR softstarters

Motor current	Starts/hour without auxiliary fan							
I_e	10	20	30	40	50	60	80	100
3 A	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR6
6 A	PSR6	PSR6	PSR6	PSR6	PSR6	PSR9	PSR9	PSR9
9 A	PSR9	PSR9	PSR9	PSR12	PSR12	PSR12	PSR16	PSR25
12 A	PSR12	PSR12	PSR12	PSR16	PSR25	PSR25	PSR30	PSR30
16 A	PSR16	PSR25	PSR25	PSR25	PSR30	PSR30	PSR37	PSR37
25 A	PSR25	PSR30	PSR37	PSR37	PSR37	PSR45	PSR45	PSR60
30 A	PSR30	PSR37	PSR37	PSR45	PSR45	PSR60	PSR60	PSR72
37 A	PSR37	PSR45	PSR45	PSR60	PSR60	PSR72	PSR85	PSR105
45 A	PSR45	PSR45	PSR60	PSR60	PSR72	PSR85	PSR105	-
60 A	PSR60	PSR60	PSR72	PSR85	PSR105	PSR105	-	-
72 A	PSR72	PSR85	PSR105	PSR105	-	-	-	-
85 A	PSR85	PSR105	PSR105	-	-	-	-	-
105 A	PSR105	-	-	-	-	-	-	-

Number of starts per hour using PSR softstarters

Motor current	Starts/hour with auxiliary fan							
I_e	10	20	30	40	50	60	80	100
3 A	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3
6 A	PSR6	PSR6	PSR6	PSR6	PSR6	PSR6	PSR6	PSR9
9 A	PSR9	PSR9	PSR9	PSR9	PSR9	PSR12	PSR12	PSR12
12 A	PSR12	PSR12	PSR12	PSR12	PSR12	PSR16	PSR25	PSR25
16 A	PSR16	PSR16	PSR25	PSR25	PSR25	PSR25	PSR30	PSR30
25 A	PSR25	PSR2	PSR30	PSR37	PSR37	PSR37	PSR37	PSR45
30 A	PSR30	PSR30	PSR37	PSR37	PSR45	PSR45	PSR45	PSR45
37 A	PSR37	PSR37	PSR45	PSR45	PSR45	PSR45	PSR60	PSR60
45 A	PSR45	PSR45	PSR45	PSR60	PSR60	PSR60	PSR72	PSR72
60 A	PSR60	PSR60	PSR60	PSR72	PSR72	PSR85	PSR105	-
72 A	PSR72	PSR72	PSR72	PSR85	PSR105	PSR105	-	-
85 A	PSR85	PSR85	PSR105	PSR105	-	-	-	-
105 A	PSR105	PSR105	-	-	-	-	-	-

Data based on an ambient temperature of 40 °C (104 °F), starting current of 4 x I_e and ramp time 6 seconds. For more optimized selection or to use PSR for heavy-duty starts, please use the softstarter selection tool.

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PSRC
Introduction



Technical specifications
- Rated operational current: 3...105 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...240 V AC, 50/60 Hz

Features
- Two-phase controlled
- Soft start with voltage ramp
- Built-in bypass for energy saving and easy installation
- Easy set-up
- Run and Top of Ramp relays available for monitoring
- Ambient temperature -25 to +60 degrees
- Connection kits available for connection to ABB's manual motor starters (MMS)

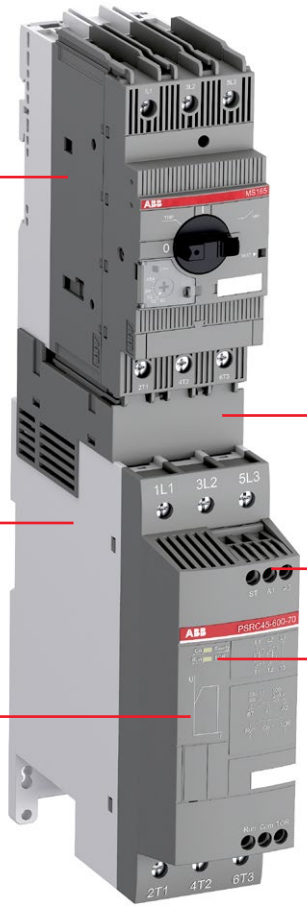
Protections
- Motor protection with manual motor starter

Communication
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Motor protection with manual motor starter the PSRC together with the MMS to get a complete motor starter with soft start and stop together with overload and short circuit protection.

Screw or DIN-rail mounted
PSRC is fast and easy to install by using screw mounting or DIN-rail mounting (PSRC3 ... PSRC45).

Fixed settings "Tamper-proof"
No risk of parameters getting changed after installation.



Connection kit (optional) simplifies installation of the PSRC by making the connection to the MMS screwless.

Output signal relays for Run and Top of ramp (PSRC25 ... PSRC105).

LED indicators for On/Ready and Run/Top of ramp.

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PSRC
Coordination examples


PSRC3... PSRC16


PSRC25... PSRC30


PSRC37... PSRC45


PSRC60... PSRC105

Normal start in-line connected

Softstarter	PSRC3	PSRC6	PSRC9	PSRC12	PSRC16	PSRC25	PSRC30	PSRC37	PSRC45	PSRC60	PSRC72	PSRC85	PSRC105[2]
IEC kW (400V)	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
IEC max A	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL HP (440-480 V)	2	3	5	7.5	10	15	20	25	30	40	50	60	75
UL max FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104
Using manual motor starters type 1 coordination will be achieved[1]	**Manual motor starter (50 kA) 400 V, 40 °C**												
	MS116	MS116	MS116	MS132	MS132	MS132	MS132	MS165	MS165	MS165	MS495	MS495	MS495
Using gG fuses type 1 coordination will be achieved[1]	**Fuse protection (50 kA) gG Fuse**												
	10 A	16 A	25 A	32 A	32 A	50 A	63 A	100 A	125 A	125 A	200 A	200 A	250 A
Suitable switch fuse for the above gG fuses[1]	**Switch fuse**												
							OS32G			OS125G			OS250
J-type fuses for UL coordination[1]	**Max. fuse, J-type**												
	35 A	35 A	35 A	35 A	35 A	60 A	60 A	90 A	90 A	110 A	125 A	150 A	200 A
Overload protection is used to protect the motor from over heating[1]	**Thermal overload relay**												
								TF42DU			TA75DU		TA110DU
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**												
	AF9	AF9	AF9	AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] Can be used with MS495 up to 100 A



Coordination tables (SOC) >
For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

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PSRC

Normal starts, class 10, in-line
Ordering details



PSRC3... PSRC16



PSRC25... PSRC30



PSRC37... PSRC45



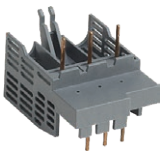
PSRC60... PSRC105

Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 100...240 V AC

Motor power									
IEC data		UL/CSA data						Net weight	
kW at 400 V	I_e rated current	hp at 208 V	hp at 480 V	hp at 600 V	FLA	Type	Order code	kg	lb
1.5	3.9	0.5	2	2	3.4	PSRC3-600-70	1SFA896203R7000	0.4	0.8
3	6.8	1	3	5	6.1	PSRC6-600-70	1SFA896204R7000	0.4	0.8
4	9	2	5	7.5	9	PSRC9-600-70	1SFA896205R7000	0.4	0.8
5.5	12	3	7.5	10	11	PSRC12-600-70	1SFA896206R7000	0.4	0.8
7.5	16	3	10	10	15	PSRC16-600-70	1SFA896207R7000	0.4	0.8
11	25	7.5	15	20	14	PSRC25-600-70	1SFA896208R7000	0.6	1.3
15	30	7.5	20	25	28	PSRC30-600-70	1SFA896209R7000	0.6	1.3
18.5	37	10	25	30	34	PSRC37-600-70	1SFA896210R7000	1.0	2.2
22	45	15	30	40	46.2	PSRC45-600-70	1SFA896211R7000	1.0	2.2
30	60	20	40	50	59.4	PSRC60-600-70	1SFA896212R7000	2.1	4.6
37	72	20	50	60	68	PSRC72-600-70	1SFA896213R7000	2.1	4.6
45	85	25	60	75	80	PSRC85-600-70	1SFA896214R7000	2.1	4.6
55	105	30	75	100	104	PSRC105-600-70	1SFA896215R7000	2.1	4.6

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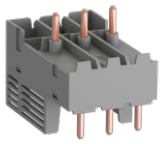
PSRC
Accessories



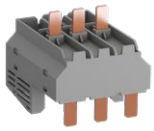
Connection kit
for PSRC3...16



Connection kit
for PSRC25...30



Connection kit
for PSRC37...45



Connection kit
for PSRC60...72

Connection kit

Article	Breaker type	Type	Order code	Pkg qty	Net kg	lb
PSRC3...16	MS116/132	PSR16-MS116	1SFA896211R1001	1	0.03	0.08
PSRC25...30	MS132	PSR30-MS132	1SFA896212R1001	1	0.03	0.08
PSRC37...45	MS165	PSR45-MS165	1SFA896216R1001	1	0.05	0.11
PSRC60...72	MS165	PSR60-MS165	1SFA896215R1001	1	0.05	0.11
PSRC60...105	MS495	PSR105-MS495	1SAM501903R1001	1	0.03	0.08



Fan

Fan

Article	Type	Order code	Pkg qty	Net kg	lb
PSRC3...16	PSR-FAN3-45A	1SFA896311R1001	1	0.01	0.02
PSRC25...30	PSR-FAN60-105A	1SFA896313R1001	1	0.01	0.03



Terminal enlargements

Terminal enlargements

Article	Type	Order code	Pkg qty	Net kg	lb
PSRC60... PSRC105	PSLW-72	1SFA899002R1072	1	0.16	0.35

Note: Wire range mm² 1 x 10...50 mm², 2 x 10...25 mm²



Fieldbus plug adapter

Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11

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PSRC
Technical data

Normal start													
In-line connected	**PSRC3**	**PSRC6**	**PSRC9**	**PSRC12**	**PSRC16**	**PSRC25**	**PSRC30**	**PSRC37**	**PSRC45**	**PSRC60**	**PSRC72**	**PSRC85**	**PSRC105**
IEC data													
(400 V) kW	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
I_e rated current	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL/CSA data													
(208 V) hp	0.5	1	2	3	3	7.5	7.5	10	15	20	20	25	30
(440-480 V) hp	2	3	5	7.5	10	15	20	25	30	40	50	60	75
(600 V) hp	2	5	7.5	10	10	20	25	30	40	50	60	75	100
FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104

Connectable cable area	**PSRC3...16**	**PSRC25... 30**	**PSRC37... 45**	**PSRC60...105**
Main circuit	1 x 0.75 - 2.5 mm²	1 x 2.5 - 10 mm²	1 x 6 - 35 mm²	1 x 10 - 95 mm²
	2 x 0.75 - 2.5 mm²	2 x 2.5 - 10 mm²	2 x 6 - 16 mm²	2 x 6 - 35 mm²
	1 x 14 AWG	1 x 12 - 8 AWG	1 x 8 - 4 AWG	1 x 6 - 2/0 AWG
Control circuit	**PSRC3...16**	**PSRC25... 105**		
	1 x 0.75 - 2.5 mm²	1 x 0.75 - 2.5 mm²		
	1 x 0.75 - 2.5 mm²	2 x 0.75 - 1.5 mm²		
	1 x 16 - 14 AWG / 2 x 16 AWG	1 x 16 - 14 AWG / 2 x 16 AWG		

Degree of protection	
Main circuit	PSRC3... 30: IP20 PSRC37... 105: IP10
Control circuit	PSRC3... 30: IP20
Signal relays	
For Run signal	**PSRC3... 16**
Resistive load	240 V AC, 3 A / 24 V DC, 3 A **PSRC25... 105** 240 V AC, 3 A / 24 V DC, 3 A
AC-15 (Contactor)	**PSRC3... 16** 240 V AC, 0.5 A / 24 V DC 0.5 A **PSRC25... 105** 240 V AC, 0.5 A / 24 V DC, 0.5 A
For Top ramp signal	PSRC25... 105
Resistive load	240 V AC, 3 A / 24 V DC, 3 A
AC-15 (Contactor)	**PSRC25... 105** 240 V AC, 0.5 A / 24 V DC, 0.5 A
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V AC +10%/-15%, 50/60 Hz ±5%
Rated control supply voltage U_s	100...240 V AC, 50/60Hz ±5%
Ambient temperature	
During operation	-25 °C to +60 °C (-13 to +140 °F)[1]
During storage	-40 °C to +70 °C (-40 to +158 °F)
Maximum altitude	4000 m (13123 ft)[2]

[1] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8% per °C (0.44% per °F).

[2] When used at high altitudes above 1000 meters (3281 ft) up to 4000 meters (13123 ft) you need to derate the rated current using one of the following formulas.
[% of I_e = 100 - (x-1000)/150] x = actual altitude for the softstarter in meters.
[% of I_e = 100 - (x-3280)/497] x = actual altitude for the softstarter in feet.

Number of starts per hour using PSRC softstarters

Starts/hour without auxiliary fan

I_e	10	20	30	40	50	60	80	100
3 A	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC6
6 A	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC9	PSRC9	PSRC9
9 A	PSRC9	PSRC9	PSRC9	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25
12 A	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25	PSRC25	PSRC30	PSRC30
16 A	PSRC16	PSRC25	PSRC25	PSRC25	PSRC30	PSRC30	PSRC37	PSRC37
25 A	PSRC25	PSRC30	PSRC37	PSRC37	PSRC37	PSRC45	PSRC45	PSRC60
30 A	PSRC30	PSRC37	PSRC37	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72
37 A	PSRC37	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105
45 A	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105	-
60 A	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105	PSRC105	-	-
72 A	PSRC72	PSRC85	PSRC105	PSRC105	-	-	-	-
85 A	PSRC85	PSRC105	PSRC105	-	-	-	-	-
105 A	PSRC105	-	-	-	-	-	-	-

Number of starts per hour using PSRC softstarters

Starts/hour with auxiliary fan

I_e	10	20	30	40	50	60	80	100
3 A	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3
6 A	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC9
9 A	PSRC9	PSRC9	PSRC9	PSRC9	PSRC9	PSRC12	PSRC12	PSRC12
12 A	PSRC12	PSRC12	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25	PSRC25
16 A	PSRC16	PSRC16	PSRC25	PSRC25	PSRC25	PSRC25	PSRC30	PSR30
25 A	PSRC25	PSRC2	PSRC30	PSRC37	PSRC37	PSRC37	PSRC37	PSRC45
30 A	PSRC30	PSRC30	PSRC37	PSRC37	PSRC45	PSRC45	PSRC45	PSRC45
37 A	PSRC37	PSRC37	PSRC45	PSRC45	PSRC45	PSRC45	PSRC60	PSRC60
45 A	PSRC45	PSRC45	PSRC45	PSRC60	PSRC60	PSRC60	PSRC72	PSRC72
60 A	PSRC60	PSRC60	PSRC60	PSRC72	PSRC72	PSRC85	PSRC105	-
72 A	PSRC72	PSRC72	PSRC72	PSRC85	PSRC105	PSRC105	-	-
85 A	PSRC85	PSRC85	PSRC105	PSRC105	-	-	-	-
105 A	PSRC105	PSRC105	-	-	-	-	-	-

Data based on an ambient temperature of 40 °C (104 °F), starting current of 4 x I_e and ramp time 6 seconds. For more optimized selection or to use PSR for heavy-duty starts, please use the softstarter selection tool.

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PSE
Introduction



Technical specifications
- Rated operational current: 18...370 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...250 V AC, 50/60 Hz

Features
- Voltage ramp and torque control for both start and stop
- Two-phase controlled
- Current limit
- Kick-start
- Built-in bypass for energy saving and easy installation
- Illuminated display that uses symbols to become language neutral
- External keypad rated IP66 (Type 1, 4X, 12) as an option
- Analog output for display of motor current

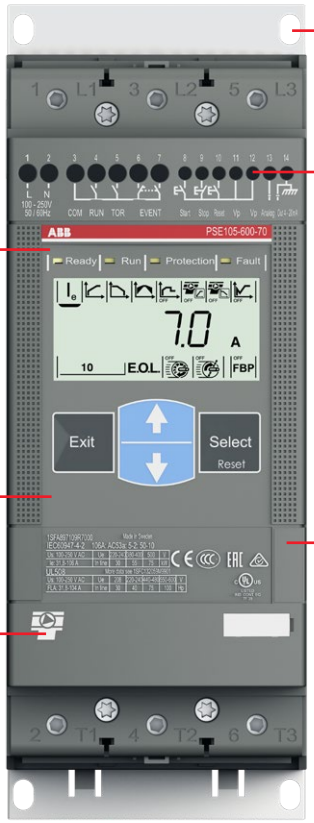
Protections
- Electronic overload protection
- Underload protection
- Locked rotor protection

Communication
- Built-in Modbus RTU
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Output signal relays for run, top of ramp and event Three output signal relays for indicating that the motor is running, that the softstarter is in top of ramp and if any event has happened. The relays can be used e.g. with pilot lights or to control a line contactor.

Coated circuit boards protecting from dust, moist and corrosive atmosphere.

Torque control function the absolutely best possible stop of pumps without water hammering and pressure surges.



Screw mounting PSE is fast, easy to install by using screw mounting.

Digital input for start, stop and reset PSE is controlled through digital inputs using the internal 24 V DC source. This allows easy control with e.g. push buttons or relays.

NEW Modbus- RTU fieldbus communication for monitoring and control. Support for all major communication protocols.

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PSE

Coordination examples



PSE18 ... PSE105



PSE142 ... PSE170



PSE210 ... PSE370

Normal start In-line connected

Softstarter	PSE18	PSE25	PSE30	PSE37	PSE45	PSE60	PSE72	PSE85	PSE105
IEC kW (400V)	7.5	11	15	18.5	22	30	37	45	55
IEC max A	18	25	30	37	45	60	72	85	106
UL HP (440-480 V)	10	15	20	25	30	40	50	60	75
UL max FLA	18	25	28	34	42	60	68	80	104
Using MCCB only, type 1 coordination will be achieved[1]	**MCCB (400 V, 40 °C)**								
MCCB (35 kA)	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT3N250
MCCB (50 kA)	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT3S250
To achieve type 2 coordination, semi-conductor fuses must be used[1]	**Fuse protection (85 kA), Semiconductor fuses, Bussmann**								
	170M1563	170M1564	170M1566	170M1567	170M1568	170M1569	170M1571	170M1572	170M3819
Suitable switch fuse for recommended semi-conductor fuses[1]	**Switch fuse**								
	OS32GD	OS32GD	OS32GD	OS63GD	OS63GD	OS63GD	OS125GD	OS125GD	OS250D
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**								
	AF26	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

Softstarter	PSE142	PSE170	PSE210	PSE250	PSE300	PSE370
(400 V) kW	75	90	110	132	160	200
IEC, max. A	143	171	210	250	300	370
(440-480 V) hp	100	125	150	200	250	300
UL, max. FLA	130	169	192	248	302	361
Using MCCB only, type 1 coordination will be achieved[1]	**MCCB (400 V, 40 °C)**					
MCCB (35 kA)	XT3N250	XT3N250	XT4N320	XT5N400	XT5N400	XT5N630
MCCB (50 kA)	XT3S250	XT3S250	XT4S320	XT5S400	XT5S400	XT5S630
To achieve type 2 coordination, semi-conductor fuses must be used[1]	**Fuse protection (85kA), Semiconductor fuses, Bussmann**					
	170M5809	170M5810	170M5812	170M5813	170M6812	170M6813
Suitable switch fuse for recommended semi-conductor fuses[1]	**Switch fuse**					
	OS400D	OS400D	OS400D	OS400D	OS630D	OS630D
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**					
	AF146	AF190	AF265	AF265	AF305	AF370

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx

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PSE

Ordering details



PSE18 ... PSE105



PSE142 ... PSE170



PSE210 ... PSE370

Normal starts, class 10, in-line Rated operational voltage U_e, 208-600 V, Rated control supply voltage U_s, 100-250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
4	7.5	11	18	5	5	10	15	18	PSE18-600-70	1SFA897101R7000	2.5	5.5
5.5	11	15	25	7.5	7.5	15	20	25	PSE25-600-70	1SFA897102R7000	2.5	5.5
7.5	15	18.5	30	7.5	10	20	25	28	PSE30-600-70	1SFA897103R7000	2.5	5.5
9	18.5	22	37	10	10	25	30	34	PSE37-600-70	1SFA897104R7000	2.5	5.5
11	22	30	45	10	15	30	40	42	PSE45-600-70	1SFA897105R7000	2.5	5.5
15	30	37	60	20	20	40	50	60	PSE60-600-70	1SFA897106R7000	2.5	5.5
18.5	37	45	72	20	25	50	60	68	PSE72-600-70	1SFA897107R7000	2.5	5.5
22	45	55	85	25	30	60	75	80	PSE85-600-70	1SFA897108R7000	2.6	5.7
30	55	75	106	30	40	75	100	104	PSE105-600-70	1SFA897109R7000	2.9	6.3
40	75	90	143	40	50	100	125	130	PSE142-600-70	1SFA897110R7000	4.4	9.7
45	90	110	171	60	60	125	150	169	PSE170-600-70	1SFA897111R7000	4.4	9.7
59	110	132	210	60	75	150	200	192	PSE210-600-70-1	1SFA897112R7001	8.5	18.7
75	132	160	250	75	100	200	250	248	PSE250-600-70-1	1SFA897113R7001	10.6	23.3
90	160	200	300	100	100	250	300	302	PSE300-600-70-1	1SFA897114R7001	10.6	23.3
110	200	250	370	125	150	300	350	361	PSE370-600-70-1	1SFA897115R7001	10.6	23.3

Heavy-duty starts, class 30, in-line Rated operational voltage U_e, 208...600 V, Rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
3	5.5	7.5	12	3	3	7.5	10	11	PSE18-600-70	1SFA897101R7000	2.5	5.5
4	7.5	11	18	5	5	10	15	18	PSE25-600-70	1SFA897102R7000	2.5	5.5
5.5	11	15	25	7.5	7.5	15	20	25	PSE30-600-70	1SFA897103R7000	2.5	5.5
7.5	15	18.5	30	7.5	10	20	25	28	PSE37-600-70	1SFA897104R7000	2.5	5.5
9	18.5	22	37	10	10	25	30	34	PSE45-600-70	1SFA897105R7000	2.5	5.5
11	22	30	45	10	15	30	40	42	PSE60-600-70	1SFA897106R7000	2.5	5.5
15	30	37	60	20	20	40	50	60	PSE72-600-70	1SFA897107R7000	2.5	5.5
18.5	37	45	72	20	25	50	60	68	PSE85-600-70	1SFA897108R7000	2.6	5.7
22	45	55	85	25	30	60	75	80	PSE105-600-70	1SFA897109R7000	2.9	6.3
30	55	75	106	30	40	75	100	104	PSE142-600-70	1SFA897110R7000	4.4	9.7
40	75	90	143	40	50	100	125	130	PSE170-600-70	1SFA897111R7000	4.4	9.7
45	90	110	171	60	60	125	150	169	PSE210-600-70-1	1SFA897112R7001	8.5	18.7
59	110	132	210	60	75	150	200	192	PSE250-600-70-1	1SFA897113R7001	10.6	23.3
75	132	160	250	75	100	200	250	248	PSE300-600-70-1	1SFA897114R7001	10.6	23.3
90	160	200	300	100	100	250	300	302	PSE370-600-70-1	1SFA897115R7001	10.6	23.3

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PSE
Accessories



Cable connectors for CU cables

Cable connectors for Cu cables

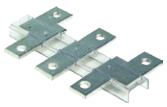
Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170	6...120	14	KIT FC Cu XT4 3pcs	1SDA066917R1	3	0.18	0.40
PSE142 ... PSE170	2 x (50...120)	16	LZ185-2C/120	1SFN074709R1000	3	0.10	0.22
PSE210 ... PSE370	16...300	25	T5 400 3pcs	1SDA055016R1	3	0.39	0.45



Cable connectors for CU & AL cables

Cable connectors for Al and Cu cables

Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170	95...185	31	KIT FC CuAl T4 3pcs	1SDA054988R1	3	0.14	0.31
PSE210 ... PSE370	185...240	43	KIT FC CuAl T5 400 3pcs	1SDA055020R1	3	0.24	0.54



Terminal enlargements

Terminal enlargements

Article	Dimensions hole ø mm²	Bar mm²	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE105	6.5	15 x 3	LW110	1SFN074307R1000	1	0.07	0.14
PSE142 ... PSE170	10.5	17.5 x 5	LW185	1SFN074707R1000	1	0.29	0.64
PSE210 ... PSE370	10.5	20 x 5	LW300	1SFN075107R1000	1	0.49	1.08



Terminal kit

Terminal kit

Article	Type	Order code	Pkg qty	Net kg	lb
PSE142...PSE170	PSLE-185	1SFA899221R1002	1	0.34	0.75
PSE210...370	PSLE-300	1SFA899221R1003	1	0.30	0.66



Terminal extension

Terminal extension

Article	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170 8.5 17.5 x 5	LX205	1SFN074810R1000	1	0.25	0.55
PSE210 ... PSE370 10.5 20 x 5	LX370	1SFN075410R1000	1	0.35	0.77

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PSE
Accessories


Terminal shrouds

Terminal shrouds

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18... PSE105, Screw terminals	LT140-30L	1SFN124203R1000	2	0.07	0.15
PSE142... PSE170, short for use with cable clamps	LT185-AC	1SFN124701R1000	2	0.05	0.11
PSE142... PSE170,long for use with compression lugs	LT185-AL	1SFN124703R1000	2	0.22	0.49
PSE210... PSE370, short for use with cable clamps	LT300-AC	1SFN125101R1000	2	0.09	0.19
PSE210... PSE370, long for use with compression lugs	LT300-AL	1SFN125103R1000	2	0.28	0.62


External keypad

External keypad including a 3m cable

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE370	PSEEK	1SFA897100R1001	1	0.13	0.29


USB cable

USB cable for Service Engineer Tool

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE370	PSECA	1SFA897201R1001	1	0.10	0.22


Fieldbus plug adaptor

Fieldbus plug connection, cable included

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adaptor	PS-FBPA	1SFA896312R1002	1	0.15	0.33


Terminal extensions retrofit kit

Terminal extensions retrofit kit

Article	Type	Order code	Pkg qty	Net kg	lb
Terminal extensions retrofit kit	LXR370	1SFA899222R1003	1	0.45	0.99



Modbus adapter

Modbus adapter

Article	Type	Order code	Pkg qty	Net kg	lb
Modbus adapter	PS-MBIA	1SFA899300R1020	1	0.01	0.02

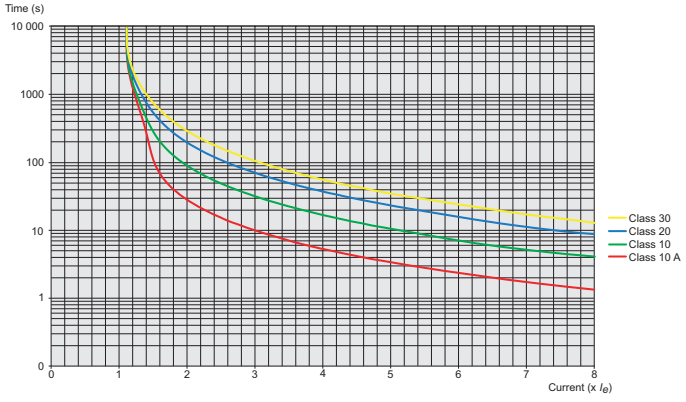
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PSE
Technical data

Technical data	PSE18 ... PSE370
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V +10%/-15%
Rated control supply voltage U_s	100...250 V +10%/-15%, 50/60 Hz ±10%
Rated control circuit voltage U_c	Internal 24 V DC
Starting capacity at I_e	4 x I_e for 10 sec.
Number of starts per hour	10[1]
Maximum Altitude	4000 m (13123 ft)[3]
Overload capability	
Overload class	10
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)[2]
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	
Main circuit	IP00
Supply and control circuit	IP20
Main circuit	
Built-in bypass	Yes
Cooling system	fan cooled (thermostat controlled)
HMI for settings	
Display	4 7-segments and icons. Illuminated
Keypad	2 selection keys and 2 navigation keys
Main settings	
Setting current	Size dependent
Ramp time during start	1...30 sec
Ramp time during stop	0...30 sec
Initial/end voltage	30...70%
Current limit	1.5...7 x I_e
Torque control for start	Yes / No
Torque control for stop	Yes / No
Kick start	Off, 30...100%
Signal relays	
Number of signal relays	3
K2	Run signal
K3	TOR (bypass) signal
K1	Event signal
Rated operational voltage U_e	100-250 V AC/24 V DC[4]
Rated thermal current I_{th}	3 A
Rated operational current I_e at AC-15 (U_e = 250 V)	1.5 A
Vibration test	
According to IEC 60068-2-6:2007	

Technical data	PSE18 ... PSE370
Analog output	
Output signal reference	4...20 mA
Type of output signal	I Amp
Scaling	Fixed at 1.2 x I_e
Control circuit	
Number of inputs	3 (start, stop, reset of faults)
Signal indication LED	
On / Ready	Green flashing / steady
Run / TOR	Green flashing / steady
Protection	Yellow
Fault	Red
Protections	
Electronic overload	Yes (Class 10A, 10, 20, 30)
Locked rotor protection	Yes
Underload protection	Yes
Fieldbus connection	
ABB Fieldbus plug	Yes (option)
NEW Built-in modbus	Yes
External keypad	
Display	LCD type
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	IP66

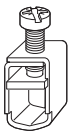
[1] Valid for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.6% per °C (0.33% per °F).
[3] When used at high altitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the following formula.
[% of I_e = 100 - $\frac{x - 1000}{150}$] x = actual altitude of the softstarter in meters.
[4] A common voltage needs to be used for all 3 signal relays.

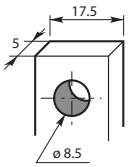


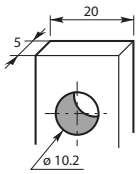
Tripping curves for the integrated electronic overload protection
PSE has an integrated electronic overload protection that can be set to four different tripping classes. Above you find a curve for each tripping class in cold state.

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PSE
Technical data







Main terminals

Article	PSE18... 105	PSE142... 170	PSE210... 370
Cu cable - Flexible 1 x mm²	2.5...70 mm²	6...120 mm²	16...300 mm²
Clamp type	Included	1SDA066917R1	1SDA055016R1
Tightening torque	8 Nm	14 Nm	25 Nm
Cu cable - Flexible 2 x mm²	2.5...70 mm²	50...120 mm²	-
Clamp type	Included	1SFN074709R1000	-
Tightening torque	8 Nm	16 Nm	-
Cu cable - Stranded 1 x mm²	2.5...70 mm²	6...120 mm²	16...300 mm²
Clamp type	Included	1SDA066917R1	1SDA055016R1
Tightening torque	8 Nm	14 Nm	25 Nm
Cu cable - Stranded 2 x mm²	2.5...70 mm²	50...120 mm²	-
Clamp type	Included	1SFN074709R1000	-
Tightening torque	8 Nm	16 Nm	-
Al cable - Stranded 1 x mm²	-	95...185 mm²	185...240
Clamp type	-	1SDA054988R1	1SDA055020R1
Tightening torque	-	31 Nm	43 Nm
Lugs			
Width	22 mm (0.866 in)	24 mm (0.945 in)	30 mm (1.181 in)
Diameter>=	6.5 mm (0.256 in)	8.5 mm (0.335 in)	10.2 mm (0.402 in)
Tightening torque	9 Nm (80 in lb)	18 Nm (159 in lb)	28 Nm (248 in lb)
Connection capacity acc to UL/CSA 1 x AWG/kcmil	6...2/0	6...300 kcmil	4...400 kcmil
Clamp type	Included	ATK185	ATK300
Tightening torque	71 in lb	300 in lb	375 in lb
Connection capacity acc to UL/CSA 2 x AWG/kcmil	-	-	4...500 kcmil
Clamp type	-	-	ATK300/2
Tightening torque	-	-	375 in lb
Supply and control circuit			
Cu cable - Stranded 1 x mm²			0.75...2.5 mm² (19...14 AWG)
Cu cable - Stranded 2 x mm²			0.75...1.5 mm² (19...16 AWG)
Tightening torque			0.5 Nm (4.4 in lb)

Fuse ratings and power losses

Softstarter	Current range A	Max power loss at rated I_e W	Max fuse rating - main circuit[1] Bussmann fuses, DIN43 620 (Knife) A	Type	Size	Power requirements supply circuit Holding (VA) / Pull-in (VA)
PSE18	5.4...18.0	0.2	40	170M1563	000	16/19.9
PSE25	7.5...25.0	0.4	50	170M1564	000	16/19.9
PSE30	9.0...30.0	0.5	80	170M1566	000	16/19.9
PSE37	11.1...37.0	0.8	100	170M1567	000	16/19.9
PSE45	13.5...45.0	1.2	125	170M1568	000	16/19.9
PSE60	18.0...60.0	2.2	160	170M1569	000	16/19.9
PSE72	21.6...72.0	3.1	250	170M1571	000	16/19.9
PSE85	25.5...85.0	4.3	315	170M1572	000	16/19.9
PSE105	31.8...106.0	6.6	400	170M3819	1	16/19.9
PSE142	42.9...143.0	12.1	450	170M5809	2	16/31
PSE170	51.3...171.0	17.6	500	170M5810	2	16/31
PSE210	63.0...210.0	8.8	630	170M5812	2	21/244
PSE250	75.0...250.0	12.5	700	170M5813	2	21/244
PSE300	90.6...302.0	18.0	800	170M6812	3	21/244
PSE370	111.0...370.0	27.4	900	170M6813	3	21/244

[1] For the supply circuit 6 A delayed, for MCB use C characteristics.

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PSTX
Introduction



Technical specifications
- Rated operational current: 30... 1250 A (inside-delta: 2160 A)
- Operational voltage: 208... 690 V AC
- Wide rated control supply voltage: 100... 250 V, 50/60 Hz

Features
- Both in-line and inside-delta connection
- Detachable keypad rated IP66 (4X outdoor)
- Graphical display with 17 languages for easy setup and operation
- Built-in bypass for energy saving and easy installation
- Analog output for measurement of current, voltage, power factor, etc.

Protections
- Complete motor protection

Communication
- Built-in Modbus RTU
- Support for all major communication protocols

Heavy duty design to handle heavy applications such as centrifugal fan, mill and mixers.

Jog with slow speed forward & reverse
The slow speed forward and backward jog feature will make you more flexible when operating e.g. conveyor belts and cranes.

Torque control function the absolutely best possible stop of pumps without water hammering and pressure surges.



HMI A user-friendly and clear display saves you time and resources during both setup and operation. The detachable keypad is standard on all PSTX softstarters with IP66 and 4X outdoor for tough environments.

Coated PCB protecting from dust, moist and corrosive atmosphere.

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PSTX
Coordination examples



PSTX30... PSTX105

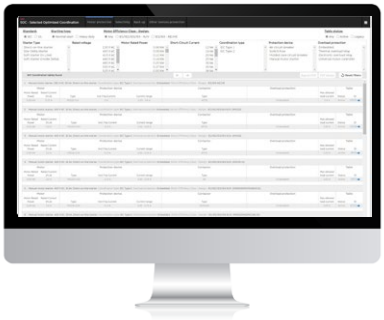


PSTX142... PSTX170

Normal start in-line connected

Softstarter	PSTX30	PSTX37	PSTX45	PSTX60	PSTX72	PSTX85	PSTX105	PSTX142	PSTX170
IEC kW (400V)	15	18.5	22	30	37	45	55	75	90
IEC max A	30	37	45	60	72	85	106	143	171
UL HP (440-480 V)	20	25	30	40	50	60	75	100	125
UL max FLA	28	34	42	60	68	80	104	130	169
Using manual motor starter or MCCB, type 1 coordination will be achieved.[1]	**MCCB (50 kA) 400 V, 40 °C**								
	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT4S250
Using gG fuses, type 1 coordination will be achieved. To achieve type 2 coordination, semiconductor fuses must be used.[1]	**Fuse protection (80 kA), Semiconductor fuses, Bussmann**								
	170M1567	170M1568	170M1569	170M1569	170M1571	170M1572	170M3819	170M5810	170M5812
Suitable switch fuse for the recommended semiconductor fuses.[1]	**Switch fuse**								
	OS32G	OS63G	OS63G	OS63G	OS125G	OS125G	OS250	OS400	OS400
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor[2]**								
	AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF146	AF190

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] When using a softstarter in a network with high harmonic disturbances, we recommend to use a line-contactor. Please check the information in the Installation manual for more details.



Coordination tables (SOC) >
For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

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PSTX
Coordination examples


PSTX210... PSTX370


PSTX470... PSTX570


PSTX720... PSTX840


PSTX1050... PSTX1250

Normal start In-line connected

Softstarter	PSTX210	PSTX250	PSTX300	PSTX370	PSTX470	PSTX570	PSTX720	PSTX840	PSTX1050	PSTX1250
IEC kW (400V)	110	132	160	200	250	315	400	450	560	710
IEC max A	210	250	300	370	470	570	720	840	1050	1250
UL HP (440-480 V)	150	200	250	300	400	500	600	700	900	1000
UL max FLA	192	248	302	361	480	590	720	840	1062	1250
Using manual motor starter or MCCB, type 1 coordination will be achieved.[1]	**MCCB (50 kA) 400 V, 40 °C**									
	T4S320	T5S400	T5S400	T5S630	T7S800	T7S800	T7S1250	T7S1250	E2.2N 2000	
Using gG fuses, type 1 coordination will be achieved. To achieve type 2 coordination, semiconductor fuses must be used.[1]	**Fuse protection (80 kA), Semiconductor fuses, Bussmann**									
	170M5812	170M5813	170M6812	170M6813	170M6813	170M6814	170M8554	170M6018	170M6020	170M6021
Suitable switch fuse for the recommended semiconductor fuses.[1]	**Switch fuse**									
	OS400	OS400	OS630	OS630	OS630	OS630	OS800	-	-	-
The line contactor is not required for the softstarter itself but often used to open if OL trips.[1]	**Line contactor[2]**									
	AF265	AF265	AF305	AF370	AF580	AF580	AF750	AF1350	AF1650	-

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] When using a softstarter in a network with high harmonic disturbances, we recommend to use a line-contactor. Please check the information in the Installation manual for more details.

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PSTX

Normal starts, class 10, in-line
Ordering details



PSTX30... PSTX105



PSTX142... PSTX170



PSTX210... PSTX370



PSTX470... PSTX570



PSTX720... PSTX840



PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V , rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
15	18.5	-	30	7.5	10	20	25	28	PSTX30-600-70	1SFA898103R7000	4.6	10.1
18.5	22	-	37	10	10	25	30	34	PSTX37-600-70	1SFA898104R7000	4.6	10.1
22	25	-	45	10	15	30	40	42	PSTX45-600-70	1SFA898105R7000	4.6	10.1
30	37	-	60	20	20	40	50	60	PSTX60-600-70	1SFA898106R7000	4.6	10.1
37	45	-	72	20	25	50	60	68	PSTX72-600-70	1SFA898107R7000	4.6	10.1
45	55	-	85	25	30	60	75	80	PSTX85-600-70	1SFA898108R7000	4.6	10.1
55	75	-	106	30	40	75	100	104	PSTX105-600-70	1SFA898109R7000	4.6	10.1
75	90	-	143	40	50	100	125	130	PSTX142-600-70	1SFA898110R7000	4.6	10.1
90	110	-	171	50	60	125	150	169	PSTX170-600-70	1SFA898111R7000	4.7	10.3
110	132	-	210	60	75	150	200	192	PSTX210-600-70	1SFA898112R7000	4.7	10.3
132	160	-	250	75	100	200	250	248	PSTX250-600-70	1SFA898113R7000	4.7	10.3
160	200	-	300	100	100	250	300	302	PSTX300-600-70	1SFA898114R7000	4.7	10.3
200	257	-	370	125	150	300	350	361	PSTX370-600-70	1SFA898115R7000	4.7	10.3
250	315	-	470	150	200	400	500	480	PSTX470-600-70	1SFA898116R7000	4.7	10.3
315	400	-	570	200	200	500	600	590	PSTX570-600-70	1SFA898117R7000	7.0	15.4
400	500	-	720	250	300	600	700	720	PSTX720-600-70	1SFA898118R7000	7.0	15.4
450	600	-	840	300	350	700	800	840	PSTX840-600-70	1SFA898119R7000	8.9	19.6
560	730	-	1050	400	450	900	1000	1062	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
710	880	-	1250	400	500	1000	1200	1250	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

Rated operational voltage U_e, 208...690 V , rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
15	18.5	25	30	7.5	10	20	25	28	PSTX30-690-70	1SFA898203R7000	4.6	10.1
18.5	22	30	37	10	10	25	30	34	PSTX37-690-70	1SFA898204R7000	4.6	10.1
22	25	37	45	10	15	30	40	42	PSTX45-690-70	1SFA898205R7000	4.6	10.1
30	37	55	60	20	20	40	50	60	PSTX60-690-70	1SFA898206R7000	4.6	10.1
37	45	59	72	20	25	50	60	68	PSTX72-690-70	1SFA898207R7000	4.6	10.1
45	55	75	85	25	30	60	75	80	PSTX85-690-70	1SFA898208R7000	4.6	10.1
55	75	90	106	30	40	75	100	104	PSTX105-690-70	1SFA898209R7000	4.6	10.1
75	90	132	143	40	50	100	125	130	PSTX142-690-70	1SFA898210R7000	4.6	10.1
90	110	160	171	50	60	125	150	169	PSTX170-690-70	1SFA898211R7000	4.7	10.3
110	132	184	210	60	75	150	200	192	PSTX210-690-70	1SFA898212R7000	4.7	10.3
132	160	220	250	75	100	200	250	248	PSTX250-690-70	1SFA898213R7000	4.7	10.3
160	200	257	300	100	100	250	300	302	PSTX300-690-70	1SFA898214R7000	4.7	10.3
200	257	355	370	125	150	300	350	361	PSTX370-690-70	1SFA898215R7000	4.7	10.3
250	315	450	470	150	200	400	500	480	PSTX470-690-70	1SFA898216R7000	4.7	10.3
315	400	560	570	200	200	500	600	590	PSTX570-690-70	1SFA898217R7000	7.0	15.4
400	500	710	720	250	300	600	700	720	PSTX720-690-70	1SFA898218R7000	7.0	15.4
450	600	800	840	300	350	700	800	840	PSTX840-690-70	1SFA898219R7000	8.9	19.6
560	730	1000	1050	400	450	900	1000	1062	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
710	880	1200	1250	400	500	1000	1200	1250	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

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PSTX

Heavy-duty starts, class 30, in-line
Ordering details



PSTX30... PSTX105



PSTX142... PSTX170



PSTX210... PSTX370



PSTX470... PSTX570



PSTX720... PSTX840



PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
11	15	-	22	5	7.5	15	20	25	PSTX30-600-70	1SFA898103R7000	4.6	10.1
15	18.5	-	30	7.5	10	20	25	28	PSTX37-600-70	1SFA898104R7000	4.6	10.1
18.5	22	-	37	10	10	25	30	34	PSTX45-600-70	1SFA898105R7000	4.6	10.1
22	25	-	45	10	15	30	40	42	PSTX60-600-70	1SFA898106R7000	4.6	10.1
30	37	-	60	20	20	40	50	60	PSTX72-600-70	1SFA898107R7000	4.6	10.1
37	45	-	72	20	25	50	60	68	PSTX85-600-70	1SFA898108R7000	4.6	10.1
45	55	-	85	25	30	60	75	80	PSTX105-600-70	1SFA898109R7000	4.6	10.1
55	75	-	106	30	40	75	100	104	PSTX142-600-70	1SFA898110R7000	4.6	10.1
75	90	-	143	40	50	100	125	130	PSTX170-600-70	1SFA898111R7000	4.7	10.3
90	110	-	171	50	60	125	150	169	PSTX210-600-70	1SFA898112R7000	4.7	10.3
110	132	-	210	60	75	150	200	192	PSTX250-600-70	1SFA898113R7000	4.7	10.3
132	160	-	250	75	100	200	250	248	PSTX300-600-70	1SFA898114R7000	4.7	10.3
160	200	-	300	100	100	250	300	302	PSTX370-600-70	1SFA898115R7000	4.7	10.3
200	257	-	370	125	150	300	350	361	PSTX470-600-70	1SFA898116R7000	4.7	10.3
250	315	-	470	150	200	400	500	480	PSTX570-600-70	1SFA898117R7000	7.0	15.4
315	400	-	570	200	200	500	600	590	PSTX720-600-70	1SFA898118R7000	7.0	15.4
400	500	-	720	250	300	600	700	720	PSTX840-600-70	1SFA898119R7000	8.9	19.6
450	600	-	840	300	350	700	800	840	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
560	730	-	1050	400	450	900	1000	1062	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
11	15	18.5	22	5	7.5	15	20	25	PSTX30-690-70	1SFA898203R7000	4.6	10.1
15	18.5	25	30	7.5	10	20	25	28	PSTX37-690-70	1SFA898204R7000	4.6	10.1
18.5	22	30	37	10	10	25	30	34	PSTX45-690-70	1SFA898205R7000	4.6	10.1
22	25	37	44	10	15	30	40	42	PSTX60-690-70	1SFA898206R7000	4.6	10.1
30	37	55	60	20	20	40	50	60	PSTX72-690-70	1SFA898207R7000	4.6	10.1
37	45	59	72	20	25	50	60	68	PSTX85-690-70	1SFA898208R7000	4.6	10.1
45	55	75	85	25	30	60	75	80	PSTX105-690-70	1SFA898209R7000	4.6	10.1
55	75	90	106	30	40	75	100	104	PSTX142-690-70	1SFA898210R7000	4.6	10.1
75	90	132	143	40	50	100	125	130	PSTX170-690-70	1SFA898211R7000	4.7	10.3
90	110	160	171	50	60	125	150	169	PSTX210-690-70	1SFA898212R7000	4.7	10.3
110	132	184	210	60	75	150	200	192	PSTX250-690-70	1SFA898213R7000	4.7	10.3
132	160	220	250	75	100	200	250	248	PSTX300-690-70	1SFA898214R7000	4.7	10.3
160	200	257	300	100	100	250	300	302	PSTX370-690-70	1SFA898215R7000	4.7	10.3
200	257	355	370	125	150	300	350	361	PSTX470-690-70	1SFA898216R7000	4.7	10.3
250	315	450	470	150	200	400	500	480	PSTX570-690-70	1SFA898217R7000	7.0	15.4
315	400	560	570	200	200	500	600	590	PSTX720-690-70	1SFA898218R7000	7.0	15.4
400	500	710	720	250	300	600	700	720	PSTX840-690-70	1SFA898219R7000	8.9	19.6
450	600	800	840	300	350	700	800	840	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
560	730	1000	1050	400	450	900	1000	1062	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

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PSTX

Normal starts, class 10, inside delta

Ordering details



PSTX30... PSTX105



PSTX142... PSTX170



PSTX210... PSTX370



PSTX470... PSTX570



PSTX720... PSTX840



PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
25	30	-	52	10	15	30	40	48	PSTX30-600-70	1SFA898103R7000	4.6	10.1
30	37	-	64	15	20	40	50	58	PSTX37-600-70	1SFA898104R7000	4.6	10.1
37	45	-	76	20	25	50	60	72	PSTX45-600-70	1SFA898105R7000	4.6	10.1
55	75	-	105	30	40	75	100	103	PSTX60-600-70	1SFA898106R7000	4.6	10.1
59	80	-	124	30	40	75	100	117	PSTX72-600-70	1SFA898107R7000	4.6	10.1
75	90	-	147	40	50	100	125	138	PSTX85-600-70	1SFA898108R7000	4.6	10.1
90	110	-	181	60	60	150	150	180	PSTX105-600-70	1SFA898109R7000	4.6	10.1
132	160	-	245	75	75	150	200	225	PSTX142-600-70	1SFA898110R7000	4.6	10.1
160	200	-	300	75	100	200	250	292	PSTX170-600-70	1SFA898111R7000	4.7	10.3
184	250	-	360	100	125	250	300	332	PSTX210-600-70	1SFA898112R7000	4.7	10.3
220	295	-	430	150	150	350	450	429	PSTX250-600-70	1SFA898113R7000	4.7	10.3
257	355	-	515	150	200	450	500	523	PSTX300-600-70	1SFA898114R7000	4.7	10.3
355	450	-	640	200	250	500	600	625	PSTX370-600-70	1SFA898115R7000	4.7	10.3
450	600	-	814	250	300	600	700	830	PSTX470-600-70	1SFA898116R7000	4.7	10.3
540	700	-	987	300	350	700	800	1020	PSTX570-600-70	1SFA898117R7000	7.0	15.4
710	880	-	1247	400	500	1000	1200	1240	PSTX720-600-70	1SFA898118R7000	7.0	15.4
800	1000	-	1455	500	600	1200	1500	1450	PSTX840-600-70	1SFA898119R7000	8.9	19.6
1000	1250	-	1810	600	700	1500	1800	1830	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
1200	1500	-	2160	800	900	1800	2000	2160	PSTX1250-600-70	1SFA898121R1000	13.3	29.3

Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
25	30	45	52	10	15	30	40	48	PSTX30-690-70	1SFA898203R7000	4.6	10.1
30	37	55	64	15	20	40	50	58	PSTX37-690-70	1SFA898204R7000	4.6	10.1
37	45	59	76	20	25	50	60	72	PSTX45-690-70	1SFA898205R7000	4.6	10.1
55	75	90	105	30	40	75	100	103	PSTX60-690-70	1SFA898206R7000	4.6	10.1
59	80	110	124	30	40	75	100	117	PSTX72-690-70	1SFA898207R7000	4.6	10.1
75	90	132	147	40	50	100	125	138	PSTX85-690-70	1SFA898208R7000	4.6	10.1
90	110	160	181	60	60	150	150	180	PSTX105-690-70	1SFA898209R7000	4.6	10.1
132	160	220	245	75	75	150	200	225	PSTX142-690-70	1SFA898210R7000	4.6	10.1
160	200	257	300	75	100	200	250	292	PSTX170-690-70	1SFA898211R7000	4.7	10.3
184	250	315	360	100	125	250	300	332	PSTX210-690-70	1SFA898212R7000	4.7	10.3
220	295	400	430	150	150	350	450	429	PSTX250-690-70	1SFA898213R7000	4.7	10.3
257	355	500	515	150	200	450	500	523	PSTX300-690-70	1SFA898214R7000	4.7	10.3
355	450	600	640	200	250	500	600	625	PSTX370-690-70	1SFA898215R7000	4.7	10.3
450	600	800	814	250	300	600	700	830	PSTX470-690-70	1SFA898216R7000	4.7	10.3
540	700	960	987	300	350	700	800	1020	PSTX570-690-70	1SFA898217R7000	7.0	15.4
710	880	1200	1247	400	500	1000	1200	1240	PSTX720-690-70	1SFA898218R7000	7.0	15.4
800	1000	1400	1455	500	600	1200	1500	1450	PSTX840-690-70	1SFA898219R7000	8.9	19.6
1000	1250	1700	1810	600	700	1500	1800	1830	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
1200	1500	2000	2160	800	900	1800	2000	2160	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

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PSTX

Heavy-duty starts, class 30, inside delta

Ordering details



PSTX30... PSTX105



PSTX142... PSTX170



PSTX210... PSTX370



PSTX470... PSTX570



PSTX720... PSTX840



PSTX1050... PSTX1250

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Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power							pkg/1 pce	
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
18.5	25	-	42	7.5	10	25	30	34	PSTX30-600-70	1SFA898103R7000	4.6	10.1
25	30	-	52	10	15	30	40	48	PSTX37-600-70	1SFA898104R7000	4.6	10.1
30	37	-	64	15	20	40	50	58	PSTX45-600-70	1SFA898105R7000	4.6	10.1
37	45	-	76	20	25	50	60	72	PSTX60-600-70	1SFA898106R7000	4.6	10.1
55	75	-	105	30	40	75	100	103	PSTX72-600-70	1SFA898107R7000	4.6	10.1
59	80	-	124	30	40	75	100	117	PSTX85-600-70	1SFA898108R7000	4.6	10.1
75	90	-	147	40	50	100	125	138	PSTX105-600-70	1SFA898109R7000	4.6	10.1
90	110	-	181	60	60	150	150	180	PSTX142-600-70	1SFA898110R7000	4.6	10.1
132	160	-	245	75	75	150	200	225	PSTX170-600-70	1SFA898111R7000	4.7	10.3
160	200	-	300	75	100	200	250	292	PSTX210-600-70	1SFA898112R7000	4.7	10.3
184	250	-	360	100	125	250	300	332	PSTX250-600-70	1SFA898113R7000	4.7	10.3
220	295	-	430	150	150	350	450	429	PSTX300-600-70	1SFA898114R7000	4.7	10.3
257	355	-	515	150	200	450	500	523	PSTX370-600-70	1SFA898115R7000	4.7	10.3
355	450	-	640	200	250	500	600	625	PSTX470-600-70	1SFA898116R7000	4.7	10.3
450	600	-	814	250	300	600	700	830	PSTX570-600-70	1SFA898117R7000	7.0	15.4
540	700	-	987	300	350	700	800	1020	PSTX720-600-70	1SFA898118R7000	7.0	15.4
710	880	-	1247	400	500	1000	1200	1240	PSTX840-600-70	1SFA898119R7000	8.9	19.6
800	1000	-	1455	500	600	1200	1500	1450	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
1000	1250	-	1810	600	700	1500	1800	1830	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

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Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power							pkg/1 pce	
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			Net weight	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA				
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
18.5	25	37	42	7.5	10	25	30	34	PSTX30-690-70	1SFA898203R7000	4.6	10.1
25	30	45	52	10	15	30	40	48	PSTX37-690-70	1SFA898204R7000	4.6	10.1
30	37	55	64	15	20	40	50	58	PSTX45-690-70	1SFA898205R7000	4.6	10.1
37	45	59	76	20	25	50	60	72	PSTX60-690-70	1SFA898206R7000	4.6	10.1
55	75	90	105	30	40	75	100	103	PSTX72-690-70	1SFA898207R7000	4.6	10.1
59	80	110	124	30	40	75	100	117	PSTX85-690-70	1SFA898208R7000	4.6	10.1
75	90	132	147	40	50	100	125	138	PSTX105-690-70	1SFA898209R7000	4.6	10.1
90	110	160	181	60	60	150	150	180	PSTX142-690-70	1SFA898210R7000	4.6	10.1
132	160	220	245	75	75	150	200	225	PSTX170-690-70	1SFA898211R7000	4.7	10.3
160	200	257	300	75	100	200	250	292	PSTX210-690-70	1SFA898212R7000	4.7	10.3
184	250	315	360	100	125	250	300	332	PSTX250-690-70	1SFA898213R7000	4.7	10.3
220	295	400	430	150	150	350	450	429	PSTX300-690-70	1SFA898214R7000	4.7	10.3
257	355	500	515	150	200	450	500	523	PSTX370-690-70	1SFA898215R7000	4.7	10.3
355	450	600	640	200	250	500	600	625	PSTX470-690-70	1SFA898216R7000	4.7	10.3
450	600	800	814	250	300	600	700	830	PSTX570-690-70	1SFA898217R7000	7.0	15.4
540	700	960	987	300	350	700	800	1020	PSTX720-690-70	1SFA898218R7000	7.0	15.4
710	880	1200	1247	400	500	1000	1200	1240	PSTX840-690-70	1SFA898219R7000	8.9	19.6
800	1000	1400	1455	500	600	1200	1500	1450	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
1000	1250	1700	1810	600	700	1500	1800	1830	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

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PSTX
Accessories



Cable connectors for CU cables

Cable connectors for Cu cables

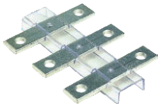
Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	6-120	8	KIT FC Cu XT4 3pcs	1SDA066917R1	3	0.18	0.40
PSTX142 ... PSTX170	2 x (50-95)	16	LZ185-2C/120	1SFN074709R1000	3	0.30	0.66
PSTX210 ... PSTX370	16-240	25	T5 400 3pcs	1SDA055016R1	3	0.36	0.79
PSTX210 ... PSTX370	2 x (95-185)	22	OZXB4/1	1SCA022194R0890	1	0.19	0.42
PSTX470 ... PSTX570	2 x (120-240)	35	T6 630-S6 6pcs	1SDA013922R1	6	0.57	1.26
PSTX570 ... PSTX1050	3 x (70-185)	45	T6 800-S6 6pcs	1SDA013956R1	6	2.12	4.68



Cable connectors for AL cables

Cable connectors for Al cables

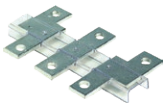
Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	95-185	31	KIT FC CuAl T4 3pcs	1SDA054988R1	3	0.14	0.31
PSTX210 ... PSTX370	185-240	43	KIT FC CuAl T5 400 3pcs	1SDA055020R1	3	0.24	0.54
PSTX470 ... PSTX1050	2 x (120-240)	31	KIT FC CuAl T6 630-S6 3pcs	1SDA023380R1	3	0.11	0.24



Terminal extensions

Terminal extensions

Article	Dimensions hole ø mm²	Bar mm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.25	5.55
PSTX210 ... PSTX370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.35	0.77
PSTX470 ... PSTX570	10.5	25 x 5	LX460	1SFN075710R1000	1	0.50	1.10
PSTX720 ... PSTX840	13	40 x 6	LX750	1SFN076110R1003	1	0.85	1.87



Terminal enlargements

Terminal enlargements

Article	Dimensions hole ø mm²	Bar mm	Type	Order code	Pkg qty	Net kg	lb
PSTX30 ... PSTX105	6.5	15 x 3	LW110	1SFN074307R1000	1	0.07	0.15
PSTX142 ... PSTX170	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.25	5.55
PSTX210 ... PSTX370	10.5	20 x 5	LW370	1SFN075407R1000	1	0.45	0.99
PSTX470 ... PSTX570	10.5	25 x 5	LW460	1SFN075707R1000	1	0.73	1.61
PSTX720 ... PSTX840	13	40 x 6	LW750	1SFN076107R1000	1	1.23	2.71



Terminal shrouds

Terminal shrouds

Article	Description	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	short for use with cable clamps	LT205-30C	1SFN124801R1000	2	0.05	0.11
PSTX142 ... PSTX170	long for use with compression lugs	LT205-30L	1SFN124803R1000	2	0.22	0.49
PSTX210 ... PSTX370	short for use with cable clamps	LT370-30C	1SFN125401R1000	2	0.04	0.08
PSTX210 ... PSTX370	long for use with compression lugs	LT370-30L	1SFN125403R1000	2	0.28	0.62
PSTX210 ... PSTX370	long and deep for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	2	0.15	0.33
PSTX470 ... PSTX570	short for use with cable clamps	LT460-AC	1SFN125701R1000	2	0.10	0.22
PSTX470 ... PSTX570	long for use with compression lugs	LT460-AL	1SFN125703R1000	2	0.80	1.76
PSTX720 ... PSTX1250	short for use with cable clamps	LT750-AC	1SFN126101R1000	2	0.12	0.27
PSTX720 ... PSTX1250	long for use with compression lugs	LT750-AL	1SFN126103R1000	2	0.83	1.82

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PSTX
Accessories



USB cable

PSTX USB cable

Article	Type	Order code	Pkg qty	Net kg	lb
PSTX USB Cable	PSCA-1	1SFA899314R1001	1	0.05	0.12



Fieldbus plug adaptor

Fieldbus plug connection, cable included

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adaptor	PS-FBPA	1SFA896312R1002	1	0.05	0.11



I/O module

I/O module, 24 V DC digital input

Article	Type	Order code	Pkg qty	Net kg	lb
Extension module for I/O	DX111-FBP.0	1SAJ611000R0101	1	0.22	0.49
Extension module for I/O 24 VDC	DX122-FBP.0	1SAJ622000R0101	1	0.22	0.49



- Profibus DP-V1
- Modbus RTU



DeviceNet



BACnet MS/TP



- BACnet IP
- EthetCAT
- EtherNet/IP
- Modbus TCP
- Profinet IO

Anybus connection accessory for communication protocol suitable for PSTX30 ...PSTX1250

Article	Type	Order code	Pkg qty	Net kg	lb
Profibus	AB-PROFIBUS-1	1SFA899300R1001	1	0.03	0.07
DeviceNet	AB-DEVICENET-1	1SFA899300R1002	1	0.03	0.07
Modbus-RTU	AB-MODBUS-RTU-1	1SFA899300R1003	1	0.03	0.07
NEW BACnet IP	AB- BACNET-IP-2	1SFA899300R1004	1	0.03	0.07
EtherNet/IP (2-port)	AB-ETHERNET-IP-2	1SFA899300R1006	1	0.03	0.07
Modbus/TCP (2-port)	AB-MODBUS-TCP-2	1SFA899300R1008	1	0.03	0.07
Profinet (2-port)	AB-PROFINET-IO-2	1SFA899300R1010	1	0.03	0.07
NEW BACnet MS/TP	AB-BACNET-MSTP-1	1SFA899300R1011	1	0.03	0.07
NEW EtherCAT	AB-ETHERCAT-IP-2	1SFA899300R1012	1	0.03	0.07

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PSTX
Technical data

Technical data	PSTX30... 1250
Rated insulation voltage U_i	690V
Rated operational voltage U_e	208...600 V, 208...690V +10% / -15%, 50/60Hz ±10%
Rated control supply voltage U_s	100...250 V +10%/-15%, 50/60Hz ±10%
Rated control circuit voltage U_c	Internal or external 24 V DC
Starting capacity at I_e	4 x I_e for 10 sec
Number of starts per hour	10 for PSTX30 ... PSTX370[1] 6 for PSTX470 ... PSTX1250[1]
Overload capability	Overload class 10
Maximum altitude	4000 m (13123 ft)[3]
Ambient temperature	
During operation	-25...+60 °C, (-13...+140 °F)[2]
During storage	-40...+70 °C, (-40...+158 °F)
Degree of protection	
Main circuit	-
Supply and control circuit	IP20
Main circuit	
Built-in bypass contactor	Yes
Cooling system - Fan cooled	Yes (thermostat controlled)
HMI for settings (Human Machine Interface)	
Display	LCD type, graphical
Languages	Arabic, Chinese, Czech, Dutch, English, Finnish, French, German, Greek, Indonesian, Italian, Polish, Portuguese, Russian, Spanish, Swedish and Turkish
Keypad	2 selection keys, 4 navigation keys, start key, stop key, info key and remote/local key
Signal relays	
Number of programmable signal relays	3 (each relay can be programmed to None, Run, Top of ramp, Event group 0-6, Sequence 1-3 Run, Sequence 1-3 Top of ramp or Run reverse)
K4	Default as Run signal
K5	Default as Top of Ramp (Bypass) signal
K6	Default as Event group 0 (Faults)
Rated operational voltage, U_e	250 V AC/24 V DC
Rated thermal current I_{th}	5 A
Rated operational current I_e at AC-15 (U_e=250 V)	1.5 A
Analog output	
Output signal reference	0...10 V, 0...10 mA, 0...20 mA, 4...20 mA
Type of output signal	Motor current (A), Main voltage (V), Active power (kW), Active power (HP), Reactive power (kVAr), Apparant power (kVArh), Active energy (kWh), Reactive energy (kVArh), cos phi, Motor temperature (%), Thyristor temperature (%), Motor voltage (%), Main frequency (Hz), PT100 temperature (centigrade), PTC resistance (Ohm)

Control circuit	
Number of inputs	2 (start, stop)
Number of additional programmable inputs	3 (each input can be programmed to: None, Reset, Enable, Slow speed forward (Jog), Slow speed reverse (Jog), Motor heating, Stand still brake, Start reverse, User defined protection, Emergency mode (active high), Emergency mode (active low), Fieldbus disable control, Start 1, Start 2, Start 3, Switch to remote control or Cancel brake)
Signalling indication LED	
Ready	Green
Run	Green
Fault	Red
Protection	Yellow
External keypad	
Detachable keypad	Yes
Display	LCD type, graphical
Ambient temperature	
During operation	-25...+60 °C, (-13...+140 °F)
During storage	-40...+70 °C, (-40...+158 °F)
Degree of protection	IP66 (Type 1, 4X, 12)
Start and stop functions	
Soft start with voltage ramp	Linear voltage ramp, suitable for most applications
Soft stop with voltage ramp	Used to prolong the stop sequence
Soft start with torque control	Linear torque ramp, the best way to start pumps
Soft stop with torque control	Commonly used to reduce water hammering in pumps
Kick start	More power in the start for heavy duty applications.
Full voltage start	0.5 second start ramp for applications with need of high starting torque
Sequence start	Start multiple motors with one softstarter
Current limit	Limits the current below a specified value
Dual current limit	Consist of a low level, a high level and a time between them
Current limit ramp	A linear increase of the current from the low to the high level
Torque limit	Limit the torque to between 20-200%
Pre-start function	Use Motor heating, Stand still brake or Jog automatically prior to start ramp
Jog with slow speed, forward and reverse	Run the motor in three different speeds, both forward and reverse
Start reverse (external contactors)	Internal logic that allows control of external contactors for reverse start
Dynamic brake	Provides a braking force to decrease stop time

[1] Valid for normal start (class 10) for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8% per °C (0.44% per °F).
[3] When used at high alitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the following formula.
[% of I_e = 100- $\frac{x\text{-}1000}{150}$] x = actual altitude of the softstarter in meter, [% of I_e = 100 - $\frac{x\text{-}3280}{497}$] x = actual altitude of the softstarter in feet. For de-rating of voltage, contact your local ABB office.

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PSTX
Technical data

Fieldbus connection	
Built-in Modbus RTU	Yes, with RS485 interface on terminals 23 and 24
Connection for Anybus	Yes, including most common protocols, see catalog for details
Connection for ABB Fieldbus plug	Yes, compatible with a special adapter, see catalog for details
Protections	
Electronic overload protection, EOL	User defined, class 10A, 10, 20, 30
Dual overload (separate overload for start and run)	Possible to set separate overloads for start and full speed
PTC connection	User defined temerature control with external PTC sensor
PT-100 connection	User defined temerature control with external PT-100 sensor
Locked rotor protection	Prevents start if motor is stuck, e.g. stuck pumps and conveyors
Current underload protection	Stops the process if the load is too light, e.g. a pump running dry
Current imbalance protection	User defined, checks current imbalance between the phases
Power factor underload protection	User defined, trip if power factor is out of range
Under voltage protection	User defined, prevents the motor from stalling in weak networks
Over voltage protection	User defined, prevents the motor from damage at high voltage levels
Voltage imbalance protection	User defined, checks voltage imbalance between the phases
Earth fault protection / ground fault protection	User defined, 0.1-1.0 sec, stops the process if earth fault is detected
Phase reversal protection	Prevents start if phases are connected in the wrong order
Bypass open protection	Trips if the bypass is open when it should be closed
User defined protection	Programmable input, can be used with externa protection device
Too long current limit protection	User defined, trips when the current has been at the current limit for too long time
HMI failure protection	Indicates communication failure between softstarter and HMI
Fieldbus failure protection	Indicates communication failure between softstarter and PLC
Extension IO failure protection	Indicates communication failure between softstarter and IO module
Max number of starts/hour	Prevents start if the thyristors gets too warm (thus used over specification)
Too long start time protection	User defined, trips when the starting time exceeds a set value
External faults detection	
Phase loss	Yes
Hight current	Yes
Low control supply voltage	Yes
Faulty usage	Yes, e.g. using limp mode inside-delta
Faulty connection	Yes
Bad network quality	Yes
Vibration test	
According to IEC 60068-2-6:2007	

Warnings	
Current underload warning	User defined on/off
Current imbalance warning	User defined on/off
Voltage imbalance warning	User defined on/off
Thyristor overload warning (SCR)	User defined on/off
Electronic overload Time-to-trip	User defined on/off
Short circuit warning (for Limp mode)	User defined on/off, for Limp mode
Over voltage warning	User defined on/off
Under voltage warning	User defined on/off
Power factor underload warning	User defined on/off
Locked rotor warning	User defined on/off
Faulty fan warning	User defined on/off
THD(U) - Total Harmonic Distortion warning	User defined on/off
Motor runtime limit warning	User defined on/off
Phase loss warning (for stand by)	User defined on/off, for stand by
EOL warning	User defined on/off
Internal faults detection	
Thyristor overload	Yes
Short circuit	Yes
Open circuit thyristor or gate	Yes
Heat sink over temperature	Yes
Shunt fault	Yes
PTC input	
Switch off resistance	2825 ohm ± 20%
Switch on resistance	1200 ohm ± 20%
Other functions	
Real time clock	Can maintain time when the softstarter isn't powered up, 48 h back-up
Event log	Log of events such as trips, parameters changed and operation
Emergency mode	To keep the softstarter running regardless of trip or failure. Activated via DI
Automatic restart	In case of trip and stopped motor, the softstarter can restart itself
Keypad password	Lock the keypad to inhibit unathorized motor control
Pump cleaning	Can reverse pump flow and clean out pipes
Electronic overload Time-to-cool	Time until the motor is ready to be restarted efter an EOL trip
Thyristor runtime measurement	Measures most electrical variables, e.g. voltage, current and power
Auto phase sequence detection	Detection of the phase sequence
Electricity metering	Measures most electrical variables, e.g. voltage, current and power
Motor heating	DC injection in all windings to heat up the motor. Useful in cold or humid environment
Stand still brake	Prevents the motor from moving, useful to keep fans from reversing
Voltage sags detection	User defined
Limp mode with two-phase motor control if one set of thyristors is shorted	Can keep process running until planned maintenance

For all functions and features see installation and commissioning manual, available on solutions.abb/softstarters

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PSTX
Technical data

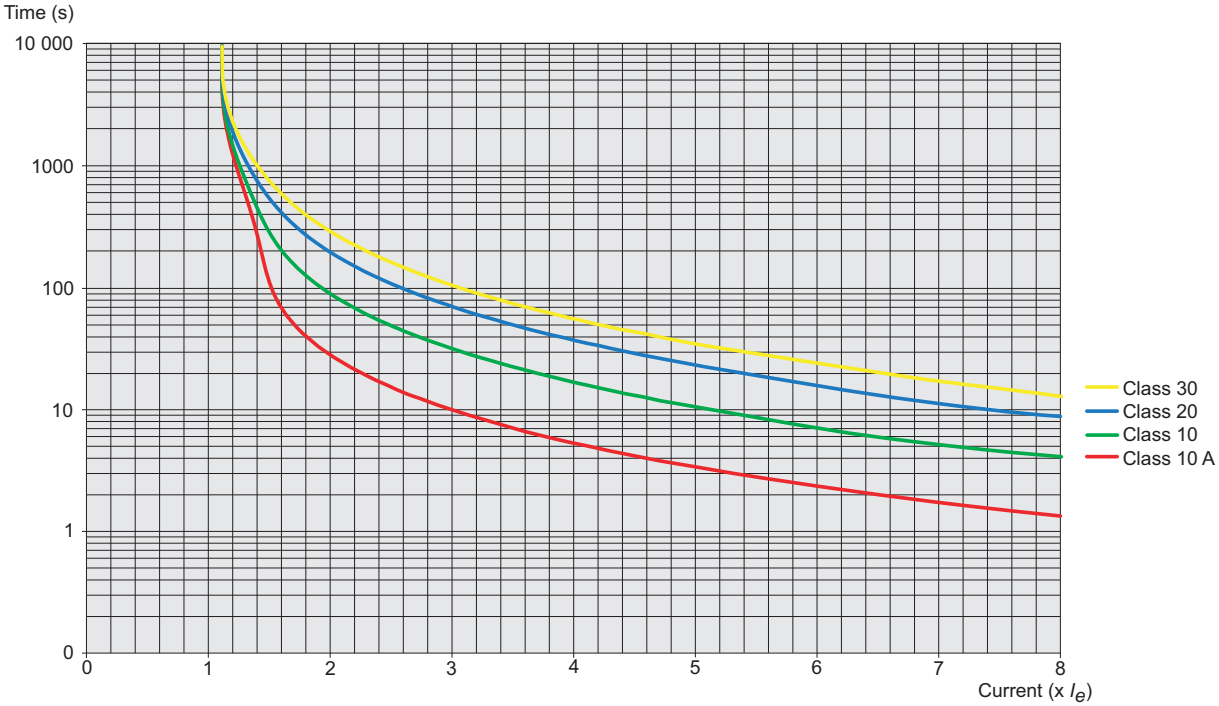
Fuse ratings and power losses

Softstarter	Current range A	Max power loss at rated I_e W	Max fuse rating - main circuit[1,2] Bussmann fuses, DIN43 620 (Knife) A	Type	Size	Power requirements supply circuit Holding (VA) /Pull-in (VA)
PSTX30	9.0...30.0	0.8	100	170M1567	000	49/51
PSTX37	11.1...37.0	1.2	125	170M1568	000	49/51
PSTX45	13.5...45.0	1.8	160	170M1569	000	49/51
PSTX60	18.0...60.0	3.2	160	170M1569	000	49/51
PSTX72	21.6...72.0	4.7	250	170M1571	000	49/51
PSTX85	22.5...85.0	6.5	315	170M1572	000	49/51
PSTX105	31.8...106.0	10	400	170M3819	1	49/51
PSTX142	42.9...143.0	18	500	170M5810	2	49/53
PSTX170	51.3...171.0	26	630	170M5812	2	49/53
PSTX210	63.0...210.0	48	630	170M5812	2	56/276
PSTX250	75.0...250.0	68	700	170M5813	2	56/276
PSTX300	90.0...300.0	97	800	170M6812	3	56/276
PSTX370	111.0...370.0	148	900	170M6813	3	56/276
PSTX470	141.0...470.0	99	900	170M6813	3	67/434
PSTX570	171.0...570.0	146	1000	170M6814	3	67/434
PSTX720	216.0...720.0	78	1250	170M8554	3	61/929
PSTX840	252.0...840.0	106	1500	170M6018	3	61/929
PSTX1050[3]	315.0...1050.0	165	1800	170M6020	3	68/929
PSTX1250[3,4]	375.0...1250.0	234	2000	170M6021	3	68/929

[1] For the supply circuit 6 A delayed, for MCB use C characteristics.
[2] For inside delta connection the fuses shall be placed inside the delta. Contact ABB for more information.
[3] 170M6019 with fuse rating 1600 A should be used for 690 V version.
[4] For 690 V version, Bussmann fuses are only available for motors with rated current up to 1150 A.

Tripping curves for electronic overload protection (cold) for PSE and PSTX

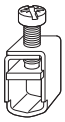
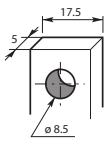
Tripping curves for the integrated electronic overload protection. All units have an integrated electronic overload protection that can be set to four different tripping classes. Below you find a curve for each tripping class in cold state. These tripping curves are valid for PSTX.

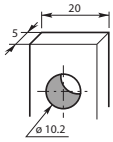


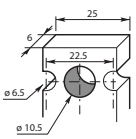
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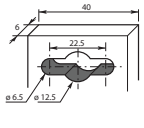
PSTX

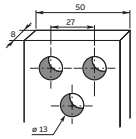
Technical data









Main terminals

Article	PSTX30 ... PSTX105	PSTX142 ... PSTX170	PSTX210 ... PSTX370	PSTX470 ... PSTX570	PSTX720 ... PSTX1050	PSTX1250
Cu cable - flexible 1 x mm²	10...70 mm²	6...120 mm²	16...240 mm²	-	-	-
Clamp type	Included	1SDA066917R1	1SDA055016R1	-	-	-
Tightening torque	8 Nm	14 Nm	25 Nm	-	-	-
Cu cable - flexible 2 x mm²	6...35 mm²	50...95 mm²	70...185 mm²	-	-	-
Clamp type	Included	LZ185-2C/120 1SFN074709R1000	OZXB4[1] 1SCA022194R0890	-	-	-
Tightening torque	8 Nm	16 Nm	22 Nm	-	-	-
Cu cable - Stranded 1 x mm²	10...95 mm²	6...150 mm²	16...300 mm²	-	-	-
Clamp type	Included	1SDA066917R1	1SDA055016R1	-	-	-
Tightening torque	8 Nm	14 Nm	25 Nm	-	-	-
Cu cable - Stranded 2 x mm²	6...35 mm²	50...120 mm²	70...185 mm²	120...240 mm²	-	-
Clamp type	Included	LZ185 - 2C/120 1SFN074709R1000	OZXB4[1] 1SCA022194R0890	1SDA013922R1	-	-
Tightening torque	8 Nm	16 Nm	22 Nm	35 Nm	-	-
Cu cable - Stranded 3 x mm²	-	-	-	-	70...185 mm²	-
Clamp type	-	-	-	-	1SDA013956R1	-
Tightening torque	-	-	-	-	45 Nm	-
Al cable - Stranded 1 x mm²	-	95...185 mm²	185...240 mm²	-	-	-
Clamp type	-	1SDA0549881R1	1SDA055020R1	-	-	-
Tightening torque	-	31 Nm	43 Nm	-	-	-
Al cable - Stranded 2 x mm²	-	-	-	120...240 mm²	-	-
Clamp type	-	-	-	1SDA023380R1	-	-
Tightening torque	-	-	-	31 Nm	-	-
Lugs Width ≤	-	24 mm (0.945 in)	32 mm (1.260 in)	47 mm (1.850 in)	50 mm (1.969 in)	50 mm (1.969 in)
Diameter >=	-	8 mm (0.355 in)	10.2 mm (0.402 in)	10.5 mm (0.413 in)	12.5 mm (0.492 in)	13 mm (0.519 in)
Tightening torque	-	18 Nm (160 in lb)	28 Nm (248 in lb)	35 Nm (310 in lb)	45 Nm (398 in lb)	45 Nm (398 in lb)
Connection capacity acc to UL / CSA 1 x AWG / kcmil	6...2/0	6...300 kcmil	4...400 kcmil	-	-	-
Clamp type	Included	ATK185	ATK300	-	-	-
Tightening torque	71 in lb	300 in lb	375 in lb	-	-	-
Connection capacity acc to UL / CSA 2 x AWG / kcmil	-	-	4...500 kcmil	2/0...500 kcmil	2/0...500 kcmil	-
Clamp type	-	-	ATK300/2[2]	ATK580/2	ATK580/2	-
Tightening torque	-	-	375 in lb	375 in lb	375 in lb	-
Connection capacity acc to UL / CSA 3 x AWG / kcmil	-	-	-	2/0...500 kcmil	2/0...500 kcmil	-
Clamp type	-	-	-	ATK750/3	ATK750/3	-
Tightening torque	-	-	-	375 in lb	375 in lb	-
Supply and control circuit						
Cu cable - Stranded 1 x mm²						0.75...2.5 mm² (19...14 AWG)
Cu cable - Stranded 2 x mm²						0.75...1.5 mm² (19...16 AWG)
Tightening torque						0.5 Nm (4.4 in lb)

[1] Terminal shrouds 1SFN125406R1000 must be used.
[2] Terminal shrouds 1SFN125406R1000 can be used.

PSTX integrated bypass ratings

All ABB's softstarters are equipped with a built-in bypass contactor. This bypass contactor is rated AC-1 since it only make and break the motor in full speed at the rated current of the softstarter. However, in the PSTX470-PSTX1050 products, the bypass contactors has also a lower rated AC-3 rating which is shown in the table below.

Softstarter	PSTX470... PSTX570	PSTX720... PSTX1050	PSTX1250
Integrated contactor	**AF370**	**AF750**	**AF1250**
AC-3 rating at 400 V	370 A	750 A	-
IEC AC-3 Rated operational power at 400 V	200 kW	400 kW	-
UL/CSA 3-phase motor rating at 480 V	300 hp	600 hp	-

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Fieldbus communication

For softstarters

Fieldbus communication interface offering

PSR, PSE and PSTX softstarters can be connected to a fieldbus network for monitoring and control. All major industrial fieldbus protocols are covered with different accessories making the installation very flexible

Built-in Modbus-RTU for PSTX and PSE

- Built-in Modbus RTU communication interface
- Easy to install using the Modbus RTU adaptor which is included with the softstarter
- Through this communication interface it is possible to get full control and status information of the softstarter as well as reading- and writing parameters

Anybus connection for PSTX

- Anybus connection accessory for communication protocol suitable for PSTX30... PSTX1250


PROFIBUS


DeviceNet


Modbus RTU


BACnet IP


EtherNet IP


Modbus TCP


PROFINET


BACnet MS/TP


EtherCAT

Anybus connection accesssory for communication protocol suitable for PSTX30 ...PSTX1250

Article	Type	Order code	Pkg qty	kg	lb
Profibus	AB-PROFIBUS-1	1SFA899300R1001	1	0.03	0.07
DeviceNet	AB-DEVICENET-1	1SFA899300R1002	1	0.03	0.07
Modbus-RTU[1]	AB-MODBUS-RTU-1	1SFA899300R1003	1	0.03	0.07
NEW BACnet IP	AB- BACNET-IP-2	1SFA899300R1004	1	0.03	0.07
EtherNet/IP (2-port)	AB-ETHERNET-IP-2	1SFA899300R1006	1	0.03	0.07
Modbus/TCP (2-port)	AB-MODBUS-TCP-2	1SFA899300R1008	1	0.03	0.07
Profinet (2-port)	AB-PROFINET-IO-2	1SFA899300R1010	1	0.03	0.07
NEW BACnet MS/TP	AB-BACNET-MSTP-1	1SFA899300R1011	1	0.03	0.07
NEW EtherCAT	AB-ETHERCAT-IP-2	1SFA899300R1012	1	0.03	0.07

[1] Only needed when Com 3-port is used with Extension I/O

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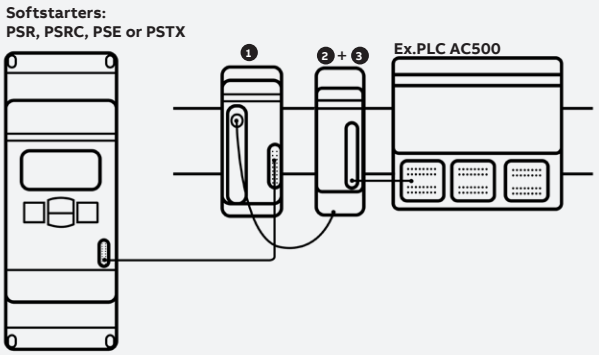
Fieldbus communication

For softstarters

Fieldbus communication interface offering
Available communication protocols for softstarters

Communication	PSR	PSRC	PSE	PSTX
Modbus RTU	○	○	●	●
Profibus	○	○	○	○
DeviceNet	○	○	○	○
Modbus TCP	–	–	○	–
Anybus	–	–	–	○

● = Built-in
○ = Optional
– = not available




Fieldbus plug adapter

1 Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11


Fieldbus plug kit

2 Fieldbus plug kit for mounting fieldbus plug adapter together with fieldbus plugs
Includes: Holder, cable, cable holder and 2 terminal blocks

Article	Type	Order code	Pkg qty	kg	lb
Accessory kit	PS-FBPK	1SFA899320R1002	1	0.15	0.33


- Profibus
- DeviceNET

3 Fieldbus communication interface

Article	Type	Order code	Pkg qty	kg	lb
Profibus					
Profibus DP communication interface	PDP32.0	1SAJ242000R0001	1	0.05	0.11
Cable from PDP32.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13
DeviceNet					
DeviceNet communication interface; terminal block for fieldbus connection included	DNP31.0	1SAJ231000R0001	1	0.04	0.09
Cable from DNP31.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13
Modbus-TCP (No fieldbus plug kit needed)					
Ethernet Modbus TCP interface	MTQ22-FBP	1SAJ260000R0100	1	0.17	0.38
Cable ETH-X1/X4-M12 female, length 1.5m	CDP17-FBP.150	1SAJ929170R0015	1	0.08	0.17
Modbus-RTU[1]					
Modbus RTU communication interface; terminal block for fieldbus connection included	MRP31.0	1SAJ251000R0001	1	0.04	0.09
Cable from MRP31.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13


Modbus-TCP

[1] Only for PSR
Note: See separate catalog for fieldbus communication interfaces:
https://search.abb.com/library/Download.aspx?DocumentID=2CDC190022C0206&LanguageCode=en&DocumentPartId=&Action=Launch
For more information visit the Universal Motor Controller website:
https://new.abb.com/low-voltage/products/motor-controllers/universal-motor-controllers

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Hydraulic elevator softstarter ELV-X

Introduction



ELV-X series hydraulic elevator softstarters up to 250 hp are the latest additions to the ABB softstarting portfolio.

These robust and energy efficient softstarting solutions are designed for safe and reliable operation of hydraulic elevators.

ELV-X series are cULus listed and conform to ASME A17.1/CSA B44 and ASME 17.5.

Comprehensive range
The solution has been designed from existing PSTX range of softstarters of different sizes and ratings, it consists of a pre-connected unit with a softstarter and a contactor mounted on a panel, Ready for mounting in the elevator control cabinet.

Installation efficiency
Reduced installation time and control panel size by having all features you need built into the solution, The solution is easy to install thanks to the compact design and many built-in features, The bypass built into softstarters saves energy and space while reducing heat generation.

Application productivity
Increased equipment lifetime by protecting it from electrical and mechanical stresses with torque control, intuitive HMI and diagnostics help the application to run at its full potential.

Range and features

	Current Limit	Electronic motor overload protection	Underload protection	Locked rotor protection	Current/Voltage imbalance protection	Phase reversal protection	Customer defined protection	Motor heating	PTC/PT100 input for motor protection	Overvoltage/undervoltage protection	Earth-fault protection	Built-in bypass	Inside-delta connection possible	Graphical display and keypad	Detachable keypad	Motor runtime and start count	Programmable warning functions	Diagnostics	Overload time-to-trip and time-to-cool	Analog output	Fieldbus communication	Event log	Electricity metering	Torque control	Coated PCBA	Limp mode	Jog with slow speed forward/reverse	Dynamic and stand still brake	Sequence start	Full voltage start	Kick start
ELV-X	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Secure motor reliability											**Improve installation efficiency**												**Increase application productivity**							

• = standard

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Hydraulic elevator softstarter ELV-X

Ordering details

ELV-X series selection (PSTX softstarter control inside)

In-line connection - 3 wire				Inside delta connection - 6 wire				Ie setting range (A)	Max FLA (A)	Frame Size	Type code	Order code
Max HP rating @ rated voltage				Max HP rating @ rated voltage								
200/208	220/240	440/480	550/600	200/208	220/240	440/480	550/600					
7.5	10	20	25	10	15	30	40	9…30	28	A	ELV30-X-600-70	1SFA971208R7000
10	10	25	30	15	20	40	50	11.1…37	34	A	ELV37-X-600-70	1SFA971209R7000
10	15	30	40	20	25	50	60	13.5…45	42	A	ELV45-X-600-70	1SFA971210R7000
20	20	40	50	30	40	75	100	18…60	60	A	ELV60-X-600-70	1SFA971211R7000
20	25	50	60	30	40	75	100	21.6…72	68	A	ELV72-X-600-70	1SFA971212R7000
25	30	60	75	40	50	100	125	25.5…85	80	A	ELV85-X-600-70	1SFA971213R7000
30	40	75	100	60	60	150	150	31.5…106	104	A	EL105-X-600-70	1SFA971214R7000
40	50	100	125	75	75	150	200	42.9…143	130	B	ELV142-X-600-70	1SFA971215R7000
50	60	125	150	75	100	200	250	51.3…171	169	B	ELV170-X-600-70	1SFA971216R7000

Main voltage 208-600 V AC 50/60 Hz, Control supply voltage 100-250 VAC 50/60 Hz, please see main catalog for Softstarters for more information 1SFC132012C0201.

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Hydraulic elevator softstarter ELV-X

Technical data

Power circuit	
Rated insulation voltage Ui	600 V
Rated operational voltage Ue	208…600 V, +10 % / -15 %
Operating frequency	50/60 Hz, + 10 %
Rated Impulse withstand voltage Uimp	6 kV
Type of load control	3-phase squirrel cage induction motor loads

Control circuit	
Rated control supply voltage Us	100…250 V, +10 % / -15 %
Rated Control circuit voltage Uc	Internal or external 24 V DC
Operating frequency	50/60 Hz, + 10 %
Rated Impulse withstand voltage Uimp	4 kV
Number of inputs	6 (Start, Stop, 3 programmable, Temperature sensor)
Number of outputs	3 Signal Relays (Run, TOR, Event)
Relay contact ratings	250 VA AC / 24 V DC, Ith 3 A, Ie 1.5 A at AC-15 (Ue=250 V AC)
Analog output reference	0…10 V / 0…10 mA / 0…20 mA / 4…20 mA

Communication	
Modbus RTU	Built in
Other protocols	Yes (option)

Construction	
Thyristor bypass	Built in
Cooling system	Fan cooled (Thermostat controlled)
Display	Illuminated graphical LCD
Keypad	10 keys (selection, navigation, command)
Degree of protection - power circuit	IP 00
Degree of protection - control circuit	IP 20

Environment	
Operating temperature	-25….+60 °C (-13…+140 °F)[2]
Storage temperature	-40….+70 °C (-40…+158 °F)
Relative humidity	5…95 % (non-condensing)
Maximum altitude	4000 m (13123 ft)[3]
Pollution degree	3

Certification	
Standards	UL 508, CSA C22.2 No 14. cULus Listed, ASME A17.1 / CSA B44 & ASME 17.5
Markings	

[1] See PSTX Softstarter data in the document 1SFC132012C0201 rev I, 2022.03

[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8 % per °C (0,44 % per °F)

[3] When used at high altitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the formula **% of Ie = 100 - (x - 1000)/150** where x = actual altitude of the softstarter in **meters**, or using the formula **% of Ie = 100 - (y - 3280)/480** where y = actual altitude of the softstarter in **feet**.

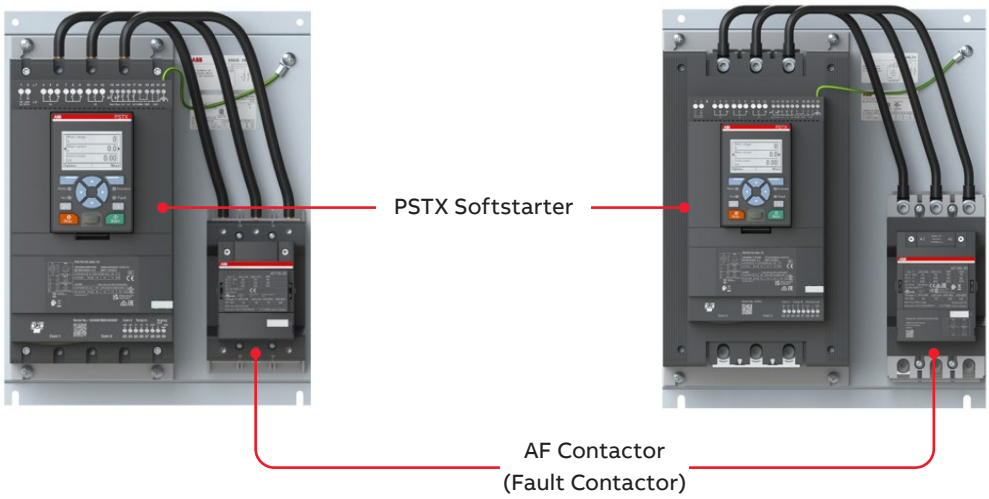
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Hydraulic elevator softstarter ELV-X

Technical data

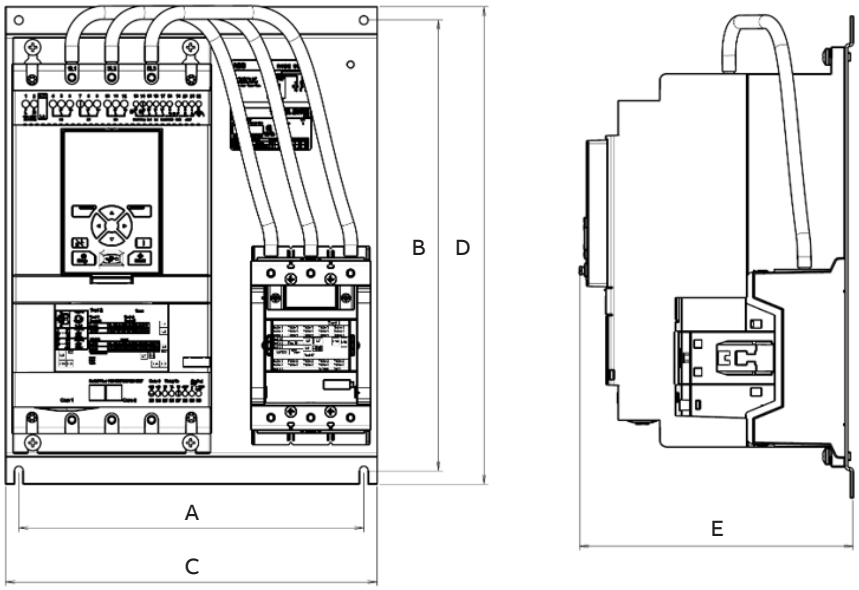
ELV-X series assembly Frame A

ELV-X series assembly Frame B



Dimension drawings

ELV-X frame A/B



		Frame A	Frame B
Drill Holes	**A**	260 (10.24)	305 (12.01)
	B	340 (13.39)	405 (15.94)
Panel Dimension	**C**	280 (11.02)	345 (13.58)
	D	360 (14.17)	425 (16.73)
Depth	**E**	203.5 (8.01)	244.3 (9.62)

All dimensions in mm (inch)

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Notes

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CONTROL SECTION 10

Measuring and monitoring



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EQ energy meters
Introduction



B23 112-500



B23 312-500

B23 112-500 and B23 312-500 are precise meters for three phase measuring.

Both meters are mounted on a DIN-rail and are suitable for installation in industrial control panels and power panels.

Thanks to the direct connection for current up to 65A, they can be used for applications in EV chargers, solar inverters, PDUs/RPPs, HVAC systems, pumps and many more.

General features
The UL range includes performance levels “Steel” B23 112-500 and “Silver” B23 312-500 meters. Both meters are suitable for three phase metering via direct connection up to 65A. Reliable energy measurements are performed with ANSI approved Class 1.0 accuracy, making them suitable for revenue metering.
In addition, the two meters are coupled with a broad range of measured parameters.

Communication
Both the B23 112-500 and B23 312-500 meters come standard with Modbus RTU for easy readout of measurements. Additionally, an infrared port for communication with an external Serial Communication Adapter (SCA) such as the KNX adapter is also provided.

UL and ANSI Approval
Both meters are approved according to standards of the UL 61010-1 and UL 61010-2-030 which regulate the safety requirements of electrical equipment for measurement, control, and laboratory use, also in testing and measuring applications.

Additionally, the two meters are ANSI C12.1 approved. In fact, their performance levels are suitable for revenue metering, which they execute with Class 1 accuracy.

Supported measurements
The meters support the readout of the following values both via LCD and Modbus RTU:

Steel
- Active energy
- Class 1
- Pulse output
- Alarm

Silver
- Steel+
- Reactive energy
- Apparent energy
- Import/export energy
- Class 1
- Resettable energy register
- Tariffs
- Fixed I/O

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EQ energy meters
Ordering information

Ordering information

Catalog number	Global material number	EAN code	Weight 1 piece kg
B23 112-500	2CMA105928R1000	8012542389057	0.31
B23 312-500	2CMA105931R1000	8012542389255	0.31

Voltage/current inputs	**B23 112-500**	**B23 312-500**
Nominal voltage	120/208/240/415 VAC 3	
Voltage range	3x120-240 VAC (-20% to +15%)	
Power dissipation voltage circuits	1.6 VA (0.7 W) total	
Power dissipation current circuits	0.007 VA (0.007 W) per phase at 230 VAC and I_b	
Base current I_b	5A	
Rated current I_n	–	
Reference current I_{ref}	5A	
Maximum current I_{max}	65A	
Terminal wiring area (L * W)	4/10 AWG Stranded, 10/14 AWG Solid	
General data		
Frequency	50 or 60 Hz ±5%	
Accuracy class	1% ANSI C12.1 / B (Cl. 1) and Reactive Cl. 2	
Active energy	1%	
Display of energy	7-digit LCD	
Mechanical		
Material	Polycarbonate in transparent front glass. Glass reinforced polycarbonate in bottom case and upper case. Polycarbonate in terminal cover.	
Weight	0.31 kg	
Environmental		
Operating temperature	-40°C to +70°C	
Storage temperature	-40°C to +85°C	
Humidity	75% yearly average, 95% on 30 days/year	
Resistance to water and dust	IP20 on terminal block without protective enclosure and IP51 in protective enclosure (IEC 60529)	
Mechanical environment	Class M2 (MID 2014/32/UE)	
Electromagnetic environment	Class E2 (MID 2014/32/UE)	
Outputs	1 DO	2 DO
Current	2 - 100 mA	
Voltage	5 - 40 VDC	5 - 240 VAC/VDC
Pulse output frequency	Programmable: 1 - 999999 imp/kWh	
Pulse length	Programmable: 10 - 990 ms	
Terminal wire area	0.5 - 1 mm²	
Inputs	N/A	2 DI
Voltage	0 - 240 VAC/VDC	
OFF	0 - 5 VAC/VDC	
ON	57 - 240 VAC/24 - 240 VDC	
Min. pulse length	30 ms	
Terminal wire area	0.5 - 1 mm²	
Standards	IEC 62052-11, IEC 62053-21 class 1, IEC 62053-23 class 2, EN 50470-1, EN 50470-3 category B, UL 61010-1, UL 61010-2-030, UL/ANSI C12.1	
Dimensions		
Width	70 mm	
Height	97 mm	
Depth	65 mm	

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Circuit monitoring system (CMS)

Control unit comparison





Characteristics	Control unit CMS-600	Control unit CMS-700
CMS sensors		
Sensors	64 (2x32)	96 (3x32)
Measured values		
Power supply		●
Current	●	●
Power		●
Energy		●
Built-in power pack		●
Power factor		●
Interfaces		
RS485	●	●
LAN		●
WiFi		
Protocols		
Modbus RTU	●	●
Modbus TCP		●
SNMP		●
Visualization		
Built-in web server		●
App		
Touch display	●	
CSV data export		●
Approvals		
IEC 61010-1	●	●
UL 508/CSA C22.2 No. 14	●	●

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Circuit monitoring system (CMS)

Ordering information

Control unit

Product	Product name	Description	Catalog number
	CMS-600	Modbus RTU (24 VDC)	CMS-600
	CMS-700	Modbus RTU	CMS-700

Sensors

Product	Product name	Description	Catalog number
	CMS-120PS	**Open core**	
		Sensors 18 mm for pro M compact and SMISSLINE installation devices with twin terminals	
		80 A	CMS-120PS
		40 A	CMS-121PS
		20 A	CMS-122PS
	CMS-120DR	**Sensors 18 mm for DIN-rail mounting (universal use)**	
		80 A	CMS-120DR
		40 A	CMS-121DR
		20 A	CMS-122DR
	CMS-120CA	**Sensors 18 mm for cable mounting (universal use)**	
		80 A	CMS-120CA
		40 A	CMS-121CA
		20 A	CMS-122CA
	CMS-100PS	**Closed core**	
		Sensors 18 mm for pro M compact and SMISSLINE installation devices with twin terminals	
		80 A	CMS-100PS
		40 A	CMS-101PS
		20 A	CMS-102PS
	CMS-100S8	**Sensors 18 mm for S800 installation devices with cage terminals**	
		80 A	CMS-100S8
		40 A	CMS-101S8
		20 A	CMS-102S8
	CMS-100DR	**Sensors 18 mm for DIN-rail mounting (universal use)**	
		80 A	CMS-100DR
		40 A	CMS-101DR
		20 A	CMS-102DR
	CMS-100CA	**Sensors 18 mm for cable mounting (universal use)**	
		80 A	CMS-100CA
		40 A	CMS-101CA
		20 A	CMS-102CA
	CMS-200S8	**Sensors 25 mm for S800 installation devices with cage terminals**	
		160 A	CMS-200S8
		80 A	CMS-201S8
		40 A	CMS-202S8
	CMS-200DR	**Sensors 25 mm for DIN-rail mounting (universal use)**	
		160 A	CMS-200DR
		80 A	CMS-201DR
		40 A	CMS-202DR
	CMS-200CA	**Sensors 25 mm for cable mounting (universal use)**	
		160 A	CMS-200CA
		80 A	CMS-201CA
		40 A	CMS-202CA

Accessories

Description	Catalog number
Flat cable 2 m	CMS-800
Flat cable 5 m	CMS-802
Flat cable 10 m	CMS-803
Flat cable 30 m	CMS-805
Connector set	CMS-820

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Circuit monitoring system (CMS)

Technical specifications

CMS-600 control unit (Modbus RTU)



CMS-600

Supply voltage	(VDC)	24 (±10%)
Power consumption	(W)	max. 24 W (with 64 sensors)
Interface		RS485 2-wire
Protocol		Modbus RTU
Data rate	(Baud)	2400 ... 115 200
Data refresh time		≤1 sec with max 64 sensors
Insulation voltage	(VAC)	400
Screw-type terminals		0.5 ... 2.5 mm², max 0.6 Nm
Mounting		DIN-rail 35 mm acc. DIN50022 or SMISSLINE TP busbar system
Dimension	(mm)	71.8 x 87.0 x 64.9 (4 DIN modules)
Operating temperature	(°C)	-25 ... +70
Storage temperature	(°C)	-40 ... +85
Standards		DIN EN 61010-1, UL508

CMS-700 control unit



CMS-700

Supply voltage	(VAC)	80 – 277 (L1-N, +5%)
Frequency	(Hz)	50/60
Power input (L1-N)	(W)	5 ... 40 (dep. on number of sensors)
Power input, current transformer, secondary side	(VA)	Current circuit <2 (per phase)
Voltage measurement range	(VAC)	80 – 277 (L1, L2, L3-N)
Measurement range, current transformer, secondary side	(A)	nominal: 5 max.: 6
Harmonic component	(Hz)	up to 2000
Data rate of Modbus RTU	(Baud)	RS485 2-wire, 2400 ... 115 200
Refresh time		≤1 sec with max. 96 sensors
LAN	(Mbit/s)	100
Conductor cross-section	(mm²)	0.5 ... 2.5
Mounting method		35 mm DIN-rail (DIN 50022)
Degree of protection		IP20
Dimensions	(mm)	160.0 x 87.0 x 64.9 (9 WM)
Operating temperature	(°C)	-25 ... +60
Bearing temperature	(°C)	-40 ... +85
Standards		IEC61010-1 UL 508/CSA C22.2 No. 14
Main circuit accuracy		
Voltage		±1%
Current		±1%
Harmonic component		1%
Active power		±2%
Apparent power		±2%
Reactive power		±2%
Power factor		±0.2%

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Circuit monitoring system (CMS)

Technical specifications

Open core sensors 18 mm

Product	Type		CMS-120xx	CMS-121xx	CMS-122xx
 CMS-120PS	Measurement range	(A)	80	40	20
	Measurement values		–	–	TRMS, AC 50/60 Hz, DC
	Crest factor of distorted wave forms		≤1.5	≤3	≤6
	AC accuracy (TA = +25°C)[1]		–	–	≤ ±1%
	AC temperature coefficient[1]		–	–	≤ ±0.04%
	DC accuracy (TA = +25°C)[1]		≤ ±1.2%	≤ ±1.4%	≤ ±1.8%
	DC temperature coefficient[1]		≤ ±0.14%	≤ ±0.24%	≤ ±0.44%
 CMS-120DR	Resolution	(A)	–	–	0.01
	Sampling rate internal	(Hz)	–	–	5000
	Settling time (±1%)	(sec)	–	–	typ. 0.34
	Cable feed through	(mm)	–	–	9.5
	Insulation voltage		–	–	690 AC/1500 DC
	Operating/storage temperature	(°C)	–	–	-25 ... +70/-40 ... +85
 CMS-120CA	Standards		–	–	DIN EN 61010-1, UL508
	Overall dimensions				
	CMS-120PS series	(mm)	17.4 x 41.0 x 26.5	17.4 x 41.0 x 26.5	17.4 x 41.0 x 26.5
	CMS-120CA series	(mm)	17.4 x 41.0 x 29.0	17.4 x 41.0 x 29.0	17.4 x 41.0 x 29.0
	CMS-120DR series	(mm)	17.4 x 51.5 x 43.2	17.4 x 51.5 x 43.2	17.4 x 51.5 x 43.2

Closed core sensors 18 mm

Product	Type		CMS-100xx	CMS-101xx	CMS-102xx
 CMS-100PS	Measurement range	(A)	80	40	20
	Measurement values		TRMS, AC 50/60 Hz, DC	TRMS, AC 50/60 Hz, DC	TRMS, AC 50/60 Hz, DC
	Crest factor of distorted wave forms		≤1.5	≤3	≤6
	AC accuracy (TA = +25°C)[1]		≤ ±0.5%	≤ ±0.5%	≤ ±0.5%
	AC temperature coefficient[1]		≤ ±0.036%	≤ ±0.036%	≤ ±0.036%
 CMS-100S8	DC accuracy (TA = +25°C)[1]		≤ ±0.7%	≤ ±1.0%	≤ ±1.7%
	DC temperature coefficient[1]		≤ ±0.047%	≤ ±0.059%	≤ ±0.084%
	Resolution	(A)	0.01	0.01	0.01
	Sampling rate internal	(Hz)	5000	5000	5000
	Settling time (±1%)	(sec)	typ. 0.25	typ. 0.25	typ. 0.25
 CMS-100DR	Cable feed through	(mm)	10	10	10
	Insulation voltage	(V)	690 VAC/1500 VDC	690 VAC/1500 VDC	690 VAC/1500 VDC
	Operating temperature	(°C)	-25 ... +70	-25 ... +70	-25 ... +70
	Storage temperature	(°C)	-40 ... +85	-40 ... +85	-40 ... +85
	Standards		DIN EN 61010-1, UL508	DIN EN 61010-1, UL508	DIN EN 61010-1, UL508
 CMS-100CA	**Overall dimensions**				
	CMS-100PS series	(mm)	17.4 x 41.0 x 26.5	17.4 x 41.0 x 26.5	17.4 x 41.0 x 26.5
	CMS-100S8 series	(mm)	26.5 x 45.5 x 31.8	26.5 x 45.5 x 31.8	26.5 x 45.5 x 31.8
	CMS-100DR series	(mm)	17.4 x 51.5 x 43.2	17.4 x 51.5 x 43.2	17.4 x 51.5 x 43.2
	CMS-100CA series	(mm)	17.4 x 41.0 x 29.0	17.4 x 41.0 x 29.0	17.4 x 41.0 x 29.0

[1] of full range

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Circuit monitoring system (CMS)

Technical specifications

Closed core sensors 25 mm

Product	Type		CMS-200xx	CMS-201xx	CMS-202xx
 CMS-200S8	Measurement range	(A)	160	80	40
	Measurement values		TRMS, AC 50/60 Hz, DC	TRMS, AC 50/60 Hz, DC	TRMS, AC 50/60 Hz, DC
	Crest factor of distorted wave forms		≤1.5	≤3	≤6
	AC accuracy (TA = +25°C)[1]		≤ ±0.5%	≤ ±0.5%	≤ ±0.5%
	AC temperature coefficient[1]		≤ ±0.036%	≤ ±0.036%	≤ ±0.036%
	DC accuracy (TA = +25°C)[1]		≤ ±0.7%	≤ ±1.0%	≤ ±1.7%
	DC temperature coefficient[1]		≤ ±0.047%	≤ ±0.059%	≤ ±0.084%
 CMS-200DR	Resolution	(A)	0.01	0.01	0.01
	Sampling rate internal	(Hz)	5000	5000	5000
	Settling time (±1%)	(sec)	typ. 0.25	typ. 0.25	typ. 0.25
	Cable feed through	(mm)	15	15	15
	Insulation voltage	(V)	690 VAC/1500 VDC	690 VAC/1500 VDC	690 VAC/1500 VDC
	Operating temperature	(°C)	-25 ... +70	-25 ... +70	-25 ... +70
	Storage temperature	(°C)	-40 ... +85	-40 ... +85	-40 ... +85
 CMS-200CA	Standards		DIN EN 61010-1, UL508	DIN EN 61010-1, UL508	DIN EN 61010-1, UL508
	Overall dimensions				
	CMS-200S8 series	(mm)	26.5 x 43.0 x 38.5	26.5 x 43.0 x 38.5	26.5 x 43.0 x 38.5
	CMS-200DR series	(mm)	25.4 x 43.0 x 43.2	25.4 x 43.0 x 43.2	25.4 x 43.0 x 43.2
	CMS-200CA series	(mm)	25.4 x 43.0 x 35.7	25.4 x 43.0 x 35.7	25.4 x 43.0 x 35.7

[1] of full range

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CONTROL SECTION 11

Machine safety



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Section Updated 02/2026

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Safety relays

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Safety relays

Sentry ordering table 11-5

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Safety relays

Sentry safety relays





Sentry ordering table

Type	Voltage	Off Delay Timer 0.5s	Off Delay Timer 1.5s	Timer 0 – 999s	Safety Outputs 3NO + 1NC	Safety Outputs 4NO	Safety Outputs 4NO + 1NC	Safety Outputs 2NO + 2NO Del.	Expansion of safe outputs	Manual Reset	Two Hand Device	Safety Mats, Edges and Bumpers	Dual channel OSSD devices	Dual Channel with N)/NC contacts	Dual Channel with 2NC contacts	Single Channel	Ordering code (Screw Connector)	Ordering code (Spring Connector)
BSR10	24 V DC				•				•						[1]	•	2TLA010040R0000	2TLA010040R0001
BSR11	24 V DC					•			•						[1]	•	2TLA010040R0200	2TLA010040R0201
BSR23	24 V DC						•		•						•		2TLA010041R0600	2TLA010041R0601
SSR10	24 V DC				•				•	•			•		•	•	2TLA010050R0000	2TLA010050R0001
SSR20	24 V DC				•					•	•						2TLA010051R0000	2TLA010051R0001
SSR32	24 V DC	•						•		•			•		•	•	2TLA010052R0400	2TLA010052R0401
SSR42	24 V DC		•					•		•			•		•	•	2TLA010053R0400	2TLA010053R0401
SSR10M	[3]				•				•	•					•		2TLA010050R0100	2TLA010050R0101
SSR20M	[3]				•					•	•						2TLA010051R0100	2TLA010051R0101
TSR10	24 V DC			[2]	•				•				•		•	•	2TLA010060R0000	2TLA010060R0001
TSR20	24 V DC	•	•		•				•				•		•	•	2TLA010061R0000	2TLA010061R0001
TSR20M	[3]	•	•		•				•						•		2TLA010061R0100	2TLA010061R0101
USR10	24 V DC			[2]	•					•	•	•	•	•	•	•	2TLA010070R0000	2TLA010070R0001
USR22	24 V DC			[2]				•		•	•	•	•	•	•	•	2TLA010070R0400	2TLA010070R0401

[1] No monitoring of two-channel fault, i.e., max Category 3 without fault exclusion
[2] Off-delay, On-delay, Time bypass, or Time reset. Configurable model with display
[3] 85-265 V AC / 120-275 V DC

More information
Sentry manuals in ABB Library
Sentry Flyer
Sentry connection diagrams

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Safety programmable logic controllers

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Safety programmable logic controllers

Safety controllers and accessories





Pluto ordering table

Pluto is available in different models depending on the needs of your application.
Optional features include bus communication, high resolution analog inputs and current monitoring.

Type	Voltage	Safety Bus	Failsafe Outputs	Failsafe Inputs max	Analog Inputs (max)	Fast Counter Inputs (max)	Statusbus Inputs (max)	Non-Failsafe outputs (max)	Ordering code
Pluto S20 v2	24 V DC	No	4	16	1	-	4	8	2TLA020070R4700
Pluto S46 v2	24 V DC	No	6	40	3	-	4	16	2TLA020070R1800
Pluto B22	24 V DC	Yes	-	22	1	-	4	8	2TLA020070R4800
Pluto O2	24 V DC	Yes	2	4	-	-	2	2	2TLA020070R8500
Pluto A20 v2	24 V DC	Yes	4	16	1	-	4	8	2TLA020070R4500
Pluto B20 v2	24 V DC	Yes	4	16	1	-	4	8	2TLA020070R4600
Pluto D20	24 V DC	Yes	6	16	4 + 1	-	4	8	2TLA020070R6400
Pluto B46 v2	24 V DC	Yes	6	40	3	-	4	16	2TLA020070R1700
Pluto D45	24 V DC	Yes	6	39	8	4	4	15	2TLA020070R6600





IDFIX identifiers ordering table

IDFIX is an identification circuit that is connected to Pluto. It must be used when:
- several Plutos are connected to the Pluto Safety bus (IDFIX-R or IDFIX-RW)
- to get the possibility to replace a stand-alone Pluto with a new one without the need of a PC (IDFIX-PROG stores the Pluto program)

Type	Description	Ordering code
IDFIX-R	Pre-programmed unique identification number.	2TLA020070R2000
IDFIX-RW	Programmable identification number, i.e. the user can choose identification number	2TLA020070R2100
IDFIX-DATA	Programmable identification number and storage of AS-i safety codes.	2TLA020070R2300
IDFIX-PROG 2k5	Storage of the Pluto program, 2.5 Kbyte. Especially useful for stand-alone Pluto.	2TLA020070R2400
IDFIX-PROG 10k	Storage of the Pluto program, 10 Kbyte. Especially useful for stand-alone Pluto.	2TLA020070R2600



Pluto cables and connection accessories ordering table

Type	Description	Ordering code
Pluto cable serial	Pluto programming and on-line monitoring cable. For a PC serial port, 9-pole D-sub connector.	2TLA020070R5600
Pluto cable USB	Pluto programming and on-line monitoring cable. For a PC USB port.	2TLA020070R5800
Pluto cable HMI	Cable for connecting a HMI-panel to the Pluto programming port. Connector on HMI-side: 15-pole D-sub. On Pluto side: 90 degrees angled Modbus contact.	2TLA020070R5700
Pluto cable CP400	Cable for connecting HMI-panel ABB CP400 to Pluto programming port. Connector on HMI-side: 9-pole D-sub.	2TLA020070R2400
Pluto cable CP600	Cable for connecting HMI-panel ABB CP600 to Pluto programming port. Connector on HMI-side: 9-pole D-sub.	2TLA020070R2600
PCABLE-050	Bus cable for Pluto safety bus, 2 x 0.75 mm^2. 50-meter ring.	2TLA020070R6805
PCABLE-100	Bus cable for Pluto safety bus, 2 x 0.75 mm^2. 100-meter ring.	2TLA020070R6810
PCABLE-500	Bus cable for Pluto safety bus, 2 x 0.75 mm^2. 500-meter drum.	2TLA020070R6850

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Safety programmable logic controllers

Safety controllers and accessories



Other accessories ordering table

Type	Description	Ordering code
Smile 11 RB	Smile reset button for light button function with M12-5 connector.	2TLA030053R0100
FIXA	Handheld terminal for StatusBus. Used for e.g. addressing and test. Connection to PC via USB-micro cable	2TLA020072R2000
R120 Resistor	Terminating resistor for Pluto safety bus. Necessary for each stand-alone Pluto and on the Pluto units at each end of the Pluto safety bus. Should be removed from the other Pluto units.	2TLA020070R2200





Pluto gateways ordering table

With the use of a gateway, Pluto can communicate with other control systems and form a part of a larger network. The gateway models GATE-D2 and C2 can also be used as an extension of the safety bus cable to extend the Pluto network.

Type	Fieldbus	Ordering code
GATE-C2	CANopen	2TLA020071R8100
GATE-D2	DeviceNet	2TLA020071R8200
GATE-P2	PROFIBUS-DP	2TLA020071R8000
GATE-EC	EtherCAT	2TLA020071R9100
GATE-EIP	Ethernet/IP	2TLA020071R9000
GATE-MT	Modbus TCP	2TLA020071R9400
GATE-PN	PROFINET	2TLA020071R9300



Pluto safe encoders ordering table

The safe encoders can be used together with Pluto to safely determine the position of machine movements.

Type	Fieldbus	Ordering code
RSA 698 10mm solid	Multiturn encoder with solid 10mm shaft, M12 connectors	2TLA020070R3700

More information

Pluto Encoders
Pluto Gateways
Pluto Ethernet Gateways
Pluto hardware manual
Pluto programming manual
Pluto Flyer

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Safety controller

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Safety controller

Vital



Vital ordering table

Type	Voltage	DYNlink Circuits	DYNlink Devices (max)	Safe Outputs	Ordering code
Vital 1	24 V DC	1	30	2	2TLA020052R1000





DYNlink adapters for dual channel devices ordering table

Type	Description		Ordering code
Tina 2A	Mounted directly on the device enclosure to an M20 cable entry	Devices with positively driven force-guided contacts like E-stop buttons and key switches	2TLA020054R0100
Tina 2B	Placed inside the safety device enclosure		2TLA020054R1100
Tina 3A	Mounted directly on the device enclosure to an M20 cable entry		2TLA020054R0200
Tina 3Aps	Two circuits and with supply voltage for a safety sensor. Connects to an M20 cable entry.		2TLA020054R1400
Tina 7A	Mounted on a DIN rail in the electrical cabinet. Note that the connected safety device(s) must be mounted on the same cabinet.		2TLA020054R0700
Tina 10A v2	Adaptation of OSSD to DYNlink. M12-8 connector for OSSD and M12-5 for DYNlink.	Devices with OSSD outputs like Orion Light Curtains	2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink with possibility to connect a local reset button. M12-8 for OSSD and M12-5 for DYNlink and reset.		2TLA020054R1310
Tina 10C v2	Adaptation of OSSD to DYNlink with possibility to power the transmitter. M12-8 connector for OSSD and M12-5 for DYNlink and power.		2TLA020054R1610

Connection blocks for serial connection of DYNlink devices (or devices with Tina adapter) ordering table

Type	Description	Ordering code
Tina 4A	Connection block for serial connection of up to 4 DYNlink devices with M12-5 connectors.	2TLA020054R0300
Tina 8A	Connection block for serial connection of up to 8 DYNlink devices with M12-5 connectors	2TLA020054R0500
Tina 11A	Connection block for serial connection of 2 DYNlink devices with M12-5 connectors.	2TLA020054R1700
Tina 12A	Connection block for serial connection of 2 DYNlink devices with M12-8 connectors, e.g. Magne.	2TLA020054R1800

Blind plug to complete the serial connection on a connection block ordering table

All M12 connectors on Tina 4A or Tina 8A must be connected to a safety device or a Tina 1A. For example, if only 6 devices are connected to a Tina 8A, two Tina 1A are necessary.

Type	Description	Ordering code
Tina 1A	Tina 1A is a blind plug connected to the unused M12 connectors of the connection blocks Tina 4A and Tina 8A.	2TLA020054R0000

M12 Y-connectors ordering table

Type	Description	Ordering code
M12-3A	M12 Y-connector for series connection of DYNlink devices such as Eden, Smile, Inca and Tina.	2TLA020055R0000
M12-3B	M12 Y-connector for parallel connection of 2 DYNlink devices.	2TLA020055R0100
M12-3E	M12 Y-connector for the connection of 2 DYNlink devices or one DYNlink and one light button to Pluto safety PLC with only one cable.	2TLA020055R0200
M12-3S	M12 Y-connector for series connection of DYNlink devices with the StatusBus function.	2TLA020055R0600

More information

Vital Manual
Vital Flyer

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Safety light curtains

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Safety light curtains
Orion



Orion 1 Base Models ordering table

Type	Description	Ordering code
Orion 1-4-14-015-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 150mm	2TLA022300R0000
Orion 1-4-14-030-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 300mm	2TLA022300R0100
Orion 1-4-14-045-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 450mm	2TLA022300R0200
Orion 1-4-14-060-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 600mm	2TLA022300R0300
Orion 1-4-14-075-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 750mm	2TLA022300R0400
Orion 1-4-14-090-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 900mm	2TLA022300R0500
Orion 1-4-14-105-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1050mm	2TLA022300R0600
Orion 1-4-14-120-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1200mm	2TLA022300R0700
Orion 1-4-14-135-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1350mm	2TLA022300R0800
Orion 1-4-14-150-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1500mm	2TLA022300R0900
Orion 1-4-14-165-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1650mm	2TLA022300R1000
Orion 1-4-14-180-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1800mm	2TLA022300R1100
Orion 1-4-30-015-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 150mm	2TLA022302R0000
Orion 1-4-30-030-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 300mm	2TLA022302R0100
Orion 1-4-30-045-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 450mm	2TLA022302R0200
Orion 1-4-30-060-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 600mm	2TLA022302R0300
Orion 1-4-30-075-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 750mm	2TLA022302R0400
Orion 1-4-30-090-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 900mm	2TLA022302R0500
Orion 1-4-30-105-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1050mm	2TLA022302R0600
Orion 1-4-30-120-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1200mm	2TLA022302R0700
Orion 1-4-30-135-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1350mm	2TLA022302R0800
Orion 1-4-30-150-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1500mm	2TLA022302R0900
Orion 1-4-30-165-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1650mm	2TLA022302R1000
Orion 1-4-30-180-B	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1800mm	2TLA022302R1100

More information
Orion 1 Base flyer
Orion 1 Base - Product Manual
Orion connection diagrams



Spare Parts (included when ordering Orion) ordering table

Type	Description	Ordering code
JSM Orion01	4 standard brackets for Orion 1 & Orion 2	2TLA022310R0000

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Safety light curtains
Orion



Accessories ordering table

Type	Description	Ordering code
Orion TP-14	Orion Test Piece 14 mm	2TLA022310R5200
Orion TP-30	Orion Test Piece 30 mm	2TLA022310R5300
Orion Laser	Orion Laser pointer	2TLA022310R5000
JSM Orion03	4 rotation brackets for Orion 1 Base	2TLA022310R0100
JSM Orion06	Kit for mounting of Orion 1 & Orion 2 in Stand (4 pieces for lengths shorter than 1200 mm)	2TLA022310R0400
JSM Orion07	Kit for mounting of Orion 1 & Orion 2 in Stand (6 pieces for lengths of 1200 mm or more)	2TLA022310R0500
JSM Orion 10	Kit for mounting of Orion 1 Mirror on wall.	2TLA022310R0800
JSM Orion 11	Kit for mounting of Orion 1 Mirror in Stand	2TLA022310R0900
Orion Stand Plate	Orion Plate kit for adjustment of protective stand	2TLA022312R5000
Orion 1 Mirror*	Deviating mirror to be mounted in Orion Stand with one kit JSM Orion 11	See data sheet
Orion Stand*	Protective stand	See data sheet

More information
Orion Stand product sheet
Orion 1 Mirror product sheet
Orion Laser Original instructions
JSM Orion03 Original instructions

Connection Accessories ordering table

Type	Description	Ordering code
Smile 11 RA	Smile reset button with NO contact. Used with Sentry or Vital	2TLA030053R0000
Smile 11 RB	Smile reset button with NO contact for Pluto	2TLA030053R0100
Smile 11RO1	Smile reset button with NO contact for Orion 1 Base. Can be used with Tina 10B v2	2TLA022316R3000
M12-3A	Y-connector for series connection of DYNlink devices with M12-5 connectors, e.g. Eden	2TLA020055R0000
M12-3R	Y-connector for connection of a Smile reset button to Orion	2TLA022316R0000
M12-3D	Y-connector for easy connection of a transmitter	2TLA020055R0300
Tina 10A v2	Adaptation of OSSD to DYNlink. M12-8 connector for OSSD and M12-5 for DYNlink.	2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink with possibility to connect a local reset button. M12-8 connector for OSSD and M12-5 for DYNlink and reset.	2TLA020054R1310
Tina 10C v2	Adaptation of OSSD to DYNlink with possibility to power the transmitter. M12-8 connector for OSSD and M12-5 for DYNlink and transmitter.	2TLA020054R1610

Cables ordering table

Type	Description	Ordering code
M12-CTO1BA	Transfer cable, for use with Tina 10A and 10C, puts basic model light curtain in auto reset with no EDM	2TLA022315R3000
M12-CTO1BM	Transfer cable, for use with Tina 10B or M12-3R, for local reset button Smile 11RO1	2TLA022315R3100

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Safety light curtains

Orion



Orion 1 Extended Models ordering table

Type	Description	Ordering code
Orion 1-4-14-030-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 300mm, with muting and blanking	2TLA022301R0100
Orion 1-4-14-045-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 450mm, with muting and blanking	2TLA022301R0200
Orion 1-4-14-060-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 600mm, with muting and blanking	2TLA022301R0300
Orion 1-4-14-075-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 750mm, with muting and blanking	2TLA022301R0400
Orion 1-4-14-090-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 900mm, with muting and blanking	2TLA022301R0500
Orion 1-4-14-105-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1050mm, with muting and blanking	2TLA022301R0600
Orion 1-4-14-120-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1200mm, with muting and blanking	2TLA022301R0700
Orion 1-4-14-135-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1350mm, with muting and blanking	2TLA022301R0800
Orion 1-4-14-150-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1500mm, with muting and blanking	2TLA022301R0900
Orion 1-4-14-165-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1650mm, with muting and blanking	2TLA022301R1000
Orion 1-4-14-180-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 14mm resolution and 1800m, with muting and blanking	2TLA022301R1100
Orion 1-4-30-030-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 300mm, with muting and blanking	2TLA022303R0100
Orion 1-4-30-045-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 450mm, with muting and blanking	2TLA022303R0200
Orion 1-4-30-060-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 600mm, with muting and blanking	2TLA022303R0300
Orion 1-4-30-075-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 750mm, with muting and blanking	2TLA022303R0400
Orion 1-4-30-090-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 900mm, with muting and blanking	2TLA022303R0500
Orion 1-4-30-105-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1050mm, with muting and blanking	2TLA022303R0600
Orion 1-4-30-120-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1200mm, with muting and blanking	2TLA022303R0700
Orion 1-4-30-135-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1350mm, with muting and blanking	2TLA022303R0800
Orion 1-4-30-150-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1500mm, with muting and blanking	2TLA022303R0900
Orion 1-4-30-165-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1650mm, with muting and blanking	2TLA022303R1000
Orion 1-4-30-180-E	Light curtain (both transmitter and receiver) base model with built in reset and EDM, 30mm resolution and 1800mm, with muting and blanking	2TLA022303R1100

More information

Orion 1 Extended flyer
Orion 1 Extended - Product Manual
Orion connection diagrams

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Safety light curtains
Orion



Accessories ordering table

Type	Description	Ordering code
Orion TP-14	Orion Test Piece 14 mm	2TLA022310R5200
Orion TP-30	Orion Test Piece 30 mm	2TLA022310R5300
Orion Laser	Orion Laser pointer	2TLA022310R5000
JSM Orion06	Kit for mounting of Orion 1 & Orion 2 in Stand (4 pieces for lengths shorter than 1200 mm)	2TLA022310R0400
JSM Orion07	Kit for mounting of Orion 1 & Orion 2 in Stand (6 pieces for lengths of 1200 mm or more)	2TLA022310R0500
JSM Orion 10	Kit for mounting of Orion 1 Mirror on wall.	2TLA022310R0800
JSM Orion 11	Kit for mounting of Orion 1 Mirror in Stand	2TLA022310R0900
Orion Stand Plate	Orion Plate kit for adjustment of protective stand	2TLA022312R5000
Orion 1 Mirror*	Deviating mirror to be mounted in Orion Stand with one kit JSM Orion 11	See data sheet
Orion Stand*	Protective stand	See data sheet

More information
Orion Stand product sheet
Orion 1 Mirror product sheet
Orion Laser Original instructions



Accessories ordering table

Type	Description	Ordering code
Smile 11 RA	Smile reset button with NO contact. Used with Sentry or Vital	2TLA030053R0000
Smile 11 RB	Smile reset button with NO contact for Pluto	2TLA030053R0100
OMC1	Connection box for two or four muting sensors	2TLA022316R2000
Mute R2	Retroreflective photoelectric sensor	2TLA022044R0500
JSM64	Adjustable mounting bracket for M18 sensors (e.g. Mute R2)	2TLA040007R0200
JSM66	Fixed mounting bracket for Reflect 1 and 2 (2,5 mm RF A2 painted black)	2TLA022090R1300
Reflect 1	Reflector diameter 63 mm.	2TLA022044R2000
Reflect 2	Reflector diameter 82 mm	2TLA022044R3000

More information
OMC1 Muting box product sheet
Mute R2 Manual



Special Cables for Orion 1 Extended ordering table

Type	Description	Ordering code
M12-C02PT2T	Transmitter cable for Orion 1 Extended. M12-5 male connector.	2TLA022315R0100
M12-C02PT6RB	Receiver cable for Orion 1 Extended when no muting. M12-12 male connector.	2TLA022315R0200
M12-C02PT62RM	Receiver cable for Orion 1 Extended when muting. M12-5 male connector (for muting sensors) and M12-12 male connector.	2TLA022315R0300
PT-C1PT	Cascade cable for Orion 1 Extended	2TLA022315R1000
PT-C05PT	Cascade cable for Orion 1 Extended	2TLA022315R1100
PT-C005PT	Cascade cable for Orion 1 Extended	2TLA022315R1200



Orion 2 Base Models ordering table

Type	Description	Ordering code
Orion 2-4-K2-050-B	Light grid (both transmitter and receiver) base model with built in reset and EDM, 2 beams with 500mm beam spacing. 500mm height	2TLA022304R0000
Orion 2-4-K3-080-B	Light grid (both transmitter and receiver) base model with built in reset and EDM, 3 beams with 400mm beam spacing. 800mm height	2TLA022304R0100
Orion 2-4-K4-090-B	Light grid (both transmitter and receiver) base model with built in reset and EDM, 4 beams with 300mm beam spacing. 900mm height	2TLA022304R0200
Orion 2-4-K4-120-B	Light grid (both transmitter and receiver) base model with built in reset and EDM, 4 beams with 400mm beam spacing. 1200mm height	2TLA022304R0300

More information
Orion 2 Base flyer
Orion 2 Base - Product Manual
Orion connection diagrams

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Safety light curtains
Orion



Spare Parts (included when ordering Orion) ordering table

Type	Description	Ordering code
JSM Orion01	4 standard brackets for Orion 1 & Orion 2	2TLA022310R0000



Accessories ordering table

Type	Description	Ordering code
Orion Laser	Orion Laser pointer	2TLA022310R5000
JSM Orion04	4 rotation brackets for Orion 2	2TLA022310R0200
JSM Orion06	Kit for mounting of Orion 1 & Orion 2 in Stand (4 pieces for lengths shorter than 1200 mm)	2TLA022310R0400
JSM Orion07	Kit for mounting of Orion 1 & Orion 2 in Stand (6 pieces for lengths of 1200 mm or more)	2TLA022310R0500
Orion Stand Plate	Orion Plate kit for adjustment of protective stand	2TLA022312R5000
Orion 1 Mirror*	Deviating mirror to be mounted in Orion Stand with one kit JSM Orion 11	See data sheet
Orion Stand*	Protective stand	See data sheet

More information
Orion Stand product sheet
Orion Mirror Kxxx product sheet
Orion Laser Original instructions



Accessories ordering table

Type	Description	Ordering code
Smile 11 RA	Smile reset button with NO contact. Used with Sentry or Vital	2TLA030053R0000
Smile 11 RB	Smile reset button with NO contact for Pluto	2TLA030053R0100
Smile 11RO2	Smile reset button with NC contacts for Orion 2 Base/Extended and Orion 3 Extended.	2TLA022316R0000
M12-3A	Y-connector for series connection of DYNlink devices with M12-5 connectors, e.g. Eden	2TLA020055R0000
M12-3R	Y-connector for connection of a Smile reset button to Orion	2TLA022316R0000
M12-3D	Y-connector for easy connection of a transmitter	2TLA020055R0300
Tina 10A v2	Adaptation of OSSD to DYNlink. M12-8 connector for OSSD and M12-5 for DYNlink.	2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink with possibility to connect a local reset button. M12-8 connector for OSSD and M12-5 for DYNlink and reset.	2TLA020054R1310
Tina 10C v2	Adaptation of OSSD to DYNlink with possibility to power the transmitter. M12-8 connector for OSSD and M12-5 for DYNlink and transmitter.	2TLA020054R1610



Orion 2 Extended Models ordering table

Type	Description	Ordering code
Orion 2-4-K2-050-E	Light grid (both transmitter and receiver) base model with built in reset and EDM, 2 beams with 500mm beam spacing. 500mm height, built in muting.	2TLA022305R0000
Orion 2-4-K3-080-E	Light grid (both transmitter and receiver) base model with built in reset and EDM, 3 beams with 400mm beam spacing. 800mm height, built in muting.	2TLA022305R0100
Orion 2-4-K4-090-E	Light grid (both transmitter and receiver) base model with built in reset and EDM, 4 beams with 300mm beam spacing. 900mm height, built in muting.	2TLA022305R0200
Orion 2-4-K4-120-E	Light grid (both transmitter and receiver) base model with built in reset and EDM, 4 beams with 400mm beam spacing. 1200mm height, built in muting.	2TLA022305R0300

More information
Orion 2 Extended flyer
Orion 2 Extended - Product Manual
Orion connection diagrams

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Safety light curtains

Orion



Spare Parts (included when ordering Orion) ordering table

Type	Description	Ordering code
JSM Orion01	4 standard brackets for Orion 1 & Orion 2	2TLA022310R0000

Cables ordering table

Type	Description	Ordering code
M12-CYMUTE	Used for simplifying connection of 2 or 4 muting sensors with the help of the OMC1 connection box.	2TLA022315R3000



Accessories ordering table

Type	Description	Ordering code
Orion Laser	Orion Laser pointer	2TLA022310R5000
JSM Orion04	4 rotation brackets for Orion 2	2TLA022310R0200
JSM Orion06	Kit for mounting of Orion 1 & Orion 2 in Stand (4 pieces for lengths shorter than 1200 mm)	2TLA022310R0400
JSM Orion07	Kit for mounting of Orion 1 & Orion 2 in Stand (6 pieces for lengths of 1200 mm or more)	2TLA022310R0500
Orion Stand Plate	Orion Plate kit for adjustment of protective stand	2TLA022312R5000
Orion 1 Mirror*	Deviating mirror to be mounted in Orion Stand with one kit JSM Orion 11	See data sheet
Orion Stand*	Protective stand	See data sheet

More information
Orion Stand product sheet
Orion Mirror Kxxx product sheet
Orion Laser Original instructions





Accessories ordering table

Type	Description	Ordering code
OMC1	Connection box for two or four muting sensors	2TLA022316R2000
Mute R2	Retroreflective photoelectric sensor	2TLA022044R0500
JSM64	Adjustable mounting bracket for M18 sensors (e.g. Mute R2)	2TLA040007R0200
JSM66	Fixed mounting bracket for Reflect 1 and 2 (2,5 mm RF A2 painted black)	2TLA022090R1300
Reflect 1	Reflector diameter 63 mm.	2TLA022044R2000
Reflect 2	Reflector diameter 82 mm	2TLA022044R3000
Smile 11 RA	Smile reset button with NO contact. Used with Sentry or Vital	2TLA030053R0000
Smile 11 RB	Smile reset button with NO contact for Pluto	2TLA030053R0100
Smile 11RO2	Smile reset button with NC contacts for Orion 2 Base/Extended and Orion 3 Extended.	2TLA022316R0000
M12-3A	Y-connector for series connection of DYNlink devices with M12-5 connectors, e.g. Eden	2TLA020055R0000
M12-3R	Y-connector for connection of a Smile reset button to Orion	2TLA022316R0000
M12-3D	Y-connector for easy connection of a transmitter	2TLA020055R0300
Tina 10A v2	Adaptation of OSSD to DYNlink. M12-8 connector for OSSD and M12-5 for DYNlink.	2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink with possibility to connect a local reset button. M12-8 connector for OSSD and M12-5 for DYNlink and reset.	2TLA020054R1310
Tina 10C v2	Adaptation of OSSD to DYNlink with possibility to power the transmitter. M12-8 connector for OSSD and M12-5 for DYNlink and transmitter.	2TLA020054R1610

More information
OMC1 Muting box product sheet
Mute R2 Manual

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Safety sensors, switches and locks

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Safety sensors, switches and locks

Eden



Adam ordering table

Type	Description	Ordering code
Adam DYN Info	M12-5 for single & series applications, for use in DYNlink circuits	2TLA020051R5100
Adam DYN Status	M12-5, StatusBus for use in DYNlink circuits (Use on Pluto Only)	2TLA020051R5200
Adam C DYN Info	M12-5 for single & series applications, for use in DYNlink circuits, with coated electronics.	2TLA020051R5101
Adam OSSD Into 5	M12-5 for single sensor applications, for use with Safety Relays.	2TLA020051R5400
Adam C OSSD Info 5	M12-5 for single sensor applications, for use with Safety Relays, with coated electronics.	2TLA020051R5401
Adam OSSD Info 8	M12-8 for single & series applications, for use with Safety Relays.	2TLA020051R5700
Adam C OSSD Info 8	M12-8 for single & series applications, for use with Safety Relays, with coated electronics.	2TLA020051R5701



Eva ordering table

Type	Description	Ordering code
Eva General Code	General coded (All coded the same code), for low level coding.	2TLA020046R0800
Eva C General Code	General coded (All coded the same code), for low level coding, with coated electronics.	2TLA020046R0801
Eva Unique Code	Uniquely coded for high level coding.	2TLA020046R0900
Eva C Unique Code	Uniquely coded for high level coding, with coated electronics.	2TLA020046R0901



Accessories ordering table

Type	Description	Ordering code
DA3A	Mounting converting plate from Eden E to Eden OSSD or Eden DYN	2TLA020053R0600
JSM D20	Sliding lock for Eden on conventional doors. (Eden is not included.)	2TLA020302R1000
M12 Safety Seal	Heat shrinking tubes for M12 connectors	2TLA020053R0800
FIXA	Programmer for ASI, Statusbus, Factory default of Adam sensors.	2TLA020072R2000
DA1B	Distance plate in yellow PBT (4 pcs). These are included with main product on delivery	2TLA020053R0700
DA2B	Black distance rings to be mounted in Adam and Eva mounting holes (4 pcs). hese are included with main product on delivery	2TLA020053R0300

More information

Eden flyer
Eden OSSD product manual
Eden DYN - Product Manual

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Safety sensors, switches and locks

Sense



Sense 1 ordering table

Type	Description	Ordering code
Sense 1	Sense 1, 2m cable, Rt, 2NC/1NO, LED, polyester body.	2TLA050050R4108
Sense 1	Sense 1, 5m cable, Rt, 2NC/1NO, LED, polyester body.	2TLA050050R5108
Sense 1	Sense 1, 10m cable, Rt, 2NC/1NO, LED, polyester body.	2TLA050050R6108
Sense 1	Sense 1, QC cable, Rt, 2NC/1NO, LED, polyester body.	2TLA050050R2108
Sense 1	Sense 1, 2m cable, Lt, 2NC/1NO, LED, polyester body.	2TLA050050R4107
Sense 1	Sense 1, 5m cable, Lt, 2NC/1NO, LED, polyester body.	2TLA050050R5107
Sense 1	Sense 1, 10m cable, Lt, 2NC/1NO, LED, polyester body.	2TLA050050R6107
Sense 1	Sense 1, QC cable, Lt, 2NC/1NO, LED, polyester body.	2TLA050050R2107
Sense 1	Sense 1 Spare Actuator, polyester body.	2TLA050040R0205

More information
Sense 1 data sheet



Sense 2 ordering table

Type	Description	Ordering code
Sense 2	Sense 2, 2m cable, Rt, 2NC/1NO, polyester body.	2TLA050070R4108
Sense 2	Sense 2, 5m cable, Rt, 2NC/1NO, polyester body.	2TLA050070R5108
Sense 2	Sense 2, 10m cable, Rt, 2NC/1NO, polyester body.	2TLA050070R6108
Sense 2	Sense 2, QC cable, Rt, 2NC/1NO, polyester body.	2TLA050070R2108
Sense 2	Sense 2, 2m cable, Lt, 2NC/1NO, polyester body.	2TLA050070R4107
Sense 2	Sense 2, 5m cable, Lt, 2NC/1NO, polyester body.	2TLA050070R5107
Sense 2	Sense 2, 10m cable, Lt, 2NC/1NO, polyester body.	2TLA050070R6107
Sense 2	Sense 2, QC cable, Lt, 2NC/1NO, polyester body.	2TLA050070R2107
Sense 2	Sense 2, M8 QC, Rt, 2NC, polyester body.	2TLA050070R3108
Sense 2	Sense 2, M8 QC, Lt, 2NC, polyester body.	2TLA050070R3107
Sense 2	Sense 2 Spare Actuator, polyester body.	2TLA050040R0217

More information
Sense 2 data sheet



Sense 3 ordering table

Type	Description	Ordering code
Sense 3	Sense 3, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050052R4100
Sense 3	Sense 3, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050052R5100
Sense 3	Sense 3, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050052R6100
Sense 3	Sense 3, QC cable, 2NC/1NO, LED, polyester body.	2TLA050052R2100
Sense 3	Sense 3 Spare Actuator, polyester body.	2TLA050040R0206

More information
Sense 3 data sheet



Sense 3Z ordering table

Type	Description	Ordering code
Sense 3Z	Sense 3Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R4120
Sense 3Z	Sense 3Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R5120
Sense 3Z	Sense 3Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R6120
Sense 3Z	Sense 3Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R2120
Sense 3Z	Sense 3Z Spare Actuator, stainless steel body.	2TLA050040R0207

More information
Sense 3Z data sheet

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Safety sensors, switches and locks

Sense



Sense 3Z Food ordering table

Type	Description	Ordering code
Sense 3Z Food	Sense 3Z Food, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R4150
Sense 3Z Food	Sense 3Z Food, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R5150
Sense 3Z Food	Sense 3Z Food, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R6150
Sense 3Z Food	Sense 3Z Food, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050052R2150
Sense 3Z Food	Sense 3Z Food Spare Actuator, stainless steel body.	2TLA050040R0208

More information
Sense 3Z Food data sheet



Sense 4 ordering table

Type	Description	Ordering code
Sense 4	Sense 4, 2m cable, Rt, 2NC/1NO, polyester body.	2TLA050072R4100
Sense 4	Sense 4, 5m cable, Rt, 2NC/1NO, polyester body.	2TLA050072R5100
Sense 4	Sense 4, 10m cable, Rt, 2NC/1NO, polyester body.	2TLA050072R6100
Sense 4	Sense 4, QC cable, Rt, 2NC/1NO, polyester body.	2TLA050072R2100

More information
Sense 4 data sheet



Sense 4Z ordering table

Type	Description	Ordering code
Sense 4Z	Sense 4Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R4120
Sense 4Z	Sense 4Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R5120
Sense 4Z	Sense 4Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R6120
Sense 4Z	Sense 4Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R2120
Sense 4Z	Sense 4Z Spare Actuator, stainless steel body.	2TLA050040R0231

More information
Sense 4Z data sheet



Sense 4Z Food ordering table

Type	Description	Ordering code
Sense 4Z Food	Sense 4Z Food, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R4150
Sense 4Z Food	Sense 4Z Food, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R5150
Sense 4Z Food	Sense 4Z Food, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R6150
Sense 4Z Food	Sense 4Z Food, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050072R2150

More information
Sense 4Z Food data sheet



Sense 5 ordering table

Type	Description	Ordering code
Sense 5	Sense 5, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050054R4100
Sense 5	Sense 5, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050054R5100
Sense 5	Sense 5, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050054R6100
Sense 5	Sense 5, QC cable, 2NC/1NO, LED, polyester body.	2TLA050054R2100
Sense 5	Sense 5 Spare Actuator, polyester body.	2TLA050040R0209

More information
Sense 5 data sheet

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Safety sensors, switches and locks

Sense



Sense 5Z ordering table

Type	Description	Ordering code
Sense 5Z	Sense 5Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050054R4120
Sense 5Z	Sense 5Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050054R5120
Sense 5Z	Sense 5Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050054R6120
Sense 5Z	Sense 5Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050054R2120
Sense 5Z	Sense 5Z Spare Actuator, stainless steel body.	2TLA050040R0210

More information
Sense 5Z data sheet



Sense 6 ordering table

Type	Description	Ordering code
Sense 6	Sense 6, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050074R4100
Sense 6	Sense 6, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050074R5100
Sense 6	Sense 6, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050074R6100
Sense 6	Sense 6, QC cable, 2NC/1NO, LED, polyester body.	2TLA050074R2100
Sense 6	Sense 6 Spare Actuator, polyester body.	2TLA050040R0233

More information
Sense 6 data sheet



Sense 6Z ordering table

Type	Description	Ordering code
Sense 6Z	Sense 6Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050074R4120
Sense 6Z	Sense 6Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050074R5120
Sense 6Z	Sense 6Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050074R6120
Sense 6Z	Sense 6Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050074R2120

More information
Sense 6Z data sheet



Sense 7 ordering table

Type	Description	Ordering code
Sense 7	Sense 7, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050056R4100
Sense 7	Sense 7, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050056R5100
Sense 7	Sense 7, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050056R6100
Sense 7	Sense 7, QC cable, 2NC/1NO, LED, polyester body.	2TLA050056R2100
Sense 7	Sense 7 Spare Actuator, polyester body.	2TLA050040R0211

More information
Sense 7 data sheet



Sense 7Z ordering table

Type	Description	Ordering code
Sense 7Z	Sense 7Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050056R4120
Sense 7Z	Sense 7Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050056R5120
Sense 7Z	Sense 7Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050056R6120
Sense 7Z	Sense 7Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050056R2120
Sense 7Z	Sense 7Z Spare Actuator, stainless steel body.	2TLA050040R0212

More information
Sense 7Z data sheet

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Safety sensors, switches and locks

Sense



Sense 8 ordering table

Type	Description	Ordering code
Sense 8	Sense 8, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050076R4100
Sense 8	Sense 8, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050076R5100
Sense 8	Sense 8, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050076R6100
Sense 8	Sense 8, QC cable, 2NC/1NO, LED, polyester body.	2TLA050076R2100
Sense 8	Sense 8 Spare Actuator, polyester body.	2TLA050040R0235

More information
Sense 8 data sheet



Sense 8Z ordering table

Type	Description	Ordering code
Sense 8Z	Sense 8Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050076R4120
Sense 8Z	Sense 8Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050076R5120
Sense 8Z	Sense 8Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050076R6120
Sense 8Z	Sense 8Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050076R2120

More information
Sense 8Z data sheet



Sense 9 ordering table

Type	Description	Ordering code
Sense 9	Sense 9, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050058R4100
Sense 9	Sense 9, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050058R5100
Sense 9	Sense 9, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050058R6100
Sense 9	Sense 9, QC cable, 2NC/1NO, LED, polyester body.	2TLA050058R2100
Sense 9	Sense 9 Spare Actuator, polyester body.	2TLA050040R0213

More information
Sense 9 data sheet



Sense 9Z ordering table

Type	Description	Ordering code
Sense 9Z	Sense 9Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R4120
Sense 9Z	Sense 9Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R5120
Sense 9Z	Sense 9Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R6120
Sense 9Z	Sense 9Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R2120
Sense 9Z	Sense 9Z Spare Actuator, stainless steel body.	2TLA050040R0214

More information
Sense 9Z data sheet



Sense 9Z Food ordering table

Type	Description	Ordering code
Sense 9Z Food	Sense 9Z Food, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R4150
Sense 9Z Food	Sense 9Z Food, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R5150
Sense 9Z Food	Sense 9Z Food, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R6150
Sense 9Z Food	Sense 9Z Food, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050058R2150

More information
Sense 9Z Food data sheet

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Safety sensors, switches and locks

Sense



Sense 10 ordering table

Type	Description	Ordering code
Sense 10	Sense 10, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050078R4100
Sense 10	Sense 10, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050078R5100
Sense 10	Sense 10, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050078R6100
Sense 10	Sense 10, QC cable, 2NC/1NO, LED, polyester body.	2TLA050078R2100
Sense 10	Sense 10 Spare Actuator, polyester body.	2TLA050040R0237

More information
Sense 10 data sheet



Sense 10Z ordering table

Type	Description	Ordering code
Sense 10Z	Sense 10Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R4120
Sense 10Z	Sense 10Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R5120
Sense 10Z	Sense 10Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R6120
Sense 10Z	Sense 10Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R2120

More information
Sense 10Z data sheet



Sense 10Z Food ordering table

Type	Description	Ordering code
Sense 10Z Food	Sense 10Z Food, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R4150
Sense 10Z Food	Sense 10Z Food, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R5150
Sense 10Z Food	Sense 10Z Food, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R6150
Sense 10Z Food	Sense 10Z Food, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050078R2150

More information
Sense 10Z Food data sheet



Sense 11 ordering table

Type	Description	Ordering code
Sense 11	Sense 11, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050060R4100
Sense 11	Sense 11, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050060R5100
Sense 11	Sense 11, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050060R6100
Sense 11	Sense 11, QC cable, 2NC/1NO, LED, polyester body.	2TLA050060R2100
Sense 11	Sense 11 Spare Actuator, polyester body.	2TLA050040R0215

More information
Sense 11 data sheet



Sense 11Z ordering table

Type	Description	Ordering code
Sense 11Z	Sense 11Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050060R4120
Sense 11Z	Sense 11Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050060R5120
Sense 11Z	Sense 11Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050060R6120
Sense 11Z	Sense 11Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050060R2120
Sense 11Z	Sense 11Z Spare Actuator, stainless steel body.	2TLA050040R0216

More information
Sense 11Z data sheet

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Safety sensors, switches and locks

Sense



Sense 12 ordering table

Type	Description	Ordering code
Sense 12	Sense 11, 2m cable, 2NC/1NO, LED, polyester body.	2TLA050080R4100
Sense 12	Sense 11, 5m cable, 2NC/1NO, LED, polyester body.	2TLA050080R5100
Sense 12	Sense 11, 10m cable, 2NC/1NO, LED, polyester body.	2TLA050080R6100
Sense 12	Sense 11, QC cable, 2NC/1NO, LED, polyester body.	2TLA050080R2100

More information
Sense 12 data sheet



Sense 12Z ordering table

Type	Description	Ordering code
Sense 12Z	Sense 12Z, 2m cable, 2NC/1NO, LED, stainless steel body.	2TLA050080R4120
Sense 12Z	Sense 12Z, 5m cable, 2NC/1NO, LED, stainless steel body.	2TLA050080R5120
Sense 12Z	Sense 12Z, 10m cable, 2NC/1NO, LED, stainless steel body.	2TLA050080R6120
Sense 12Z	Sense 12Z, QC cable, 2NC/1NO, LED, stainless steel body.	2TLA050080R2120

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Sense 12Z data sheet

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Safety sensors, switches and locks

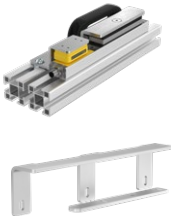
Magne

Ordering details
For a complete Magne lock both door part and frame parts are necessary.
Magne 4 also requires a separate Eva sensor.



Magne ordering table

Type	Description	Ordering code
Magne 3X	Magne 3X, No Safety Sensor, 5 pin M12 Connector.	2TLA042022R2700
Magne 4X DYN	Magne 4 with Adam DYNlink, 5 Pin M12 Connector.	2TLA042022R3000
Magne 4 DYN-Info	Magne 4 with Adam DYNlink, 8 Pin M12 Connector.	2TLA042022R3400
Magne 4 DYN Info 2	Magne 4 with Eden DYNlink, 8 Pin M12 Connector, separate lock and closed outputs.	2TLA042022R3410
Magne 4 OSSD-Info	Magne 4 with Adam OSSD, 8 Pin M12 Connector.	2TLA042022R4600



Accessories ordering table

Type	Description	Ordering code
JSM D28	Aluminum profile for door handle that completely covers a Magne unit when the door is closed. For conventional door (5–15 mm door gap).	2TLA042023R0100
JSM D21C	Mounting kit for Magne. For conventional door (5 -15 mm door gap).	2TLA042023R0510
JSM D23C	Mounting kit for Magne. For sliding doors.	2TLA042023R0210
JSM D24	Mounting kit for Eva. For conventional doors.	2TLA042023R0300
JSM D27	Door handle for JSM D21C.	2TLA042023R1000
Tina 12A	Connection block for serial connection of two Magne (M12-8).	2TLA020054R1800
Magne rubber 1B	Cellular rubber, 10 mm thick. Spare part for Magne Anchor plate.	2TLA042023R3610



Anchor Plate ordering table

Type	Description	Ordering code
Magne Anchor 32D	Anchor plate without permanent magnet. Delivered with Magne rubber.	2TLA042023R0410
Magne Anchor 32E	Anchor plate with permanent magnet. Delivered with Magne rubber.	2TLA042023R0420

Eva for Magne 4 models ordering table

Type	Description	Ordering code
Eva General Code	General coded (All coded the same code), for low level coding.	2TLA020046R0800
Eva Unique Code	Uniquely coded for high level coding.	2TLA020046R0900

More information
Magne flyer
Magne 3 and 4 - Product Manual

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Safety sensors, switches and locks

MKEY



MKEY 1 ordering table

Type	Description	Ordering code
MKEY1	MKEY 1, ½ NPT, 2NC/1NO, Angle Key, polyester body and head.	2TLA050021R1100
MKEY1	MKEY 1, ½ NPT, 2NC/1NO, Flat Key, polyester body and head.	2TLA050021R1200
MKEY1	MKEY 1, ½ NPT, 2NC/1NO, Flex Key, 2NC/1NO	2TLA050021R1300
MKEY1	Flex Key, stainless steel	2TLA050040R0223
MKEY1	Flat Key, stainless steel	2TLA050040R0222
MKEY1	Angled Key, stainless steel	2TLA050040R0200

More information
MKEY 1 data sheet



MKEY 2 ordering table

Type	Description	Ordering code
MKEY2	MKEY 2, ½ NPT, 2NC/1NO, Leaf Actuator, polyester body, stainless steel actuator.	2TLA050020R1000

More information
MKEY 2 data sheet



MKEY 4(+) ordering table

Type	Description	Ordering code
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, No Key, polyester body and head.	2TLA050001R1000
MKEY 4	MKEY 4 ½ NPT, 2NC/1NO, Standard Key, polyester body and head.	2TLA050001R1100
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Flat Key, polyester body and head.	2TLA050001R1200
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and head.	2TLA050001R1300
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and head.	2TLA050001R1400
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and head.	2TLA050001R1500
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and head.	2TLA050001R1001
MKEY 4+	MKEY 4+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and head.	2TLA050001R1101
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and head.	2TLA050001R1201
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and head.	2TLA050001R1301
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and head.	2TLA050001R1401
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and head.	2TLA050001R1501
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, No Key, polyester body and stainless-steel head.	2TLA050001R1010
MKEY 4	MKEY 4 ½ NPT, 2NC/1NO, Standard Key, polyester body and stainless-steel head.	2TLA050001R1110
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Flat Key, polyester body and stainless-steel head.	2TLA050001R1210
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and stainless-steel head.	2TLA050001R1310
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and stainless-steel head.	2TLA050001R1410
MKEY 4	MKEY 4, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and stainless-steel head.	2TLA050001R1510
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and stainless-steel head.	2TLA050001R1011
MKEY 4+	MKEY 4+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and stainless-steel head.	2TLA050001R1111
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and stainless-steel head.	2TLA050001R1211
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and stainless-steel head.	2TLA050001R1311
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and stainless-steel head.	2TLA050001R1411
MKEY 4+	MKEY 4+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and stainless-steel head.	2TLA050001R1511
MKEY 4	Standard Key, stainless steel	2TLA050040R0202
MKEY 4	Flex Key with metal housing, stainless steel	2TLA050040R0203
MKEY 4	Flex Key with stainless steel housing, stainless steel	2TLA050040R0204
MKEY 4	Flat Key, stainless steel	2TLA050040R0220
MKEY 4	½ NPT Cable Gland, stainless steel	2TLA050040R0001

More information
MKEY 4 data sheet

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Safety sensors, switches and locks

MKEY





MKEY 5(+) ordering table

Type	Description	Ordering code
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, No Key, polyester body and head.	2TLA050003R1000
MKEY 5	MKEY 5 ½ NPT, 2NC/1NO, Standard Key, polyester body and head.	2TLA050003R1100
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Flat Key, polyester body and head.	2TLA050003R1200
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and head.	2TLA050003R1300
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and head.	2TLA050003R1400
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and head.	2TLA050003R1500
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and head.	2TLA050003R1001
MKEY 5+	MKEY 5+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and head.	2TLA050003R1101
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and head.	2TLA050003R1201
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and head.	2TLA050003R1301
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and head.	2TLA050003R1401
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and head.	2TLA050003R1501
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, No Key, polyester body and stainless-steel head.	2TLA050003R1010
MKEY 5	MKEY 5 ½ NPT, 2NC/1NO, Standard Key, polyester body and stainless-steel head.	2TLA050003R1110
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Flat Key, polyester body and stainless-steel head.	2TLA050003R1210
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and stainless-steel head.	2TLA050003R1310
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and stainless-steel head.	2TLA050003R1410
MKEY 5	MKEY 5, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and stainless-steel head.	2TLA050003R1510
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and stainless-steel head.	2TLA050003R1011
MKEY 5+	MKEY 5+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and stainless-steel head.	2TLA050003R1111
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and stainless-steel head.	2TLA050003R1211
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and stainless-steel head.	2TLA050003R1311
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and stainless-steel head.	2TLA050003R1411
MKEY 5+	MKEY 5+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and stainless-steel head.	2TLA050003R1511
MKEY 5	Standard Key, stainless steel	2TLA050040R0202
MKEY 5	Flex Key with metal housing, stainless steel	2TLA050040R0203
MKEY 5	Flex Key with stainless steel housing, stainless steel	2TLA050040R0204
MKEY 5	Flat Key, stainless steel	2TLA050040R0220
MKEY 5	½ NPT Cable Gland, stainless steel	2TLA050040R0001

More information
MKEY 5 data sheet



MKEY 5Z(+) ordering table

Type	Description	Ordering code
MKEY 5Z	MKEY 5Z, ½ NPT, 2NC/1NO, No Key, stainless-steel body and head.	2TLA050003R1020
MKEY 5Z	MKEY 5Z ½ NPT, 2NC/1NO, Standard Key, stainless-steel body and head.	2TLA050003R1120
MKEY 5Z	MKEY 5Z, ½ NPT, 2NC/1NO, Flat Key, stainless-steel body and head.	2TLA050003R1220
MKEY 5Z	MKEY 5Z, ½ NPT, 2NC/1NO, Plastic Flex Key, stainless-steel body and head.	2TLA050003R1320
MKEY 5Z	MKEY 5Z, ½ NPT, 2NC/1NO, Metal Flex Key, stainless-steel body and head.	2TLA050003R1420
MKEY 5Z	MKEY 5Z, ½ NPT, 2NC/1NO, SS Flex Key, stainless-steel body and head.	2TLA050003R1520
MKEY 5Z+	MKEY 5Z+, ½ NPT, 2NC/1NO, No Key, 40N, stainless-steel body and head.	2TLA050003R1021
MKEY 5Z+	MKEY 5Z+ ½ NPT, 2NC/1NO, Standard Key, 40N, stainless-steel body and head.	2TLA050003R1121
MKEY 5Z+	MKEY 5Z+, ½ NPT, 2NC/1NO, Flat Key, 40N, stainless-steel body and head.	2TLA050003R1221
MKEY 5Z+	MKEY 5Z+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, stainless-steel body and head.	2TLA050003R1321
MKEY 5Z+	MKEY 5Z+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, stainless-steel body and head.	2TLA050003R1421
MKEY 5Z+	MKEY 5Z+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, stainless-steel body and head.	2TLA050003R1521
MKEY 5Z	Standard Key, stainless steel	2TLA050040R0202
MKEY 5Z	Flex Key with metal housing, stainless steel	2TLA050040R0203
MKEY 5Z	Flex Key with stainless steel housing, stainless steel	2TLA050040R0204
MKEY 5Z	Flat Key, stainless steel	2TLA050040R0220
MKEY 5Z	½ NPT Cable Gland, stainless steel	2TLA050040R0001

More information
MKEY 5Z data sheet

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Safety sensors, switches and locks

MKEY





MKEY 6(+) ordering table

Type	Description	Ordering code
MKEY 6	MKEY 6 ½ NPT, 2NC/1NO, No Key, polyester body and head.	2TLA050005R1030
MKEY 6	MKEY 6 ½ NPT, 2NC/1NO, Standard Key, polyester body and head.	2TLA050005R1130
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Flat Key, polyester body and head.	2TLA050005R1230
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and head.	2TLA050005R1330
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and head.	2TLA050005R1430
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and head.	2TLA050005R1530
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and head.	2TLA050005R1031
MKEY 6+	MKEY 6+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and head.	2TLA050005R1131
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and head.	2TLA050005R1231
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and head.	2TLA050005R1331
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and head.	2TLA050005R1431
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and head.	2TLA050005R1531
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, No Key, polyester body and stainless-steel head.	2TLA050005R1040
MKEY 6	MKEY 6 ½ NPT, 2NC/1NO, Standard Key, polyester body and stainless-steel head.	2TLA050005R1140
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Flat Key, polyester body and stainless-steel head.	2TLA050005R1240
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Plastic Flex Key, polyester body and stainless-steel head.	2TLA050005R1340
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, Metal Flex Key, polyester body and stainless-steel head.	2TLA050005R1440
MKEY 6	MKEY 6, ½ NPT, 2NC/1NO, SS Flex Key, polyester body and stainless-steel head.	2TLA050005R1540
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, No Key, 40N, polyester body and stainless-steel head.	2TLA050005R1041
MKEY 6+	MKEY 6+ ½ NPT, 2NC/1NO, Standard Key, 40N, polyester body and stainless-steel head.	2TLA050005R1141
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Flat Key, 40N, polyester body and stainless-steel head.	2TLA050005R1241
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, polyester body and stainless-steel head.	2TLA050005R1341
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, polyester body and stainless-steel head.	2TLA050005R1441
MKEY 6+	MKEY 6+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, polyester body and stainless-steel head.	2TLA050005R1541
MKEY 6	Standard Key, stainless steel	2TLA050040R0202
MKEY 6	Flex Key with metal housing, stainless steel	2TLA050040R0203
MKEY 6	Flex Key with stainless steel housing, stainless steel	2TLA050040R0204
MKEY 6	Flat Key, stainless steel	2TLA050040R0220
MKEY 6	½ NPT Cable Gland, stainless steel	2TLA050040R0001

More information
MKEY 6 data sheet



MKEY 6Z(+) ordering table

Type	Description	Ordering code
MKEY 6Z	MKEY 6Z, ½ NPT, 2NC/1NO, No Key, stainless-steel body and head.	2TLA050005R1020
MKEY 6Z	MKEY 6Z ½ NPT, 2NC/1NO, Standard Key, stainless-steel body and head.	2TLA050005R1120
MKEY 6Z	MKEY 6Z, ½ NPT, 2NC/1NO, Flat Key, stainless-steel body and head.	2TLA050005R1220
MKEY 6Z	MKEY 6Z, ½ NPT, 2NC/1NO, Plastic Flex Key, stainless-steel body and head.	2TLA050005R1320
MKEY 6Z	MKEY 6Z, ½ NPT, 2NC/1NO, Metal Flex Key, stainless-steel body and head.	2TLA050005R1420
MKEY 6Z	MKEY 6Z, ½ NPT, 2NC/1NO, SS Flex Key, stainless-steel body and head.	2TLA050005R1520
MKEY 6Z+	MKEY 6Z+, ½ NPT, 2NC/1NO, No Key, 40N, stainless-steel body and head.	2TLA050005R1021
MKEY 6Z+	MKEY 6Z+ ½ NPT, 2NC/1NO, Standard Key, 40N, stainless-steel body and head.	2TLA050005R1121
MKEY 6Z+	MKEY 6Z+, ½ NPT, 2NC/1NO, Flat Key, 40N, stainless-steel body and head.	2TLA050005R1221
MKEY 6Z+	MKEY 6Z+, ½ NPT, 2NC/1NO, Plastic Flex Key, 40N, stainless-steel body and head.	2TLA050005R1321
MKEY 6Z+	MKEY 6Z+, ½ NPT, 2NC/1NO, Metal Flex Key, 40N, stainless-steel body and head.	2TLA050005R1421
MKEY 6Z+	MKEY 6Z+, ½ NPT, 2NC/1NO, SS Flex Key, 40N, stainless-steel body and head.	2TLA050005R1521
MKEY 6Z	Standard Key, stainless steel.	2TLA050040R0202
MKEY 6Z	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 6Z	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 6Z	Flat Key, stainless steel.	2TLA050040R0220
MKEY 6Z	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 6Z data sheet

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Safety sensors, switches and locks

MKEY



MKEY 8 ordering table

Type	Description	Ordering code
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, die cast body and head.	2TLA050011R1032
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, die cast body and head.	2TLA050011R1033
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, die cast body and head.	2TLA050011R1034
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, die cast body and head.	2TLA050011R1132
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, die cast body and head.	2TLA050011R1133
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, die cast body and head.	2TLA050011R1134
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, die cast body and head.	2TLA050011R1232
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, die cast body and head.	2TLA050011R1233
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, die cast body and head.	2TLA050011R1234
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, die cast body and head.	2TLA050011R1432
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, die cast body and head.	2TLA050011R1433
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, die cast body and head.	2TLA050011R1434
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, die cast body and head.	2TLA050011R1532
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, die cast body and head.	2TLA050011R1533
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, die cast body and head.	2TLA050011R1534
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, SS Head, die cast body.	2TLA050011R1042
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, SS Head, die cast body.	2TLA050011R1043
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, SS Head, die cast body.	2TLA050011R1044
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, SS Head, die cast body.	2TLA050011R1142
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, SS Head, die cast body.	2TLA050011R1143
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, SS Head, die cast body.	2TLA050011R1144
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, SS Head, die cast body.	2TLA050011R1242
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, SS Head, die cast body.	2TLA050011R1243
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, SS Head, die cast body.	2TLA050011R1244
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, SS Head, die cast body.	2TLA050011R1442
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, SS Head, die cast body.	2TLA050011R1443
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, SS Head, die cast body.	2TLA050011R1444
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, SS Head, die cast body.	2TLA050011R1542
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, SS Head, die cast body.	2TLA050011R1543
MKEY 8	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, SS Head, die cast body.	2TLA050011R1544
MKEY 8	Standard Key, stainless steel.	2TLA050040R0202
MKEY 8	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 8	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 8	Flat Key, stainless steel.	2TLA050040R0220
MKEY 8	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 8 data sheet

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Safety sensors, switches and locks

MKEY



MKEY 8M ordering table

Type	Description	Ordering code
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, No Key, die cast body and head.	2TLA050013R1032
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, No Key, die cast body and head.	2TLA050013R1033
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, No Key, die cast body and head.	2TLA050013R1034
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, die cast body and head.	2TLA050013R1132
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, die cast body and head.	2TLA050013R1133
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, die cast body and head.	2TLA050013R1134
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, die cast body and head.	2TLA050013R1232
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, die cast body and head.	2TLA050013R1233
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, die cast body and head.	2TLA050013R1234
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, die cast body and head.	2TLA050013R1432
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, die cast body and head.	2TLA050013R1433
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, die cast body and head.	2TLA050013R1434
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, die cast body and head.	2TLA050013R1532
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, die cast body and head.	2TLA050013R1533
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, die cast body and head.	2TLA050013R1534
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, No Key, SS Head, die cast body.	2TLA050013R1042
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, No Key, SS Head, die cast body.	2TLA050013R1043
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, No Key, SS Head, die cast body.	2TLA050013R1044
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, SS Head, die cast body.	2TLA050013R1142
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, SS Head, die cast body.	2TLA050013R1143
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, SS Head, die cast body.	2TLA050013R1144
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, SS Head, die cast body.	2TLA050013R1242
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, SS Head, die cast body.	2TLA050013R1243
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, SS Head, die cast body.	2TLA050013R1244
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, SS Head, die cast body.	2TLA050013R1442
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, SS Head, die cast body.	2TLA050013R1443
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, SS Head, die cast body.	2TLA050013R1444
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, SS Head, die cast body.	2TLA050013R1542
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, SS Head, die cast body.	2TLA050013R1543
MKEY 8M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, SS Head, die cast body.	2TLA050013R1544
MKEY 8M	Standard Key, stainless steel.	2TLA050040R0202
MKEY 8M	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 8M	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 8M	Flat Key, stainless steel.	2TLA050040R0220
MKEY 8M	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 8M data sheet

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety sensors, switches and locks

MKEY



MKEY 8Z ordering table

Type	Description	Ordering code
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, stainless steel body and head.	2TLA050011R1022
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, stainless steel body and head.	2TLA050011R1023
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, stainless steel body and head.	2TLA050011R1024
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, stainless steel body and head.	2TLA050011R1122
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, stainless steel body and head.	2TLA050011R1123
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, stainless steel body and head.	2TLA050011R1124
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, stainless steel body and head.	2TLA050011R1222
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, stainless steel body and head.	2TLA050011R1223
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, stainless steel body and head.	2TLA050011R1224
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, stainless steel body and head.	2TLA050011R1422
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, stainless steel body and head.	2TLA050011R1522
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, stainless steel body and head.	2TLA050011R1523
MKEY 8Z	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, stainless steel body and head.	2TLA050011R1524
MKEY 8Z	Standard Key, stainless steel.	2TLA050040R0202
MKEY 8Z	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 8Z	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 8Z	Flat Key, stainless steel.	2TLA050040R0220
MKEY 8Z	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 8Z data sheet

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety sensors, switches and locks

MKEY



MKEY 8ER and 8ERZ ordering table

Type	Description	Ordering code
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, die cast body and head.	2TLA050015R1032
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, die cast body and head.	2TLA050015R1033
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, die cast body and head.	2TLA050015R1034
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, die cast body and head.	2TLA050015R1132
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, die cast body and head.	2TLA050015R1133
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, die cast body and head.	2TLA050015R1134
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, die cast body and head.	2TLA050015R1232
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, die cast body and head.	2TLA050015R1233
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, die cast body and head.	2TLA050015R1234
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, die cast body and head.	2TLA050015R1432
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, die cast body and head.	2TLA050015R1433
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, die cast body and head.	2TLA050015R1434
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, die cast body and head.	2TLA050015R1532
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, die cast body and head.	2TLA050015R1533
MKEY 8ER	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, die cast body and head.	2TLA050015R1534
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, stainless steel body and head.	2TLA050015R1022
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, stainless steel body and head.	2TLA050015R1023
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, stainless steel body and head.	2TLA050015R1024
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, stainless steel body and head.	2TLA050015R1122
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, stainless steel body and head.	2TLA050015R1123
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, stainless steel body and head.	2TLA050015R1124
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, stainless steel body and head.	2TLA050015R1222
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, stainless steel body and head.	2TLA050015R1223
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, stainless steel body and head.	2TLA050015R1224
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, stainless steel body and head.	2TLA050015R1422
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, stainless steel body and head.	2TLA050015R1423
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, stainless steel body and head.	2TLA050015R1424
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, stainless steel body and head.	2TLA050015R1522
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, stainless steel body and head.	2TLA050015R1523
MKEY 8ERZ	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, stainless steel body and head.	2TLA050015R1524
MKEY 8ER(Z)	Standard Key, stainless steel.	2TLA050040R0202
MKEY 8ER(Z)	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 8ER(Z)	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 8ER(Z)	Flat Key, stainless steel.	2TLA050040R0220
MKEY 8ER(Z)	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information

MKEY 8ER and 8ERZ data sheet

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety sensors, switches and locks

MKEY



MKEY 9 ordering table

Type	Description	Ordering code
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 24VDC, No Key, polyester body and SS head.	2TLA050007R1012
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 115VAC, No Key, polyester body and SS head.	2TLA050007R1013
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 230VAC, No Key, polyester body and SS head.	2TLA050007R1014
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, polyester body and SS head.	2TLA050007R1112
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, polyester body and SS head.	2TLA050007R1113
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, polyester body and SS head.	2TLA050007R1114
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, polyester body and SS head.	2TLA050007R1212
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, polyester body and SS head.	2TLA050007R1213
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, polyester body and SS head.	2TLA050007R1214
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, polyester body and SS head.	2TLA050007R1412
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, polyester body and SS head.	2TLA050007R1413
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, polyester body and SS head.	2TLA050007R1414
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, polyester body and SS head.	2TLA050007R1512
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, polyester body and SS head.	2TLA050007R1513
MKEY 9	Spring lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, polyester body and SS head.	2TLA050007R1514
MKEY 9	Standard Key, stainless steel.	2TLA050040R0202
MKEY 9	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 9	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 9	Flat Key, stainless steel.	2TLA050040R0220
MKEY 9	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 9 data sheet



MKEY 9M ordering table

Type	Description	Ordering code
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, No Key, polyester body and SS head.	2TLA050009R1012
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, No Key, polyester body and SS head.	2TLA050009R1013
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, No Key, polyester body and SS head.	2TLA050009R1014
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Standard Key, polyester body and SS head.	2TLA050009R1112
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Standard Key, polyester body and SS head.	2TLA050009R1113
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Standard Key, polyester body and SS head.	2TLA050009R1114
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Flat Key, polyester body and SS head.	2TLA050009R1212
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Flat Key, polyester body and SS head.	2TLA050009R1213
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Flat Key, polyester body and SS head.	2TLA050009R1214
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, Metal Flex Key, polyester body and SS head.	2TLA050009R1412
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, Metal Flex Key, polyester body and SS head.	2TLA050009R1413
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, Metal Flex Key, polyester body and SS head.	2TLA050009R1414
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 24VDC, SS Flex Key, polyester body and SS head.	2TLA050009R1512
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 115VAC, SS Flex Key, polyester body and SS head.	2TLA050009R1513
MKEY 9M	Power to Lock, ½ NPT, 2NC/2NO, 230VAC, SS Flex Key, polyester body and SS head.	2TLA050009R1514
MKEY 9M	Standard Key, stainless steel.	2TLA050040R0202
MKEY 9M	Flex Key with metal housing, stainless steel.	2TLA050040R0203
MKEY 9M	Flex Key with stainless steel housing, stainless steel.	2TLA050040R0204
MKEY 9M	Flat Key, stainless steel.	2TLA050040R0220
MKEY 9M	½ NPT Cable Gland, stainless steel.	2TLA050040R0001

More information
MKEY 9M data sheet

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety sensors, switches and locks

MKEY RFID

Ordering details
Note that an actuator is not included, so a key needs to be ordered separately.





MKEY RFID ordering table

Type	Description	Ordering code
MKEY9RF	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, OSSD outputs, 24 V solenoid, plastic body and SS head, no key, power to unlock.	2TLA050007R0602
MKEY9RFQC	Mechanical Solenoid Safety Switch, RFID, M12-8 QC, OSSD outputs, 24 V solenoid, plastic body and SS head, no key, power to unlock.	2TLA050007R2602
MKEY8RF	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, OSSD outputs, 24 V solenoid, Die Cast body and head, no key, power to unlock.	2TLA050011R0612
MKEY8RFQC	Mechanical Solenoid Safety Switch, RFID, M12-8 QC, OSSD outputs, 24 V solenoid, Die Cast body and head, no key, power to unlock.	2TLA050011R2612
MKEY8ZRF	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, OSSD outputs, 24 V solenoid, Stainless Steel body and head, no key, power to unlock.	2TLA050011R0622
MKEY8ZRFQC	Mechanical Solenoid Safety Switch, RFID, M12-8 QC, OSSD outputs, 24 V solenoid, Stainless Steel body and head, no key, power to unlock.	2TLA050011R2622
MKEY10RF	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, OSSD outputs, 24 V solenoid, Die Cast body and SS head, no key, power to unlock, mounting for 4 buttons.	2TLA050012R0612
MKEY10RFER	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, OSSD outputs, 24 V solenoid, Die Cast body and SS head, no key, power to unlock, Rear Release and mounting for 4 buttons.	2TLA050012R0652

Buttons from the Compact range of ABB Pilot Devices are suitable, see Pilot Devices Catalog for selection.







Accessories ordering table

Type	Description	Ordering code
Key	Standard MKey RFID key	2TLA050040R0240
Key	Flexible MKey RFID key	2TLA050040R0241
Slide Bolt	Slide bolt left hand for MKey8RF and MKey9RF, Standard actuator (included).	2TLA050040R0503
Slide Bolt	Slide bolt right hand for MKey8RF and MKey9RF, Standard actuator (included).	2TLA050040R0504
Slide Bolt	Slide bolt left hand for MKey10RF and MKey10RFER, Standard actuator (included).	2TLA050040R0505
Slide Bolt	Slide bolt right hand for MKey10RF and MKey10RFER, Standard actuator (included).	2TLA050040R0506
Rotary Handle	Die cast rotary handle left hand for MKey8RF and MKey9RF, Standard actuator(included).	2TLA050040R0600
Rotary Handle	Die cast rotary handle right hand for MKey8RF and MKey9RF, Standard actuator(included).	2TLA050040R0601
Rotary Handle	Die cast rotary handle left hand for MKey10RF and MKey10RFER, Standard actuator(included).	2TLA050040R0604
Rotary Handle	Die cast rotary handle right hand for MKey10RF and MKey10RFER, Standard actuator(included).	2TLA050040R0605
Rotary Handle	Stainless steel rotary handle left hand, Standard actuator(included).	2TLA050040R0602
Rotary Handle	Stainless steel rotary handle right hand, Standard actuator(included).	2TLA050040R0603
Rear Escape Handle	Rear escape handle die cast left.	2TLA050040R0610
Rear Escape Handle	Rear escape handle die cast right.	2TLA050040R0612
Rear Escape Handle	Rear escape handle stainless steel left.	2TLA050040R0611
Rear Escape Handle	Rear escape handle stainless steel right.	2TLA050040R0613
Rear Handle	RHS GKey MKey Handle accessory.	2TLA050040R0510
Spring Loaded Catch	SCS GKey MKey Handle accessory.	2TLA050040R0511

More information
MKey RFID
Product manual - MKey RFID

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Safety sensors, switches and locks

GKEY



Ordering details

For a complete safety lock, a switch and a mounting plate with front handle must be ordered separately. Rear handle, spring catch, pilot devices and blanking plugs for the unused positions are available and also ordered separately.

GKEY ordering table

All models are fitted with an escape release button and delivered with a high-level coded RFID actuator.

Type	Description	Ordering code
GKEY	Mechanical Solenoid Safety Switch, RFID, M20 cable entry, 2NC/2NO, 24 V solenoid, die cast body and SS head, no key, power to unlock.	2TLA050304R0002



Accessories ordering table

All models are fitted with an escape release button and delivered with a high-level coded RFID actuator.

Type	Description	Ordering code
FHS Gkey 4	Sliding handle, made of tie cast, comes with mounting plate, for hinged and sliding doors, can be mounted on the left or the right.	2TLA050310R0032
Rear Handle	RHS GKey MKey Handle accessory.	2TLA050040R0510
Spring Loaded Catch	SCS GKey MKey Handle accessory.	2TLA050040R0511

Buttons from the Compact range of ABB Pilot Devices are suitable, see Pilot Devices Catalog for selection.

More information

GKey Safety Lock Datasheet
GKey Product Manual

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety control devices

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Safety control devices

JSHD4





JSHD4 ordering table

To order a complete JSHD4, a top part and a bottom part must be included.

Type	Description	Ordering code
JSHD4-1	Top part with no LEDs, no buttons.	2TLA020006R2100
JSHD4-2	Top part with LEDs, front and top buttons.	2TLA020006R2200
JSHD4-3	Top part with LEDs, no buttons.	2TLA020006R2300
JSHD4-4	Top part with LEDs, front button.	2TLA020006R2400
JSHD4-5	Top part with LEDs, top button.	2TLA020006R2500
AA Bottom	Bottom part with cable gland	2TLA020005R1000
AB Bottom	Bottom part with Cannon connector	2TLA020005R1100
AC Bottom	Bottom part with M12-5 connector	2TLA020005R1200
AD Bottom	Bottom part with M12-8 connector	2TLA020005R1300
AH Bottom	Bottom part with cable gland and PCB with 10 screw terminals	2TLA020005R1700
AJ Bottom	Bottom part with cable gland and PCB with 16 screw terminals	2TLA020005R1800
AK Bottom	Bottom part with cannon connector (replacement of former JSHD4)	2TLA020005R1900
AL Bottom	Bottom part with cable gland and holder for Eva	2TLA020005R2000



Accessories ordering table

Type	Description	Ordering code
JSM55	JSM 55 Wall bracket for three position devices.	2TLA040005R0500
JSM5B	JSM 5B Wall bracket for 2 pcs MKey5 interlock switches.	2TLA040005R0700
JSM54A	JSM 54A Wall bracket for Adam. Used with AL bottom part that has a holder for Eva.	2TLA020205R2800
JSM50G	JSM 50G Bracket for key switches.	2TLA020205R6300
JSM50H	JSM 50H Bracket for Eden sensor.	2TLA020205R6400
JSHD4 Coat	JSHD4 protection coat.	2TLA020200R4600



3 position buttons ordering table

Type	Description	Ordering code
JSHD4H2	Thress position device for internal panel mounting, 6 leads at 150mm long.	2TLA020002R3100
JSHD4H2A	Thress position device for external panel mounting, 6 leads at 150mm long.	2TLA020002R0200
JSHD2C	Type E, three position button, gold plated contacts, three leads 190mm long, 20N of force.	2TLA020001R1000
JSHD2C	Type A, three position button, gold plated contacts, three leads 190mm long, 17N of force.	2TLA020001R1100
JSHD2C	Type K, three position button, silver plated contacts, three leads 190mm long, 20N of force.	2TLA020001R1300
JSHD2C	Type F, three position button, gold plated contacts, three leads 1250mm long, 20N of force.	2TLA020001R1400

More information

JSHD4 Flyer - US

JSHD4 Product manual

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety control devices

HD5



HD5 ordering table

Type	Description	Ordering code
HD5-S-102	Three-position enabling device. With front auxiliary button. M23-12 male connector.	2TLA023001R0000
HD5-S-104	Three-position enabling device. With 1 front and 2 top auxiliary buttons, M23-12 male connector.	2TLA023001R0200
HD5-S-111	Three-position enabling device. With emergency stop button, 1 front and 2 top auxiliary buttons, flashlight, home position sensor, motion sensor. M23-19 male connector.	2TLA023001R0100
HD5-B-101	Top part with LEDs, front button.	2TLA920502R0003
HD5-B-102	Top part with LEDs, top button.	2TLA920502R0004



HD5 Accessories ordering table

Type	Description	Ordering code
HD5-M-001	Active holder (for home position sensor)	2TLA920509R0001
HD5-M-002	Passive holder	2TLA920509R0002
JSD-TK5-12	5 m cable with M23-12 female connector	2TLA930050R0000
JSD-TK10-12	10 m cable with M23-12 female connector	2TLA930051R0000
M23-SPC12-05/25	0.5/2.5 m spiral cable with M23-12 female connector	2TLA023100R0000
M23-SPC12-10/50	1/5 m spiral cable with M23-12 female connector	2TLA023200R0000
JSD-TK100S-12	10 m spiral cable with M23-12 female connector	2TLA930034R0000
JSD-TK5-19	5 m cable with M23-19 female connector	2TLA930057R0000
JSD-TK10-19	10 m cable with M23-19 female connector	2TLA930058R0000
M23-STC12-0250	25 m cable with M23-19 female connector	2TLA023300R0000
M23-SPC19-05/25	0.5/2.5 m spiral cable with M23-19 female connector	2TLA023400R0000
M23-SPC19-10/50	1/5 m spiral cable with M23-19 female connector	2TLA023500R0000
M12-C51-ASi	5 m unshielded cable with M12-5 female connector	2TLA910093R0000
M12-C251S-ASi	2.5 m unshielded spiral cable with M12-5 female connector	2TLA910094R0000

More information

HD5 flyer
HD5-S - original instructions
HD5-B - Original instructions

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Safety control devices

Safeball





Safeball ordering table

Type	Description	Ordering code
JSTD1-A	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 2-meter molded cable.	2TLA020007R3000
JSTD1-B	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection into an enclosure.	2TLA020007R3100
JSTD1-C	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 10-meter molded cable.	2TLA020007R3200
JSTD1-E	2 NO independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection into an enclosure.	2TLA020007R3400
JSTD25F	JSTD25F with (2) JSTD1-B pre-wired to a M12 5-pin connector with protective flanges for the Safeballs	2TLA020007R6000
JSTD25H	JSTD25H with (2) JSTD1-B pre-wired to a M12 8-pin connector with protective flanges for the Safeballs	2TLA020007R6300
JSTD25G	JSTD25G with (2) JSTD1-B pre-wired to a M12 8-pin connector, emergency stop with protective flanges for the Safeballs	2TLA020007R6900



Accessories ordering table

Type	Description	Ordering code
JSMC5	Mounting bracket for JSTD1 with orientation possibility (ball joint)	2TLA020007R0900
JSMC7	Suspension shelf for JSTD25F/H/K	2TLA020007R1200
Safeball coat	Protection coat for Safeball	2TLA020007R1900

More information
Safeball flyer
Safeball Original instructions

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Emergency stops and pilot devices

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Emergency stops and pilot devices

Smile and Inca





Smile and Inca ordering table

Type	Description	Ordering code
Smile 10 EA Tina	Emergency stop (red) in an enclosure, 1m cable out of bottom, for use in DYNlink circuits.	2TLA030050R0400
Smile 11 EA Tina	Emergency stop (red) in an enclosure, Status LED, 1 x M12 5-pin male connector, for use in DYNlink circuits.	2TLA030050R0000
Smile 11 SA Tina	Safety stop (black) in an enclosure, Status LED, 1 x M12 5-pin male connector, for use in DYNlink circuits.	2TLA030050R0500
Smile 11 EC Tina	Emergency stop (red) in an enclosure, Status LED, 1 x M12 5-pin male connector, for use in DYNlink circuits, with statusbus, for use with Pluto Safety PLC.	2TLA030050R0900
Smile 12 EA Tina	Emergency stop (red) in an enclosure, Status LED, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector, for use in DYNlink circuits.	2TLA030050R0200
Smile 10 EA	Emergency stop (red) in an enclosure, 1m cable out of bottom, for use with safety relays.	2TLA030051R0400
Smile 10 EK	Emergency stop (red) in an enclosure, 2 x NC, 1m leads out of bottom, for use with safety relays.	2TLA030051R0600
Smile 11 EA	Emergency stop (red) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector, for use with safety relays.	2TLA030051R0000
Smile 11 SA	Safety stop (black) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector, for use with safety relays.	2TLA030051R0900
Smile 12 EA	Emergency stop (red) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector, for use with safety relays.	2TLA030051R0200
Smile 11EAR Tina	Emergency stop (red) in an enclosure for panel mounting, 2 x NC, Status LED, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector, for use with safety relays.	2TLA030050R0100
Smile 11EAR	Emergency stop (red) in an enclosure for panel mounting, Status LED, 1 x M12 5-pin male connector and 1 x M12 5-pin female connector, for use in DYNlink circuits.	2TLA030051R0100
Inca 1 Tina v2	Emergency stop (red) button for panel mounting, 22.5 mm holes, Status LED in button, terminal block with screw terminals, for use in DYNlink circuits.	2TLA030054R0010
Inca 1 EC Tina	Emergency stop (red) button for panel mounting, 22.5 mm holes, Status LED in button, terminal block with screw terminals, for use in DYNlink circuits, with Statusbus, for use with Pluto Safety PLC.	2TLA030054R1400
Inca 1	Emergency stop (red) button for panel mounting, 22.5 mm holes, 2 x NC, Status LED, terminal block with screw terminals, for use with safety relays.	2TLA030054R0100
Inca 1S Tina v2	Safety stop (black) button for panel mounting, 22.5 mm holes, Status LED in button, terminal block with screw terminals, for use in DYNlink circuits.	2TLA030054R0210
Inca 1S	Safety stop (black) button for panel mounting, 22.5 mm holes, 2 x NC, Status LED, terminal block with screw terminals, for use with safety relays.	2TLA030054R0300
Smile 11RA	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Vital/Safety Relays	2TLA030053R0000
Smile 11RB	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Pluto	2TLA030053R0100
Smile 41 EWWP	Smile 41 push-button box with an emergency stop (red), 3 push-buttons and kit of colored lens covers, for use with Pluto	2TLA030057R0100

Accessories ordering table

Type	Description	Ordering code
Surround for Inca	Yellow surround for Inca	2TLA030054R0400
E-Sign 22.5	Emergency stop sign, yellow, no text, for INCA (22.5mm)	2TLA030054R0900
E-Sign 32.5	Emergency stop sign, yellow, no text, for Smile (32.5mm)	2TLA030054R1000
JST2	Termination plug for Smile 12 (also required for unused connectors on OCB-2A)	2TLA030051R1300
M12-3A	M12 Y-connector for series connection of DYNlink devices such as Eden, Smile, Inca and Tina.	2TLA020055R0000
M12-3S	M12 Y-connector for series connection of DYNlink devices with the StatusBus function.	2TLA020055R0600
Colored Filters	Kit of colored filters (yellow, green, white, blue, red)	2TLA030059R2600

More information

E-Stops flyer
INCA product manual
INCA Tina product manual
Smile product manual
Smile Tina Original instructions
Smile Reset Original instructions
Smile 41 Manual

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Emergency stops and pilot devices

EStrong





EStrong ordering table

Type	Description	Ordering code
EStrong	EStrong, ½ NPT cable entry, 2NC/2NO, stainless steel housing.	2TLA050220R1020
EStrong	EStrong, ½ NPT cable entry, with protection shroud, 2NC/2NO, stainless steel housing.	2TLA050220R1422
EStrong	EStrong, ½ NPT cable entry, 24VDC LED, 2NC/2NO, stainless steel housing.	2TLA050220R1222
EStrong	EStrong, ½ NPT cable entry, 115VAC LED, 2NC/2NO, stainless steel housing.	2TLA050220R1223
EStrong	EStrong, ½ NPT cable entry, 230VAC LED, 2NC/2NO, stainless steel housing.	2TLA050220R1224

Accessories ordering table

Type	Description	Ordering code
Accessory	1/2 NPT 316 SS Cable Gland	2TLA050040R0001

More information

Estrong Emergency Stop Data Sheet USA
EStrong-series - Original instructions

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Emergency stops and pilot devices

LineStrong



LineStrong 1 ordering table

Type	Description	Ordering code
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, die cast housing.	2TLA050200R1030
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, Estop, die cast housing.	2TLA050200R1130
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, 24VDC LED, die cast housing.	2TLA050200R1232
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, 110VAC LED, die cast housing.	2TLA050200R1233
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, 230VAC LED, die cast housing.	2TLA050200R1234
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, Estop, 24VDC LED, die cast housing.	2TLA050200R1332
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, Estop, 110VAC LED, die cast housing.	2TLA050200R1333
LineStrong 1	LineStrong 1, ½ NPT cable entry, 2NC/2NO, Estop, 230VAC LED, die cast housing.	2TLA050200R1334

More information
LineStrong 1 Data Sheet USA



LineStrong 2 ordering table

Type	Description	Ordering code
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, die cast housing.	2TLA050202R1030
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, Estop, die cast housing.	2TLA050202R1130
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, 24VDC LED, die cast housing.	2TLA050202R1232
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, 110VAC LED, die cast housing.	2TLA050202R1233
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, 230VAC LED, die cast housing.	2TLA050202R1234
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, Estop, 24VDC LED, die cast housing.	2TLA050202R1332
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, Estop, 110VAC LED, die cast housing.	2TLA050202R1333
LineStrong 2	Linestrong 2, ½ NPT cable entry, 2NC/2NO, Estop, 230VAC LED, die cast housing.	2TLA050202R1334

More information
LineStrong 2 Data Sheet USA



LineStrong 2Z ordering table

Type	Description	Ordering code
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, stainless steel housing.	2TLA050202R1020
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, Estop, stainless steel housing.	2TLA050202R1120
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, 24VDC LED, stainless steel housing.	2TLA050202R1222
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, 110VAC LED, stainless steel housing.	2TLA050202R1223
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, 230VAC LED, stainless steel housing.	2TLA050202R1224
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, Estop, 24VDC LED, stainless steel housing.	2TLA050202R1322
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, Estop, 110VAC LED, stainless steel housing.	2TLA050202R1323
LineStrong 2Z	Linestrong 2Z, ½ NPT cable entry, 2NC/2NO, Estop, 230VAC LED, stainless steel housing.	2TLA050202R1324

More information
LineStrong 2Z Data Sheet USA



LineStrong 3D ordering table

Type	Description	Ordering code
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, die cast housing.	2TLA050204R1030
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, Estop, die cast housing.	2TLA050204R1130
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, 24VDC LED, die cast housing.	2TLA050204R1232
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, 110VAC LED, die cast housing.	2TLA050204R1233
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, 230VAC LED, die cast housing.	2TLA050204R1234
LineStrong 3D	LineStrong 3D, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, die cast housing.	2TLA050204R1332
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, die cast housing.	2TLA050204R1333
LineStrong 3D	LineStrong 3D, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, die cast housing.	2TLA050204R1334

More information
LineStrong 3D Data Sheet USA

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Emergency stops and pilot devices
LineStrong



LineStrong 3DZ ordering table

Type	Description	Ordering code
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, stainless steel housing.	2TLA050204R1020
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, Estop, stainless steel housing.	2TLA050204R1120
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, 24VDC LED, stainless steel housing.	2TLA050204R1222
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, 110VAC LED, stainless steel housing.	2TLA050204R1223
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, 230VAC LED, stainless steel housing.	2TLA050204R1224
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, stainless steel housing.	2TLA050204R1322
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, stainless steel housing.	2TLA050204R1323
LineStrong 3DZ	LineStrong 3DZ, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, stainless steel housing.	2TLA050204R1324

More information
LineStrong 3DZ Data Sheet USA





LineStrong 3L and R ordering table

Type	Description	Ordering code
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, die cast housing.	2TLA050206R1030
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, Estop, die cast housing.	2TLA050206R1130
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, 24VDC LED, die cast housing.	2TLA050206R1232
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, 110VAC LED, die cast housing.	2TLA050206R1233
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, 230VAC LED, die cast housing.	2TLA050206R1234
LineStrong 3L	LineStrong 3L, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, die cast housing.	2TLA050206R1332
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, die cast housing.	2TLA050206R1333
LineStrong 3L	LineStrong 3L, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, die cast housing.	2TLA050206R1334
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, die cast housing.	2TLA050208R1030
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, Estop, die cast housing.	2TLA050208R1130
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, 24VDC LED, die cast housing.	2TLA050208R1232
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, 110VAC LED, die cast housing.	2TLA050208R1233
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, 230VAC LED, die cast housing.	2TLA050208R1234
LineStrong 3R	LineStrong 3R, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, die cast housing	2TLA050208R1332
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, die cast housing.	2TLA050208R1333
LineStrong 3R	LineStrong 3R, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, die cast housing.	2TLA050208R1334

More information
LineStrong 3L and 3R Data Sheet USA



LineStrong 3LZ and RZ ordering table

Type	Description	Ordering code
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, stainless steel housing.	2TLA050206R1020
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, Estop, stainless steel housing.	2TLA050206R1120
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, 24VDC LED, stainless steel housing.	2TLA050206R1222
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, 110VAC LED, stainless steel housing.	2TLA050206R1223
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, 230VAC LED, stainless steel housing.	2TLA050206R1224
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, stainless steel housing.	2TLA050206R1322
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, stainless steel housing.	2TLA050206R1323
LineStrong 3LZ	LineStrong 3LZ, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, stainless steel housing.	2TLA050206R1324
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, stainless steel housing.	2TLA050208R1020
LineStrong 3Rz	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, Estop, stainless steel housing.	2TLA050208R1120
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, 24VDC LED, stainless steel housing.	2TLA050208R1222
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, 110VAC LED, stainless steel housing.	2TLA050208R1223
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, 230VAC LED, stainless steel housing.	2TLA050208R1224
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry 4NC/2NO, Estop, 24VDC LED, stainless steel housing.	2TLA050208R1322
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, Estop, 110VAC LED, stainless steel housing.	2TLA050208R1323
LineStrong 3RZ	LineStrong 3RZ, ½ NPT cable entry, 4NC/2NO, Estop, 230VAC LED, stainless steel housing.	2TLA050208R1324

More information
LineStrong 3LZ and 3RZ Data Sheet USA

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Safety control devices

LineStrong



Accessories ordering table

Type	Description	Ordering code
Accessory	½ NPT Cable Gland	2TLA050040R0001
Accessory	5M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0020
Accessory	10M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0120
Accessory	15M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0220
Accessory	20M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0320
Accessory	30M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0420
Accessory	50M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0520
Accessory	80M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0620
Accessory	100M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0720
Accessory	126M Rope Kit, Stainless Steel with Allen Key	2TLA050210R0820
Accessory	5M Rope Kit, Galvanized with Allen Key	2TLA050210R0030
Accessory	10M Rope Kit, Galvanized with Allen Key	2TLA050210R0130
Accessory	15M Rope Kit, Galvanized with Allen Key	2TLA050210R0230
Accessory	20M Rope Kit, Galvanized with Allen Key	2TLA050210R0330
Accessory	30M Rope Kit, Galvanized with Allen Key	2TLA050210R0430
Accessory	50M Rope Kit, Galvanized with Allen Key	2TLA050210R0530
Accessory	80M Rope Kit, Galvanized with Allen Key	2TLA050210R0630
Accessory	100M Rope Kit, Galvanized. with Allen Key	2TLA050210R0730
Accessory	126M Rope Kit, Galvanized with Allen Key	2TLA050210R0830
Accessory	Rope Tensioner, Stainless Steel	2TLA050210R4020
Accessory	Rope Tensioner, Galvanized	2TLA050210R4030
Accessory	Eyebolt M8x1.25, Stainless Steel	2TLA050210R8020
Accessory	Eyebolt M8x1.25, Galvanized	2TLA050210R8030
Accessory	Pully, Stainless Steel	2TLA050210R6020
Accessory	Pully, Galvanized	2TLA050210R6030
Accessory	LED Green/Red 24 VDC	2TLA050211R0001
Accessory	LED Green/Red 110 VAC	2TLA050211R0002
Accessory	LED Green/Red 230VAC	2TLA050211R0003
Accessory	Safety Spring. 220mm long	2TLA050211R0004
Accessory	E-Stop Button	2TLA050211R0005
Accessory	Anti-Tamper, Torx T20	2TLA050211R0006
Accessory	Flexible Roller with Adjustment	2TLA858006R1300

More information

LineStrong - Original instructions

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Pressure sensitive devices

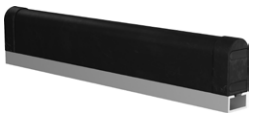
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Pressure sensitive devices

TT Safety edge



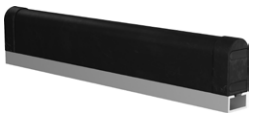
Accessories ordering table

Type	Description	Ordering code
TT 25-30 TPE	Safety Edge 25-30, 12" w/rail,5m cables	2TLA858008R5400
TT 25-30 TPE	Safety Edge 25-30, 13" w/rail,5m cables	2TLA858008R5500
TT 25-30 TPE	Safety Edge 25-30, 14" w/rail,5m cables	2TLA858008R5600
TT 25-30 TPE	Safety Edge 25-30, 15" w/rail,5m cables	2TLA858008R5700
TT 25-30 TPE	Safety Edge 25-30, 16" w/rail,5m cables	2TLA858008R5800
TT 25-30 TPE	Safety Edge 25-30, 17" w/rail,5m cables	2TLA858008R5900
TT 25-30 TPE	Safety Edge 25-30, 18" w/rail,5m cables	2TLA858008R6000
TT 25-30 TPE	Safety Edge 25-30, 19" w/rail,5m cables	2TLA858008R6100
TT 25-30 TPE	Safety Edge 25-30, 20" w/rail,5m cables	2TLA858008R6200
TT 25-30 TPE	Safety Edge 25-30, 21" w/rail,5m cables	2TLA858008R6300
TT 25-30 TPE	Safety Edge 25-30, 22" w/rail,5m cables	2TLA858008R6400
TT 25-30 TPE	Safety Edge 25-30, 23" w/rail,5m cables	2TLA858008R6500
TT 25-30 TPE	Safety Edge 25-30, 24" w/rail,5m cables	2TLA858008R6600
TT 25-30 TPE	Safety Edge 25-30, 25" w/rail,5m cables	2TLA858008R6700
TT 25-30 TPE	Safety Edge 25-30, 26" w/rail,5m cables	2TLA858008R6800
TT 25-30 TPE	Safety Edge 25-30, 27" w/rail,5m cables	2TLA858008R6900
TT 25-30 TPE	Safety Edge 25-30, 28" w/rail,5m cables	2TLA858008R7000
TT 25-30 TPE	Safety Edge 25-30, 29" w/rail,5m cables	2TLA858008R7100
TT 25-30 TPE	Safety Edge 25-30, 30" w/rail,5m cables	2TLA858008R7200
TT 25-30 TPE	Safety Edge 25-30, 31" w/rail,5m cables	2TLA858008R7300
TT 25-30 TPE	Safety Edge 25-30, 32" w/rail,5m cables	2TLA858008R7400
TT 25-30 TPE	Safety Edge 25-30, 33" w/rail,5m cables	2TLA858008R7500
TT 25-30 TPE	Safety Edge 25-30, 34" w/rail,5m cables	2TLA858008R7600
TT 25-30 TPE	Safety Edge 25-30, 35" w/rail,5m cables	2TLA858008R7700
TT 25-30 TPE	Safety Edge 25-30, 36" w/rail,5m cables	2TLA858008R7800
TT 25-30 TPE	Safety Edge 25-30, 37" w/rail,5m cables	2TLA858008R7900
TT 25-30 TPE	Safety Edge 25-30, 38" w/rail,5m cables	2TLA858008R8000
TT 25-30 TPE	Safety Edge 25-30, 39" w/rail,5m cables	2TLA858008R8100
TT 25-30 TPE	Safety Edge 25-30, 40" w/rail,5m cables	2TLA858008R8200
TT 25-30 TPE	Safety Edge 25-30, 41" w/rail,5m cables	2TLA858008R8300
TT 25-30 TPE	Safety Edge 25-30, 42" w/rail,5m cables	2TLA858008R8400
TT 25-30 TPE	Safety Edge 25-30, 43" w/rail,5m cables	2TLA858008R8500
TT 25-30 TPE	Safety Edge 25-30, 44" w/rail,5m cables	2TLA858008R8600
TT 25-30 TPE	Safety Edge 25-30, 45" w/rail,5m cables	2TLA858008R8700
TT 25-30 TPE	Safety Edge 25-30, 46" w/rail,5m cables	2TLA858008R8800
TT 25-30 TPE	Safety Edge 25-30, 47" w/rail,5m cables	2TLA858008R8900
TT 25-30 TPE	Safety Edge 25-30, 48" w/rail,5m cables	2TLA858008R9000
TT 25-45 TPE	Safety Edge 25-45, 12" w/rail,5m cables	2TLA858008R9100
TT 25-45 TPE	Safety Edge 25-45, 13" w/rail,5m cables	2TLA858008R9200
TT 25-45 TPE	Safety Edge 25-45, 14" w/rail,5m cables	2TLA858008R9300
TT 25-45 TPE	Safety Edge 25-45, 15" w/rail,5m cables	2TLA858008R9400
TT 25-45 TPE	Safety Edge 25-45, 16" w/rail,5m cables	2TLA858008R9500
TT 25-45 TPE	Safety Edge 25-45, 17" w/rail,5m cables	2TLA858008R9600
TT 25-45 TPE	Safety Edge 25-45, 18" w/rail,5m cables	2TLA858008R9700
TT 25-45 TPE	Safety Edge 25-45, 19" w/rail,5m cables	2TLA858008R9800
TT 25-45 TPE	Safety Edge 25-45, 20" w/rail,5m cables	2TLA858008R9900
TT 25-45 TPE	Safety Edge 25-45, 21" w/rail,5m cables	2TLA858009R0000
TT 25-45 TPE	Safety Edge 25-45, 22" w/rail,5m cables	2TLA858009R0100
TT 25-45 TPE	Safety Edge 25-45, 23" w/rail,5m cables	2TLA858009R0200
TT 25-45 TPE	Safety Edge 25-45, 24" w/rail,5m cables	2TLA858009R0300

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Pressure sensitive devices

TT Safety edge



Accessories ordering table (continued)

Type	Description	Ordering code
TT 25-45 TPE	Safety Edge 25-45, 25" w/rail,5m cables	2TLA858009R0400
TT 25-45 TPE	Safety Edge 25-45, 26" w/rail,5m cables	2TLA858009R0500
TT 25-45 TPE	Safety Edge 25-45, 27" w/rail,5m cables	2TLA858009R0600
TT 25-45 TPE	Safety Edge 25-45, 28" w/rail,5m cables	2TLA858009R0700
TT 25-45 TPE	Safety Edge 25-45, 29" w/rail,5m cables	2TLA858009R0800
TT 25-45 TPE	Safety Edge 25-45, 30" w/rail,5m cables	2TLA858009R0900
TT 25-45 TPE	Safety Edge 25-45, 31" w/rail,5m cables	2TLA858009R1000
TT 25-45 TPE	Safety Edge 25-45, 32" w/rail,5m cables	2TLA858009R1100
TT 25-45 TPE	Safety Edge 25-45, 33" w/rail,5m cables	2TLA858009R1200
TT 25-45 TPE	Safety Edge 25-45, 34" w/rail,5m cables	2TLA858009R1300
TT 25-45 TPE	Safety Edge 25-45, 35" w/rail,5m cables	2TLA858009R1400
TT 25-45 TPE	Safety Edge 25-45, 36" w/rail,5m cables	2TLA858009R1500
TT 25-45 TPE	Safety Edge 25-45, 37" w/rail,5m cables	2TLA858009R1600
TT 25-45 TPE	Safety Edge 25-45, 38" w/rail,5m cables	2TLA858009R1700
TT 25-45 TPE	Safety Edge 25-45, 39" w/rail,5m cables	2TLA858009R1800
TT 25-45 TPE	Safety Edge 25-45, 40" w/rail,5m cables	2TLA858009R1900
TT 25-45 TPE	Safety Edge 25-45, 41" w/rail,5m cables	2TLA858009R2000
TT 25-45 TPE	Safety Edge 25-45, 42" w/rail,5m cables	2TLA858009R2100
TT 25-45 TPE	Safety Edge 25-45, 43" w/rail,5m cables	2TLA858009R2200
TT 25-45 TPE	Safety Edge 25-45, 44" w/rail,5m cables	2TLA858009R2300
TT 25-45 TPE	Safety Edge 25-45, 45" w/rail,5m cables	2TLA858009R2400
TT 25-45 TPE	Safety Edge 25-45, 46" w/rail,5m cables	2TLA858009R2500
TT 25-45 TPE	Safety Edge 25-45, 47" w/rail,5m cables	2TLA858009R2600
TT 25-45 TPE	Safety Edge 25-45, 48" w/rail,5m cables	2TLA858009R2700

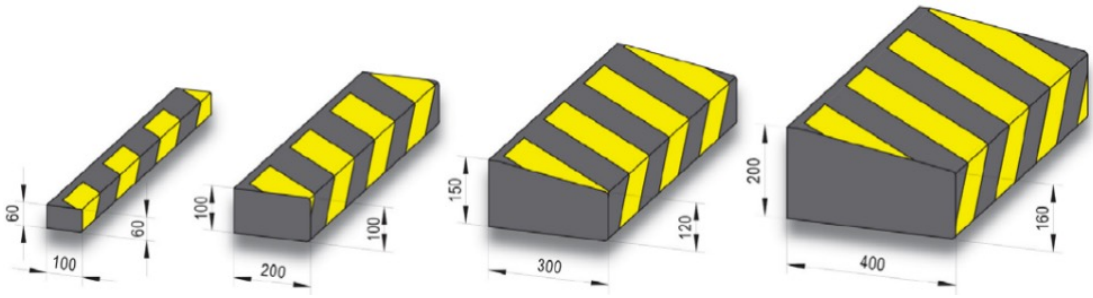
More information

TT- Series Safety Edge Data Sheet USA

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Pressure sensitive devices
ASB Safety bumpers

Step 1 – choose style 60mm x 100mm, 100mm x 200mm, 150mm x 300mm or 200mm x 400mm.



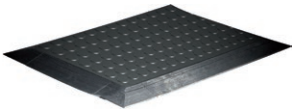
Step 2 – choose length 60mm x 100mm, 100mm x 200mm, 150mm x 300mm or 200mm x 400mm.
Step 3 – Email into Jokab.service@us.abb.com to get pricing.

More information
Safety bumper product manual

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Pressure sensitive devices

ASK Safety mats



Accessories ordering table

Type	Description	Ordering code
ASK-U	Safety Mat 12” x 12”, 10m cable, without built in ramp rail	2TLA858003R2800
ASK-U	Safety Mat 24” x 24”, 10m cable, without built in ramp rail	2TLA858002R3800
ASK-U	Safety Mat 24” x 30”, 10m cable, without built in ramp rail	2TLA858002R3900
ASK-U	Safety Mat 24” x 36”, 10m cable, without built in ramp rail	2TLA858002R4000
ASK-U	Safety Mat 24” x 42”, 10m cable, without built in ramp rail	2TLA858002R4100
ASK-U	Safety Mat 24” x 48”, 10m cable, without built in ramp rail	2TLA858002R4200
ASK-U	Safety Mat 24” x 60”, 10m cable, without built in ramp rail	2TLA858002R4300
ASK-U	Safety Mat 30” x 30”, 10m cable, without built in ramp rail	2TLA858002R4400
ASK-U	Safety Mat 30” x 36”, 10m cable, without built in ramp rail	2TLA858002R4500
ASK-U	Safety Mat 30” x 42”, 10m cable, without built in ramp rail	2TLA858002R4600
ASK-U	Safety Mat 30” x 48”, 10m cable, without built in ramp rail	2TLA858002R4700
ASK-U	Safety Mat 36” x 36”, 10m cable, without built in ramp rail	2TLA858002R4800
ASK-U	Safety Mat 36” x 42”, 10m cable, without built in ramp rail	2TLA858002R4900
ASK-U	Safety Mat 36” x 48”, 10m cable, without built in ramp rail	2TLA858002R5000
ASK-U	Safety Mat 36” x 60”, 10m cable, without built in ramp rail	2TLA858002R5100
ASK-U	Safety Mat 42” x 42”, 10m cable, without built in ramp rail	2TLA858002R5200
ASK-U	Safety Mat 42” x 48”, 10m cable, without built in ramp rail	2TLA858002R5300
ASK-U	Safety Mat 48” x 48”, 10m cable, without built in ramp rail	2TLA858002R5400
ASK-U	Safety Mat 48” x 60”, 10m cable, without built in ramp rail	2TLA858002R5500
ASK-T	Safety Mat 12” x 12”, 10m cable, with built in ramp rail	2TLA858003R2900
ASK-T	Safety Mat 24” x 24”,10m cable, with built in ramp rail	2TLA858002R5600
ASK-T	Safety Mat 24” x 30”, 10m cable, with built in ramp rail	2TLA858002R5700
ASK-T	Safety Mat 24” x 36”, 10m cable, with built in ramp rail	2TLA858002R5800
ASK-T	Safety Mat 24” x 42”, 10m cable, with built in ramp rail	2TLA858002R5900
ASK-T	Safety Mat 24” x 48”, 10m cable, with built in ramp rail	2TLA858002R6000
ASK-T	Safety Mat 24” x 60”, 10m cable, with built in ramp rail	2TLA858002R6100
ASK-T	Safety Mat 30” x 30”, 10m cable, with built in ramp rail	2TLA858002R6200
ASK-T	Safety Mat 30” x 36”, 10m cable, with built in ramp rail	2TLA858002R6300
ASK-T	Safety Mat 30” x 42”, 10m cable, with built in ramp rail	2TLA858002R6400
ASK-T	Safety Mat 30” x 48”, 10m cable, with built in ramp rail	2TLA858002R6500
ASK-T	Safety Mat 36” x 36”,10m cable, with built in ramp rail	2TLA858002R6600
ASK-T	Safety Mat 36” x 42”,10m cable, with built in ramp rail	2TLA858002R6700
ASK-T	Safety Mat 36” x 48”,10m cable, with built in ramp rail	2TLA858002R6800
ASK-T	Safety Mat 36” x 60”,10m cable, with built in ramp rail	2TLA858002R6900
ASK-T	Safety Mat 42” x 42”,10m cable, with built in ramp rail	2TLA858002R7000
ASK-T	Safety Mat 42” x 48”,10m cable, with built in ramp rail	2TLA858002R7100
ASK-T	Safety Mat 48” x 48”,10m cable, with built in ramp rail	2TLA858002R7200
ASK-T	Safety Mat 48” x 60”,10m cable, with built in ramp rail	2TLA858002R7300
Accessory	Trim Corner Connector	2TLA858002R7400
Accessory	Aluminum Trim 4-foot piece	2TLA858009R2800
Accessory	Aluminum Trim 7-foot piece	2TLA858009R2900

NOTE: Custom mats available. Contact ABB for pricing.

More information
ASK Safety Mat Data Sheet USA
Safety Mat Product Manual

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Cables and connectors

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Cables and connectors

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Cables and connectors

Cables and connectors



M12-C101



M12-C102



M12-C01



C8 cable 500m

Accessories ordering table

Type	Description	Ordering code
M12-C31	M12-5 Female single ended cable, 3m length.	2TLA020056R0500
M12-C61	M12-5 Female single ended cable, 6m length.	2TLA020056R0000
M12-C61V2	M12-5 90 Degree Female single ended cable, 6m length.	2TLA020056R0600
M12-C61HE	M12-5 Female single ended cable, 6m length, Harsh environment, halogen free.	2TLA020056R8000
M12-C101	M12-5 Female single ended cable, 10m length.	2TLA020056R1000
M12-C101V2	M12-5 90 Degree Female single ended cable, 10m length.	2TLA020056R1500
M12-C101HE	M12-5 Female single ended cable, 10m length, Harsh environment, halogen free.	2TLA020056R8100
M12-C201	M12-5 Female single ended cable, 20m length.	2TLA020056R1400
M12-C0312	M12-5 Female/male double ended cable, 0.3m length.	2TLA020056R5800
M12-C00612	M12-5 Female/male double ended cable, 0.06m length.	2TLA020056R6300
M12-C112	M12-5 Female/male double ended cable, 1m length.	2TLA020056R2000
M12-C312	M12-5 Female/male double ended cable, 3m length.	2TLA020056R2100
M12-C612	M12-5 Female/male double ended cable, 6m length.	2TLA020056R2200
M12-C1012	M12-5 Female/male double ended cable, 10m length.	2TLA020056R2300
M12-C1012V2	M12-5 Female/male 90 degree double ended cable, 10m length.	2TLA020056R6700
M12-C1612	M12-5 Female/male double ended cable, 16m length.	2TLA020056R2400
M12-C2012	M12-5 Female/male double ended cable, 20m length.	2TLA020056R2500
M12-C62	M12-5 Male single ended cable, 6m length.	2TLA020056R0200
M12-C102	M12-5 Male single ended cable, 10m length.	2TLA020056R1200
M12-C33	M12-8 Female single ended cable, 3m length.	2TLA020056R2900
M12-C63	M12-8 Female single ended cable, 6m length.	2TLA020056R3000
M12-C103	M12-8 Female single ended cable, 10m length.	2TLA020056R4000
M12-C203	M12-8 Female single ended cable, 20m length.	2TLA020056R4100
M12-C104	M12-8 Male single ended cable, 10m length.	2TLA020056R4200
M12-C134	M12-8 Female/male double ended cable, 1m length.	2TLA020056R5000
M12-C334	M12-8 Female/male double ended cable, 3m length.	2TLA020056R5100
M12-C634	M12-8 Female/male double ended cable, 6m length.	2TLA020056R7600
M12-C1034	M12-8 Female/male double ended cable, 10m length.	2TLA020056R7700
M12-C2034	M12-8 Female/male double ended cable, 20m length.	2TLA020056R7800
M12-C65	M12-12 Female single ended cable, 6m length.	2TLA020056R7200
M12-C105	M12-12 Female single ended cable, 10m length.	2TLA020056R7300
M12-C205	M12-12 Female single ended cable, 20m length.	2TLA020056R7500
M12-C01	M12-5 female straight field wirable.	2TLA020055R1000
M12-C02	M12-5 male straight field wirable.	2TLA020055R1100
M12-C03	M12-8 female straight field wirable.	2TLA020055R1600
M12-C04	M12-8 male straight field wirable.	2TLA020055R1700
C5 cable 10m	5 x 0.34 shielded cable spool 10m	2TLA020057R0001
C5 cable 50m	5 x 0.34 shielded cable spool 50m	2TLA020057R0005
C5 cable 100m	5 x 0.34 shielded cable spool 100m	2TLA020057R0010
C5 cable 200m	5 x 0.34 shielded cable spool 200m	2TLA020057R0020
C5 cable 500m	5 x 0.34 shielded cable spool 500m	2TLA020057R0050
C8 cable 50m	8 x 0.34 shielded cable spool 50m	2TLA020057R1005
C8 cable 100m	8 x 0.34 shielded cable spool 100m	2TLA020057R1010
C8 cable 200m	8 x 0.34 shielded cable spool 200m	2TLA020057R1020
C8 cable 500m	8 x 0.34 shielded cable spool 500m	2TLA020057R1050
C9 cable 150m	7 x 0.51 + 2 x 0.82 shielded cable spool 150m	2TLA020057R1515
C9 cable 350m	7 x 0.51 shielded cable spool 350m	2TLA020057R1535
C13 cable 100m	11 x 0.51 + 2 x 0.82 shielded cable spool 100m	2TLA020057R2010
C13 cable 250m	11 x 0.51 + 2 x 0.82 shielded cable spool 250m	2TLA020057R2025
M12-3A	M12 Y-connector for series connection of DYNlink devices such as Eden, Smile, Inca and Tina.	2TLA020055R0000
M12-3B	M12 Y-connector for parallel connection of 2 DYNlink devices.	2TLA020055R0100
M12-3D	Y-connector for easy connection of a transmitter	2TLA020055R0300

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Cables and connectors

Cables and connectors



M12-3G

Accessories ordering table (continued)

Type	Description	Ordering code
M12-3E	M12 Y-connector for the connection of 2 DYNlink devices or one DYNlink and one light button to Pluto safety PLC with only one cable.	2TLA020055R0200
M12-3G	M12 Y-connector for the connection of Adam OSSD M12-8 with M12-8 cables (in between Y splitters)	2TLA020055R0700
M12-3H	M12 Y-connector for the connection of Adam OSSD M12-8 with M12-5 cables (in between Y splitters)	2TLA020055R0800
M12-3R	Y-connector for connection of a Smile reset button to Orion	2TLA022316R0000
M12-3S	M12 Y-connector for series connection of DYNlink devices with the StatusBus function.	2TLA020055R0600
M12 Safety Seal	Heat shrinking tubes for M12 connectors	2TLA020053R0800
M12 Protection Cap	Protection of an unused M12 male connector from dust	2TLA020055R2100
M12-CT0212	Transfer cable, L=20 cm, 5 x 0.34 mm2 + shield with straight M12-5 female + male connectors. Shield connected to pin3 (0V) on male connector. Can be used for connection of DYNlink devices to Tina 4A/ Tina 8A where the “info-pin” of each M12 connector works like a individual safe signal. Note: Only allowed when connected to a Pluto IQ input.	2TLA020060R0400
M12-CT0214	Transfer cable, L=20 cm, 5 x 0.34 mm2 + shield with straight M12-5 female + male connectors. Shield connected to pin3 (0V) on male connector. Can be used for connection of DYNlink devices to Tina 4A/ Tina 8A where the “info-pin” of each M12 connector works like a individual safe signal. Note: Only allowed when connected to a Pluto IQ input.	2TLA020060R0100
M12-CT132	Transfer cable, L=20 cm, 8 x 0.34 mm2 + shield with straight M12-8 female + M12-5 male connectors. Shield connected to pin7 (0 V) on male connector. Can be used for connection between Dalton to URAX or Tina 4A/Tina 8A.	2TLA020060R0600
M12-CTO1BA	Transfer cable, L=1 m, 8 x 0.34 mm2 + shield with straight M12-5 male + M12-8 female connectors. Shield connected to pin 3 (0V) on male connector. Can be used when connecting Orion 2 Base, Orion 2 Extended and Orion3 Extended to a safe I/O module with 4/5-pole connectors.	2TLA022315R3000
M12-CTO1BM	Transfer cable, L=0.2 m, 8 x 0.34 mm2 + shield with straight M12-8 male + female connectors. Shield connected to pin 7 (0 V) on male connector. Can be used when connecting an Orion 1 Base in auto reset to Tina 10A or Tina 10C.	2TLA022315R3100
M12-C02PT2T	Transmitter cable for Orion 1 Extended, 0.2 m	2TLA022315R0100
M12-C02PT6RB	Receiver cable Blanking Orion 1 Extended, 0.2 m	2TLA022315R0200
M12-C02PT62RM	Receiver cable Muting Orion 1 Extended, 0.2 m	2TLA022315R0300
PT-C005PT	Cascade cable for Orion 1 Extended, 0.05 m	2TLA022315R1200
PT-C05PT	Cascade cable for Orion 1 Extended, 0.5 m	2TLA022315R1100
PT-C1PT	Cascade cable for Orion 1 Extended, 1 m	2TLA022315R1000
M12-CYMUTE	M12 Y-cable for connection of muting sensors to Orion 2 Extended and Orion3 Extended. One M12-8 female connector (#1) for connecting Orion, one M12-8 male connector (#2) for connecting Orion to another equipment and one M12-5 male connector (#3) for connecting the muting sensors (e.g. using OMC1).	2TLA022316R0100
Pluto cable serial	Pluto programming and on-line monitoring cable. For a PC serial port, 9-pole D-sub connector.	2TLA020070R5600
Pluto cable USB	Pluto programming and on-line monitoring cable. For a PC USB port.	2TLA020070R5800
Pluto cable HMI	Cable for connecting a HMI-panel to the Pluto programming port. Connector on HMI-side: 15-pole D-sub. On Pluto side: 90 degrees angled Modbus contact.	2TLA020070R5700
Pluto cable CP400	Cable for connecting HMI-panel ABB CP400 to Pluto programming port. Connector on HMI-side: 9-pole D-sub.	2TLA020070R2400
Pluto cable CP600	Cable for connecting HMI-panel ABB CP600 to Pluto programming port. Connector on HMI-side: 9-pole D-sub.	2TLA020070R2600
PCABLE-050	Bus cable for Pluto safety bus, 2 x 0.75 mm2. 50-meter ring.	2TLA020070R6805
PCABLE-100	Bus cable for Pluto safety bus, 2 x 0.75 mm2. 100-meter ring.	2TLA020070R6810
PCABLE-500	Bus cable for Pluto safety bus, 2 x 0.75 mm2. 500-meter drum.	2TLA020070R6850

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Cables and connectors

Cables and connectors

Accessories ordering table (continued)

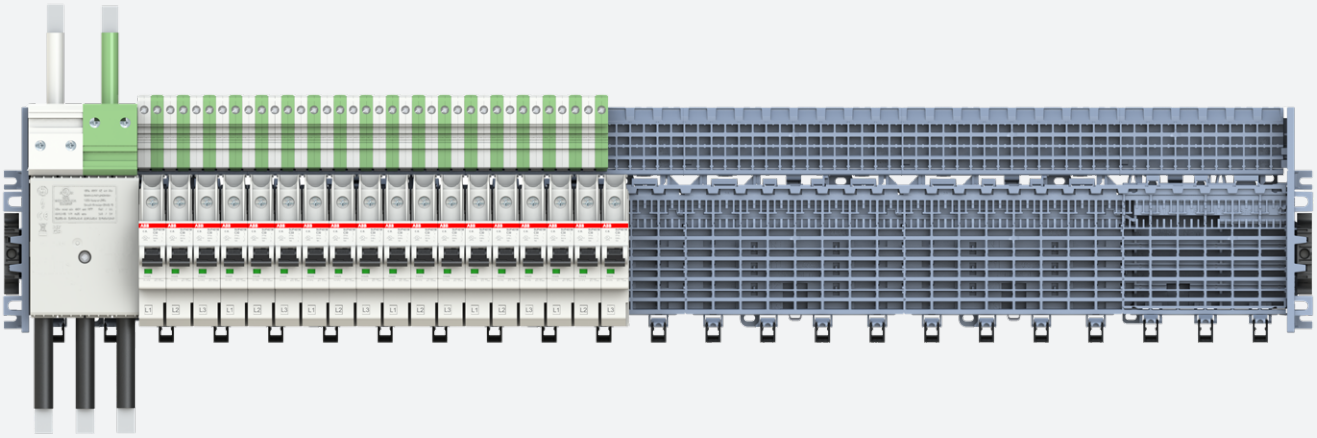
Type	Description	Ordering code
JSHK0	12 pole Cannon female connector for cable mounting.	2TLA020003R0300
JSHK1-C	12 pole Cannon male connector for cabinet mounting.	2TLA020003R0700
JSHK1-B	12 pole Cannon male connector for cable mounting.	2TLA020003R0900
JSHK1-A	12 pole Cannon female connector for cabinet mounting.	2TLA020003R0800
HK5	12 pole Cannon female straight cable, 5m length	2TLA020003R4700
HK10	12 pole Cannon female straight cable, 10m length	2TLA020003R4800
HK20	12 pole Cannon female straight cable, 20m length	2TLA020003R4900
HK16S4	12 pole Cannon female spiral cable, 1.6m length	2TLA020003R5000
HK20S4	12 pole Cannon female spiral cable, 2m length	2TLA020003R5100
HK32S4	12 pole Cannon female spiral cable, 3.2m length	2TLA020003R5200
HK40S4	12 pole Cannon female spiral cable, 4m length	2TLA020003R3500
HK60S4	12 pole Cannon female spiral cable, 6m length	2TLA020003R3600
HK80S4	12 pole Cannon female spiral cable, 8m length	2TLA020003R5300
JSD-TK5-12	5 m cable with M23-12 female connector	2TLA930050R0000
JSD-TK10-12	10 m cable with M23-12 female connector	2TLA930051R0000
M23-SPC12-05/25	0.5/2.5 m spiral cable with M23-12 female connector	2TLA023100R0000
M23-SPC12-10/50	1/5 m spiral cable with M23-12 female connector	2TLA023200R0000
JSD-TK100S-12	10 m spiral cable with M23-12 female connector	2TLA930034R0000
JSD-TK5-19	5 m cable with M23-19 female connector	2TLA930057R0000
JSD-TK10-19	10 m cable with M23-19 female connector	2TLA930058R0000
M23-STC12-0250	25 m cable with M23-19 female connector	2TLA023300R0000
M23-SPC19-05/25	0.5/2.5 m spiral cable with M23-19 female connector	2TLA023400R0000
M23-SPC19-10/50	1/5 m spiral cable with M23-19 female connector	2TLA023500R0000
M12-C51-ASi	5 m unshielded cable with M12-5 female connector	2TLA910093R0000
M12-C251S-ASi	2.5 m unshielded spiral cable with M12-5 female connector	2TLA910094R0000

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Notes

CONTROL SECTION 12

Busbar system



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Section Updated 06/2026

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SMISSLINE TP power bar system 12-4

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SMISSLINE TP power bar system

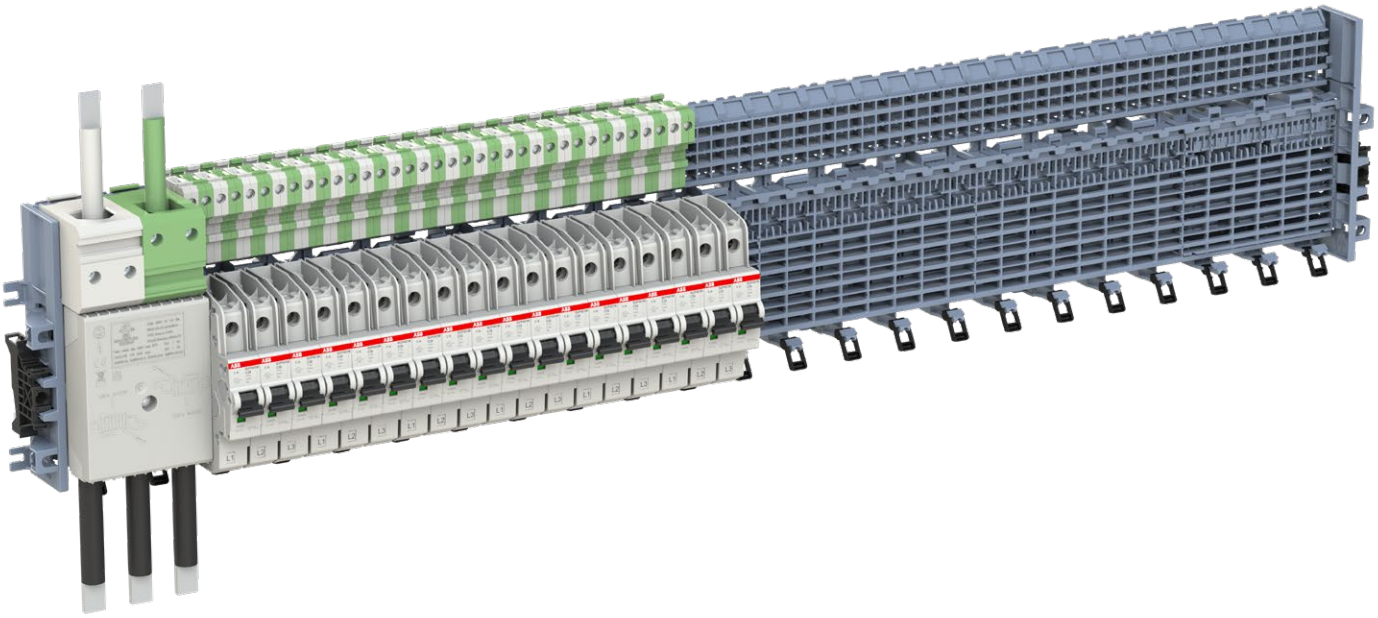
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SMISSLINE TP power bar system

Product overview



SMISSLINE TP power bar system

- Busbar system, contact rails max. 125 A; incoming system with max. 250 A and power bar system contact rails max. 250 A; incoming system with max. 400 A
- Miniature circuit breakers available in 1-, 2-, 3- and 4-pole options
- Lateral power supply with 250 A for IEC 61439-6 and UL 508 applications; the additional socket is not UL-approved
- Power supply solution with threaded connection for a ring lug up to 150 mm^2
- Safe and strong option for connection to power supply circuit breaker
- Practice-oriented set-up and connection in distribution systems for vertical or horizontal applications
- Simple and quick assembly
- Devices can be arranged on the system in any order
- Systems set up vertically and in parallel: each with one power supply
- A wide range of accessories are available to meet design requirements

SMISSLINE TP at a glance

- **Safe** — IP20 touch-safe design for reliable maintenance
- **Flexible** — Rapid replacement, easy expansion and mixed-pole layout possible
- **Economical** — Saves time and space thanks to plug-in technology

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Miniature circuit breaker (MCB) for UL 489

SUP400 series technical features

			SUP400M
General data	Standards		UL 489 CSA 22.2 No. 5
	Number of poles		1P, 2P, 3P
	Tripping characteristics		C, K
	Rated current I_n	A	2 … 40 A
	Rated frequency f	Hz	50 / 60 Hz
	Rated insulation voltage U_i acc. toIEC/EN 60664-1	V	440 V AC (240/415 V AC) 500 V AC (277/480 V AC)
	Overvoltage category		III
	Pollution degree		3 (240/415 V AC) 2 (277/480 V AC)
Data acc. to IEC/EN 60947-2	Rated operational voltage U_e	V	1P, 1P+NP: 240 V AC, 277 V AC 2P, 3P, 3P+NP: 240/415 V AC, 277/480 V AC
	Max. power frequency recovery voltage (U_{max})	V	
	Min. operating voltage	V	12 V AC – 12 V DC
	Rated ultimate short-circuit breaking capacity I_{cu}	kA	40 kA (2 … 16 A, 240/415 V AC) 30 kA (20 … 40 A, 240/415 V AC) 20 kA (50 … 63 A, 240/415 V AC) 20 kA (2 … 16 A, 277/480 V AC) 15 kA (20 … 40 A, 277/480 V AC) 5 kA (50 … 63 A, 277/480 V AC)
	Rated service short-circuit breaking capacity I_{cs}	kA	20 kA (2 … 16 A, 240/415 V AC) 15 kA (20 … 40 A, 240/415 V AC) 7.5 kA (50 …. 63 A, 240/415 V AC) 40 kA (2 … 16 A, 277/480 V AC) 5 kA (20 … 40 A, 277/480 V AC) 2.5 kA (50 … 63 A, 277/480 V AC)
	Rated impulse withstand voltage U_{imp}. (1.2/50 µs)	kV	4 kV
	Dielectric test voltage at ind. freq. for 1 min.	kV	
	Reference temperature for tripping characteristics	°C	40°C
	Electrical endurance	cycles (OFF-ON-OFF)	10,000 ops
Data acc. to UL 489 / CSA 22.2 No. 5	Rated voltage	V	1P: 60 V DC, 277 V AC 2P: 125 V DC, 480Y/277 V AC 3P: 480Y/277 V AC
	Application		
	Reference temperature for tripping characteristics	°C	40°C
	Electrical endurance	cycles (OFF-ON-OFF)	10,000 ops
Mechanical data	Housing		Insulation group I, light grey
	Toggle		Insulation group II, black, sealable
	Mechanical endurance	cycles (OFF-ON-OFF)	20,000 ops
	Contact position indication (CPI)		green OFF / red ON
	Protection degree acc. to EN 60529		IP20, IP40 in enclosure with cover
	Shock resistance acc. to IEC/EN 61373		Category 1, Class B
	Shock resistance acc. to IEC/EN 60068-2-27 (Test Ea)		5 g / 30 ms
	Vibration resistance acc. to IEC/EN 60068-2-6 (Test Fc)		5…13.2 Hz / 1 mm 13.2 …100 Hz / 0.7 g with load 80% x Ie
	Environmental conditions (damp heat) acc. toIEC/EN 60068-2-30	°C / RH	28 cycles with 55°C / 90…96% and 25°C / 95…100%
	Ambient temperature	°C	-40 … +70°C
	Storage temperature	°C	-40 … +70°C

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Miniature circuit breaker (MCB) for UL 489

SUP400 series technical features

				SUP400M
Installation	Terminal type			Fail-safe bi-directional cylinder-lift terminal (shock-protected) with double slot 35/10 mm²
	Cross-section of conductors (top/bottom)	Solid/ Stranded	mm²	Single: 0.75 ÷ 35 mm² (front slot), 0.75 ÷ 6 mm² (rear slot) Multiple: 2x 0.75 ÷ 10 mm² (front slot), 2x 0.75 ÷ 6 mm² (rear slot), with cables of same type and size
		Flexible	mm²	Single: 0.75 ÷ 25 mm² (front side), 0.75 ÷ 6 mm² (rear slot) Multiple: 2x 0.75 ÷ 10 mm² (front slot), 2x 0.75 ÷ 6 mm² (rear slot), with cables of same type and size
			AWG	AWG 14 ... 8
	Cross-section of busbars (top/bottom)		mm²	
			AWG	
	Tightening torque		Nm	2.8 Nm
			in-lbs	
	Wire stripping length		mm	12.5 mm
	Screwdriver			No. 2 Pozidrive
	Mounting			SMISSLINE TP busbars system only
	Mounting position			Any
	Supply			Any
Dimensions and weight	Mounting dimensions acc. to DIN 43880			
	Pole dimensions (H x D x W)		mm	100 x 18 x 82 mm
	Pole weight		g	Approx. 120 g
Combination with auxiliary elements	Auxiliary contact			Yes
	Auxiliary/signal contact			No
	Bottom fitting auxiliary contact			No
	Shunt trip			No
	Undervoltage release			No
	Overvoltage release			No
	Motor operating device			No
	Auto-reclosing unit			No

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Miniature circuit breaker (MCB) for UL 489

SUP400 C for branch circuit protection acc. to UL 489 File E312425













Ordering table

Number of poles	Rated current I_n A	Bbn 761227 EAN	Ordering details Type code	Ordering details Ordering code	Weight 1 piece kg	Pack unit pc.
1	2	1520809	SUP401M-C2	2CCG001611R0001	0.120	10
	3	1520816	SUP401M-C3	2CCG001612R0001	0.120	10
	4	1520823	SUP401M-C4	2CCG001613R0001	0.120	10
	5	1520830	SUP401M-C5	2CCG001614R0001	0.120	10
	6	1520847	SUP401M-C6	2CCG001615R0001	0.120	10
	8	1520854	SUP401M-C8	2CCG001616R0001	0.120	10
	10	1520861	SUP401M-C10	2CCG001617R0001	0.120	10
	13	1520878	SUP401M-C13	2CCG001618R0001	0.120	10
	15	1520885	SUP401M-C15	2CCG001619R0001	0.120	10
	16	1520892	SUP401M-C16	2CCG001620R0001	0.120	10
	20	1520908	SUP401M-C20	2CCG001621R0001	0.120	10
	25	1520915	SUP401M-C25	2CCG001622R0001	0.120	10
	30	1520922	SUP401M-C30	2CCG001623R0001	0.120	10
	35	1520939	SUP401M-C35	2CCG001624R0001	0.120	10
	40	1520731	SUP401M-C40	2CCG001604R0001	0.120	10
2	2	1520953	SUP402M-C2	2CCG001626R0001	0.240	5
	3	1520960	SUP402M-C3	2CCG001627R0001	0.240	5
	4	1520977	SUP402M-C4	2CCG001628R0001	0.240	5
	5	1520984	SUP402M-C5	2CCG001629R0001	0.240	5
	6	1520991	SUP402M-C6	2CCG001630R0001	0.240	5
	8	1521004	SUP402M-C8	2CCG001631R0001	0.240	5
	10	1521011	SUP402M-C10	2CCG001632R0001	0.240	5
	13	1521028	SUP402M-C13	2CCG001633R0001	0.240	5
	15	1521035	SUP402M-C15	2CCG001634R0001	0.240	5
	16	1521042	SUP402M-C16	2CCG001635R0001	0.240	5
	20	1521059	SUP402M-C20	2CCG001636R0001	0.240	5
	25	1521066	SUP402M-C25	2CCG001637R0001	0.240	5
	30	1521073	SUP402M-C30	2CCG001638R0001	0.240	5
	35	1521080	SUP402M-C35	2CCG001639R0001	0.240	5
	40	1520748	SUP402M-C40	2CCG001605R0001	0.240	5
3	2	1521103	SUP403M-C2	2CCG001641R0001	0.360	3
	3	1521110	SUP403M-C3	2CCG001642R0001	0.360	3
	4	1521127	SUP403M-C4	2CCG001643R0001	0.360	3
	5	1521134	SUP403M-C5	2CCG001644R0001	0.360	3
	6	1521141	SUP403M-C6	2CCG001645R0001	0.360	3
	8	1521158	SUP403M-C8	2CCG001646R0001	0.360	3
	10	1521165	SUP403M-C10	2CCG001647R0001	0.360	3
	13	1521172	SUP403M-C13	2CCG001648R0001	0.360	3
	15	1521189	SUP403M-C15	2CCG001649R0001	0.360	3
	16	1521196	SUP403M-C16	2CCG001650R0001	0.360	3
	20	1521202	SUP403M-C20	2CCG001651R0001	0.360	3
	25	1521219	SUP403M-C25	2CCG001652R0001	0.360	3
	30	1521226	SUP403M-C30	2CCG001653R0001	0.360	3
	35	1521233	SUP403M-C35	2CCG001654R0001	0.360	3
	40	1520755	SUP403M-C40	2CCG001606R0001	0.360	3

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Miniature circuit breaker (MCB) SUP400

SUP400 for branch circuit protection acc. to UL 489 File E312425

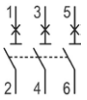












Ordering table

I_n [A]	Type	Ordering code	EAN number 761 227	Pkg. qty.	Module	Weight in grams
2	SUP401M-K2	2CCG000142R0001	1506759	10	1	120
3	SUP401M-K3	2CCG000143R0001	1506766	10	1	120
4	SUP401M-K4	2CCG000144R0001	1506773	10	1	120
5	SUP401M-K5	2CCG000153R0001	1506865	10	1	120
6	SUP401M-K6	2CCG000145R0001	1506780	10	1	120
8	SUP401M-K8	2CCG000146R0001	1506797	10	1	120
10	SUP401M-K10	2CCG000147R0001	1506803	10	1	120
13	SUP401M-K13	2CCG000148R0001	1506810	10	1	120
15	SUP401M-K15	2CCG000154R0001	1506872	10	1	120
16	SUP401M-K16	2CCG000149R0001	1506827	10	1	120
20	SUP401M-K20	2CCG000150R0001	1506834	10	1	120
25	SUP401M-K25	2CCG000151R0001	1506841	10	1	120
30	SUP401M-K30	2CCG000152R0001	1506858	10	1	120
35	SUP401M-K35	2CCG001141R0001	1516109	10	1	120
2	SUP402M-K2	2CCG000106R0001	1506384	5	2	240
3	SUP402M-K3	2CCG000107R0001	1506391	5	2	240
4	SUP402M-K4	2CCG000108R0001	1506506	5	2	240
5	SUP402M-K5	2CCG000117R0001	1506599	5	2	240
6	SUP402M-K6	2CCG000109R0001	1506513	5	2	240
8	SUP402M-K8	2CCG000110R0001	1506520	5	2	240
10	SUP402M-K10	2CCG000111R0001	1506537	5	2	240
13	SUP402M-K13	2CCG000112R0001	1506544	5	2	240
15	SUP402M-K15	2CCG000118R0001	1506605	5	2	240
16	SUP402M-K16	2CCG000113R0001	1506551	5	2	240
20	SUP402M-K20	2CCG000114R0001	1506568	5	2	240
25	SUP402M-K25	2CCG000115R0001	1506575	5	2	240
30	SUP402M-K30	2CCG000116R0001	1506582	5	2	240
35	SUP402M-K35	2CCG001142R0001	1516116	5	2	240
2	SUP403M-K2	2CCG000119R0001	1506612	3	3	360
3	SUP403M-K3	2CCG000120R0001	1506629	3	3	360
4	SUP403M-K4	2CCG000121R0001	1506636	3	3	360
5	SUP403M-K5	2CCG000130R0001	1506728	3	3	360
6	SUP403M-K6	2CCG000122R0001	1506643	3	3	360
8	SUP403M-K8	2CCG000123R0001	1506650	3	3	360
10	SUP403M-K10	2CCG000124R0001	1506667	3	3	360
13	SUP403M-K13	2CCG000125R0001	1506674	3	3	360
15	SUP403M-K15	2CCG000131R0001	1506735	3	3	360
16	SUP403M-K16	2CCG000126R0001	1506681	3	3	360
20	SUP403M-K20	2CCG000127R0001	1506698	3	3	360
25	SUP403M-K25	2CCG000128R0001	1506704	3	3	360
30	SUP403M-K30	2CCG000129R0001	1506711	3	3	360
35	SUP403M-K35	2CCG001143R0001	1516123	3	3	360

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Miniature circuit breaker (MCB) SUP400

Auxiliary and signal contacts



Auxiliary switch

	Type name	Ordering code	EAN number	Pkg. qty.	Module	Weight in grams
Auxiliary switch for right side mounting						
Changeover contact	S2C-H6RU	2CDS200914R0001	401 677 961 5617	1	0.5	6
Signal switch for right side mounting						
Changeover contact	S2C-S6RU	2CDS200924R0001	401 677 961 5624	1	0.5	6
Dummy housing compensation to 18 mm						
	E210-DHR	2CCA703488R0001	761 227 144 1708	1	0.5	18

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Busbar system 125 A

Technical data UL508; Approvals for US and CA: cULus

SMISSLINE TP system for UL 508 – Industrial Control Equipment, CSA C22.2 No. 14 – Industrial Control Equipment UL file E222110

Technical data UL 508 Industrial Control Equipment SMISSLINE TP busbar system	
Rated voltage	600 VAC, 125 V DC
Rated current	125 A
Rated current (end feed, left and right)	125 A left, 125 A right
Rated current (center)	250 A max. (double feed)
Rated current (center feed)	250 A max. if used with two feeder blocks
Short circuit ratings Tmax® XT series up to 250 A	50 kA, max. 480 VAC, 480 Y/277 V and 240 VAC or 35 kA, max. 600 VAC and 600 Y/347 V

Technical data UL 508 Industrial Control Equipment (ZLS906,ZLS908,ZLS920,ZLS926,ZLS928)

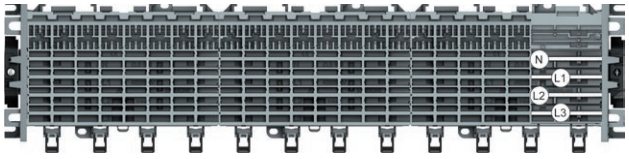
	Busbar ZLS200	**Feeder ZLS924**	**Feeder block ZLS95X**	**DIN rail adapter ZLS97X**	**Terminals ZLS95XUL, 91XUL**	**Combi module ZMS132X**	**Adapter motor starter ZMS93X**
Maximum rated voltage	600 VAC	600 VAC	600 VAC	600 VAC	600 VAC	600 VAC	600 VAC
Maximum rated current	125 A	150 A	150 A	32 A, 63 A	32 A, 100 A, 150 A	32 A	32 A

Terminals for 125 A SMISSLINE TP system
ZLS954UL – Terminal 150 A (neutral)
ZLS959UL – Terminal (PE)
ZLS913UL – Terminal 63 A (neutral)
ZLS918UL – Terminal 32 A (neutral)
ZLS919UL – Terminal (PE)
ZLS929UL – Terminal (PE)

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Busbar system 125 A

Starter pack touch-proof 3LN



Starter pack 3LN: L1, L2, L3, N including socket end piece

Solutions available	Busbar length incl. socket end piece mm	Busbar length mm	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Weight in grams
28 PLE 3LN	545	501	ZLS905E28-3LN	2CCA183109R0001	141 3422	1	970
36 PLE 3LN	689	645	ZLS905E36-3LN	2CCA183117R0001	141 3507	1	1257
42 PLE 3LN	797	753	ZLS905E42-3LN	2CCA183123R0001	141 3569	1	1459
72 PLE 3LN	1338	1294	ZLS905E72-3LN	2CCA183153R0001	141 3866	1	2453

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Busbar system 125 A

Additional socket touch-proof



Additional socket

The additional socket can easily be fitted onto the socket base to accommodate the external N and/or PE busbars. This enables neutral connections to be made where single-pole miniature circuit breakers are used with unswitched neutral.

Neutral terminals are clipped onto the additional socket and can be used as detachable neutral connections. One N busbar and/or one PE busbar can be fitted. Each socket base can be equipped with an additional socket.

Additional socket for external N and PE busbars

	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
– 8-module socket (suitable for 8-module socket)	ZLS928	2CCA183630R0001	142 0444	10	8	34
– 6-module socket (suitable for 6-module socket)	ZLS926	2CCA183635R0001	142 0437	10	6	26

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Incoming devices and terminals

Technical data UL 508

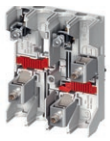
Incoming blocks

	ZLS924
General data	
Rated voltage acc. UL	600 V AC
Rated current In acc. UL	150 A
Rated conditional short-circuit current (I_{cc})	100 kA (415 V), 50 kA (690 V)
Installation	
Terminal rigid UL connections	Single: 8 up to 1/0 AWG, Cu only Multiple: —
Torque	4.0 Nm (L, N); 1.2 Nm cover screw
Stripping length	18 mm (L, N)

The 63 A and 160 A incoming terminal block can be used for the 125 A or the 250 A system.



ZLS924



ZLS924

Incoming terminal block incl. cover

	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Incoming terminal block incl. cover						
3L left	ZLS924-3L	2CCF181816R0001	150 3086	1	4	140
3L+N left	ZLS924-3LN	2CCF181818R0001	150 3093	1	4	168



Terminals for incoming block

	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Terminal L	ZLS936	2CCF181805R0001	150 3147	1	–	28

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For 125 A system (use on ZLS926/928)

Terminal range UL for additional sockets



N terminal for additional sockets, light gray, for external busbars						
	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
8 AWG	ZLS918UL	2CCA183446R0001	149 3301	1	0.5	11
2 AWG	ZLS913UL	2CCA183398R0001	148 6945	1	1	30
3/0 AWG	ZLS954UL	2CCA672511R0001	148 7188	1	2	88



PE terminal for additional sockets, gray-green, for external busbars						
8 AWG	ZLS919UL	2CCA183447R0001	148 7140	1	0.5	11
2 AWG	ZLS929UL	2CCA183399R0001	148 6969	1	1	30
3/0 AWG	ZLS959UL	2CCA672512R0001	148 7201	1	2	88



Insulator block

The dark gray insulator block isolates the interrupted busbar ends from one another and simultaneously marks the disconnection point externally.

Insulator block for additional sockets						
	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Dark gray, to isolate the N busbar on the additional socket	ZLS927	2CCA183442R0001	148 7065	1	0.5	9

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Socket accessories

These accessories can be used on either the 125 A or 250 A busbar systems.



Intermediate piece

	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Light gray, fills shock-proof empty module spaces 18 mm – bag containing 5 items	ZLS725	2CCS500900R0181	010 0989	1	1	100
Compensation piece to 18 mm for NT 9 mm – bag containing 5 items	ZLS728	2CCS400900R0101	010 4710	1	1	70



Busbar insulator

Dark grey for isolation and spacing of separate busbar sections, 18 mm	ZLS938	2CCA205611R0001	141 8205	1	1	1



Busbar cover

Electrically protected covering of main and auxiliary busbars. The 4-module cover can be divided. Suitable to accept extension adapter ZLS 101 4x18 mm – bag containing 5 items	ZLS100	2CCF002762R0001	001 5603	1	1	95



Add-on adapter

18 mm wide, can be plugged on busbar cover ZLS100. To mount conventional DIN devices with 45 mm cap size. – bag containing 10 items	ZLS101	2CCF002763R0001	001 5610	10	1	2



Locking device for SUP400

Padlock adapter 3 mm – Bag containing 10 items	SA 1	GJF1101903R0001	010 4833	1	–	23
Padlock set (locking devices with 2 keys)	SA 2	GJF1101903R0002	010 4857	1	–	20

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Combi module 32 A (I_N), 6 A (I_A, I_B)

MS116/132 + AF contactor



Combi module for MS116/MS132 and AF contactor
Motor starter MS116/132 and AF contactors are not part of this section.

Designation	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Combi module L1, L2, L3 top feed	ZMS132-3L	2CCA182500R0001	1414641	1	2,5	95
Combi module L1, L2, L3 bottom feed	ZMS132-3LWB	2CCF182543R0001	150 3208	1		105



Bottom feed

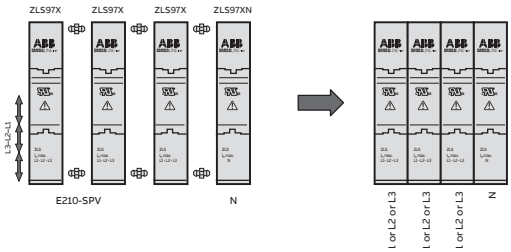
Adapter for manual motor starter MS116 and MS132

Designation	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Adapter MS116/132 L123 wire bottom feed	ZMS930	2CCA182520R0001	141 4597	1	2,5	30
Adapter MS116/132 L123 wire top feed	ZMS932	2CCA182524R0001	141 4573	1	2,5	30
Adapter for AF contactor no wires	ZMS938	2CCA182510R0001	141 4542	1		34

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DIN adapters

IEC and UL 508 32 A, 63 A



Strand length — Bottom:
N: 68 mm
L1: 100 mm
L2: 114 mm
L3: 126 mm

ZLS97X Top:
N: 86 mm
L1: 94 mm
L2: 80 mm
L3: 88 mm

The multi-pole universal adapter can plugged together with single adapters and connection piece E210SPV.

If you require lengths near the longer limits, please add 20 mm (ferrule length).



DIN adapters 32 A and 63 A, EN/IEC 61439-6 or UL 508
Adapters can be used on either the 125 A or 250 A busbar systems.

Designation	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Adapter 32 A						
L1 or L2 or L3 wire top	ZLS970	2CCA180551R0001	144 4563	10	1	20
L1 or L2 or L3 wire bottom	ZLS971	2CCA180552R0001	144 4570	10	1	20
N wire top	ZLS970N	2CCA180553R0001	144 4587	10	1	20
Adapter 63 A						
L1 or L2 or L3 wire top	ZLS972	2CCA180555R0001	144 4709	10	1	24
L1 or L2 or L3 wire bottom	ZLS973	2CCA180556R0001	144 4716	10	1	24
N wire top	ZLS972N	2CCA180557R0001	144 4723	10	1	24

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Adapters for MCB SU200 and SUP200

UL 489 25 A, 45 A; circuit breaker accessories E257901



Adapters

Adapters can be used on either the 125A or 250A busbar systems.

Designation	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
Adapter 25 A UL 489 (only for use with ABB MCB SU200 and SUP200)						
L1 or L2 or L3 wire top	ZLS970UL	2CCA337020R0001	144 4822	10	1	21
L1 or L2 or L3 wire bottom	ZLS971UL	2CCA337021R0001	144 4839	10	1	21
Adapter 45 A UL 489 (only for use with ABB MCB SU200 and SUP200)						
L1 or L2 or L3 wire top	ZLS972UL	2CCA337024R0001	144 4860	10	1	25
L1 or L2 or L3 wire bottom	ZLS973UL	2CCA337025R0001	144 4877	10	1	25

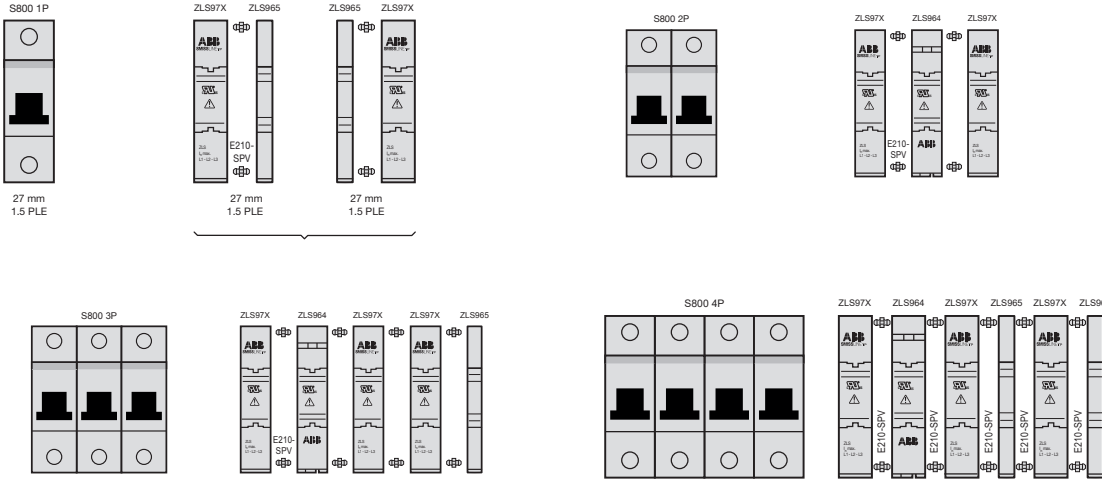
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Adapter for S800

27 mm wide solution for S800

Simple mounting of the S800 MCB on SMISSLINE TP system with 27 mm wide DIN rail adapter.

Assembly to plug-in socket system with DIN rail adapter and S800. Maximum rated current of outgoing circuits (I_{nc}) max. 50 A for S800 with ZLS972X, ZLS973X.





Designation	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Modules	Weight in grams
9 mm wide	ZLS965	2CCA180545R1001	150 1440	Set of 5	0.5	5

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Power bar system 250 A

Technical data UL 508; approvals for US and CA: cULus

SMISSLINE TP system for UL 508 – Industrial Control Equipment, CSA C22.2 No. 14 – Industrial Control Equipment UL File E222110

Rated voltage	600 V AC, 125 V DC
Rated current	250 A left or right
Short circuit ratings ABB Tmax® XT2, XT4	50 kA, max. 480 V AC, 480 Y/277 V and 240 V AC or 35 kA, max. 600 V AC and 600 Y/347 V

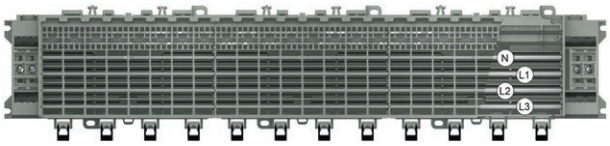
Technical data UL508 Industrial Control Equipment (ZLSP906, ZLSP908,ZLSP920)

	Busbar ZLSP200	Feeder ZLSP934	Feeder block ZLS95X	DIN rail adapter ZLS97X	Terminals ZLS95XUL, 91XUL	Combi module ZMS132X	Motor starter adapter ZMS93X
Maximum rated voltage	600 V AC	600 V AC	600 V AC	600 V AC	600 V AC	600 V AC	600 V AC
Maximum rated current	250 A	250 A	150 A	32 A, 63 A	32 A, 100 A, 150 A	32 A	32 A

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Power bar system 250 A

Starter pack touch-proof 3LN



Starter pack 3LN: L1, L2, L3 including socket end piece

Solutions available	Busbar length incl. socket end piece mm	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Weight in grams
36 modules 3LN	715	ZLSP950E36-3LN	2CCF212303A0001	1489120	1	2527
42 modules 3LN	823	ZLSP950E42-3LN	2CCF212306A0001	1489182	1	2933
56 modules 3LN	1075	ZLSP950E56-3LN	2CCF212313A0001	1489328	1	3866
80 modules 3LN	1507	ZLSP950E80-3LN	2CCF212325A0001	1489564	1	5478

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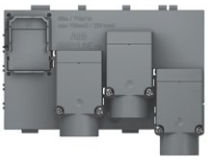
Power bar system 250 A socket system

Incoming bolt-on 250 A

Technical data IEC/EN 61439-6 and UL 508



ZLSP934-3LN



ZLSP934-3L-1

	ZLSP934
Standards	IEC/EN 61439-6 and UL 508
Rated voltage Ue acc. IEC acc. IEC	690 V AC
Rated Voltage acc. UL	600 V AC
Rated current In acc.. IEC	250 A (center feed or side feed): 400 A max. when used with two feeder blocks
Rated current In acc. UL	250 A (short circuit protection 250 A circuit breaker (DIVQ/7) 50 kA (480 V); 35 kA (600 V)
Wire size IEC connections	Cable: 50 mm² up to 150 mm²; no flat cable ring lug M8 (for example, Klauke 9SG8 for 120 mm² or 10SG8 for 150 mm²)
Wire size UL connections	4/0 AWG – 250 kcmil
Torque	8 Nm cover 1,2 Nm
Stripping length	Ring lug M8; width: max. 22 mm

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Power bar system 250 A socket system

Additional socket



ZLSP928



ZLSP926

Additional socket

The additional socket can easily be fitted onto the socket base to accommodate the external N and/or PE busbars. This enables neutral connections to be made where single-pole miniature circuit breakers are used with unswitched neutral. Neutral terminals are clipped onto the additional socket and can be used as detachable neutral connections. One N busbar and/or one PE busbar can be fitted. Each socket base can be equipped with an additional socket.

Additional socket for external N and PE busbars

Description	Bbn 761227 EAN	Ordering details Type code	Ordering details Ordering code	Pack unit	Module (1 PLE 18 mm)	Weight 1 piece kg
– 8-module socket (suitable for 8-module socket)	1487348	ZLSP928	2CCF212060A0001	10	8	0.67
– 6-module socket (suitable for 6-module socket)	1487362	ZLSP926	2CCF212061A0001	10	6	0.53



ZLS938

Busbar insulator

Description	Bbn 761227 EAN	Ordering details Type code	Ordering details Ordering code	Pack unit	Module (1 PLE 18 mm)	Weight 1 piece kg
Dark gray, 20 for isolation and spacing of separate busbar sections, 18 mm	148205	ZLS938	2CCA205611R0001	1	1	0.1



ZLS100

Busbar cover

Description	Bbn 761227 EAN	Ordering details Type code	Ordering details Ordering code	Pack unit	Module (1 PLE 18 mm)	Weight 1 piece kg
Electrically protected covering of main and auxiliary busbars. The 4 modules cover can be divided. Suitable to accept extension adapter ZLS 101 4x18 mm – bag containing 5 items	0015603	ZLS100	2CCF002762R0001	1	1	0.95



ZLSP937

DIN rail clip

Description	Bbn 761227 EAN	Ordering details Type code	Ordering details Ordering code	Pack unit	Module (1 PLE 18 mm)	Weight 1 piece kg
DIN rail clip ZLSP926 and ZLSP928. This item is need if the additional socket will be mounted on a DIN rail. 1 pcs. every 30 cm.	498306	ZLSP937	2CCA212012R0001	Bag of 5		0.18

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Busbar system 250 A

Direct-feed use with Tmax® XT4 plug-in version only
Technical data according to UL 508



The direct-feed starter pack solution allows a direct connection from the 250 A power bar system to the installation for plug-in circuit-breaker Tmax® XT4 molded case circuit breaker. Lower part for plug-in for Tmax XT4, 3-pole (1SDA068196R1) or 4-pole (1SDA068198R1) is required.

For fixed Tmax XT4 version, a conversion kit for moving part plug-in is also needed, 3-pole (1SDA066282R1) and 4-pole (SDA066283R1).

The solution is built for a vertical design. The additional heat sink component is helpful to reduce heat on the system.

Direct feed 250 A busbar system touch-proof
Use only for wall-mounted application (horizontal or vertical). When installed correctly, meets the requirements of EN/IEC 61439-2.

Number of poles	32 to 80 3P+N, additional socket N and PE
Rated operational voltage (U_e)	277/480 V AC
Rated insulation voltage (U_i)	690 V AC, 440 V DC
IP code	IP20B
Pollution degree	3 (690 V AC), 2 (1000 V DC)
Rated impulse voltage (U_{imp})	8 kV (L1, L2, L3N)
Rated current of the assembly (I_{nA})	250 A
Rated current of a circuit (I_{nc}): main circuit	250 A max.
Rated current of auxiliary circuit	40 A
Rated short-time withstand current (I_{cw})	15 kA/100 ms main circuit, 4 kA/50 ms auxiliary circuit
Rated peak withstand current main circuit (I_{pk})	30 kA
Rated peak withstand current auxiliary circuit (I_{pk})	6 kA
Rated frequency (f)	50/60 Hz
Rated conditional short-circuit current (I_{cc}):	See table below
Ambient air temperature	60 °C max.
Size of Cu bars 3P+N+PE	3 x 25 mm (75 mm²)
Size of Cu auxiliary bars La Lb	2 x 5 mm (10 mm²)
Environmental conditions (damp heat)	1 cycle with 55 °C/90…96 % and 25 °C/95…100 %
Ambient temperature	-13….+140°F
Storage temperature	-40….+158°F

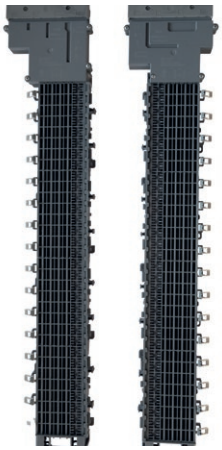
Technical data UL 508; approvals for US and CA: cULus direct feed 250 A

SMISSLINE TP system for UL 508 – Industrial Control Equipment, CSA C22.2 No. 14 – Industrial Control Equipment UL File E222110	**Control Equipment UL File E222110**
UL rated voltage	600 V AC
UL rated current (end feed)	250 A
UL short circuit rating	50 kA (480 V), 35 kA (600 V) with Tmax® XT4 250 A

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Busbar system 250 A

Direct-feed touch-proof 3L and 3LN



For the first 12 module positions close to the Tmax® XT4 circuit breaker, a derating of 0.76 shall be applied. For other modules, the derating is according the data from the technical catalog for MCB, RCD and RCBOs. The specific deratings of devices for influence of adjacent poles and ambient temperature must still be carefully considered in any case.

Ordering data

Solutions available	Direct-feed length incl. socket end piece mm	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Weight in grams
32PLE 3LN left	742	ZLSP960-3LN-32-L	2CCG000156R0001	150 7039	1	4258
32PLE 3LN right	742	ZLSP960-3LN-32-R	2CCG000158R0001	150 7053	1	4258
56PLE 3LN left	1174	ZLSP960-3LN-56-L	2CCG000168R0001	150 7152	1	5871
56PLE 3LN right	1174	ZLSP960-3LN-56-R	2CCG000170R0001	150 7176	1	5871
80PLE 3LN left	1606	ZLSP960-3LN-80-R	2CCG000204R0001	1507510	1	7483
80PLE 3LN right	1606	ZLSP960-3LN-80-L	2CCG000206R0001	1507534	1	7483

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Busbar system 250 A

Direct-feed touch-proof 3L and 3LN and accessories







For the first 12 module positions close to the Tmax® XT4 circuit breaker, a derating of 0.76 shall be applied. For other modules, the derating is according the data from the technical catalog for MCB, RCD and RCBOs. The specific deratings of devices for influence of adjacent poles and ambient temperature must still be carefully considered in any case.

Accessories

Solutions available	Type name	Ordering code	EAN number 761 227	Pkg. qty.	Weight in grams
Heat sink 3L	ZLSP960HS-3L	2CCG000736R0001	151 2446	1	197
Heat sink 3LN	ZLSP960HS-3LN	2CCG000739R0001	151 2453	1	262
Screws (for replacement only; all required screws are included in direct feed)	ZLSP960screw	2CCG000361R0001	150 8401		55

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Busbar system 250 A

Dual feeder use cases



3LN XT4 no N no additional socket, top fitting

Solutions available	EAN number 761227	Type name	Ordering code	Weight 1 piece kg	Pack unit
Plug-in Tmax XT4 molded case+ plug-in base 3 pole (1SDA068196R1) +bar system 250 A starter pack	1519629	ZLSP940-3LN1 top	2CCG001481R0001	1.35	1



3LN XT4 no N no additional socket, bottom fitting

Solutions available	EAN number 761227	Type name	Ordering code	Weight 1 piece kg	Pack unit
Plug-in Tmax XT4 molded case+ plug-in base 3 pole (1SDA068196R1)	519650	ZLSP940-3LN1 bottom	2CCG001484R0001	1.659	1

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Busbar system 250 A

Technical and order data

250 A

Number of poles	30 to 110 3p+N / 2 additional bars PE+N
Rated operational voltage (U_e)	277/480 V AC
Rated insulation voltage (U_i)	690 V AC
IP Code	IP20B IP
Pollution degree	3 (415 V AC)
Rated impulse voltage (U_{imp})	8 kV main busbars
Rated current of the assembly (I_{nA})	250 A
Rated current of a circuit (I_{nc}): main circuit	Max. 250 A
Rated current of auxiliary circuit	40 A
Rated short-time withstand current (I_{cw})	15 kA/100 ms main circuit, 4 kA/50 ms auxiliary circuit
Rated peak withstand current Main circuit (I_{pk})	30 kA
Rated peak withstand current Auxiliary circuit (I_{pk})	6 kA
Rated frequency (f)	50/60 Hz
Rated conditional short-circuit current (I_{cc})	see table below
Ambient air temperature	60 °C
Size of CU bars 3P+N+PE	3 x25 mm (75 mm²)
Size of CU auxiliary bars La Lb	2 x 5 mm (10 mm²)
Environmental conditions (damp heat)	2 cycles with 55 °C/90–96 % and 25 °C/95–100 % acc. to IEC/EN 60068-2-30
Tightening torque	8 Nm, Cover 1,2 Nm
Ambient temperature	-13....+140°F
Storage temperature	-40....+158°F

IEC	Rated conditional short-circuit current (I_{cc})	Voltage (V AC)	Rated conditional short-circuit current (I_{cc})	Incoming current of main busbars (L1, L2, L3, N)	Short circuit protection device (SCPD)
		415 V	50 kA	250 A	ABB Tmax XT4 250 A

Technical data UL 508; Approvals for US and CA: cULus direct feed 250 A

SMISSLINE TP system for UL 508 – Industrial Control Equipment, CSA C22.2 No. 14 – Industrial Control Equipment UL File E222110	Control Equipment UL File E222110
UL rated voltage	600 V AC
UL rated current (end feed)	250 A
UL short circuit rating	50 kA (480 V), 35 kA (600 V) with XT4 250 A

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Notes

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