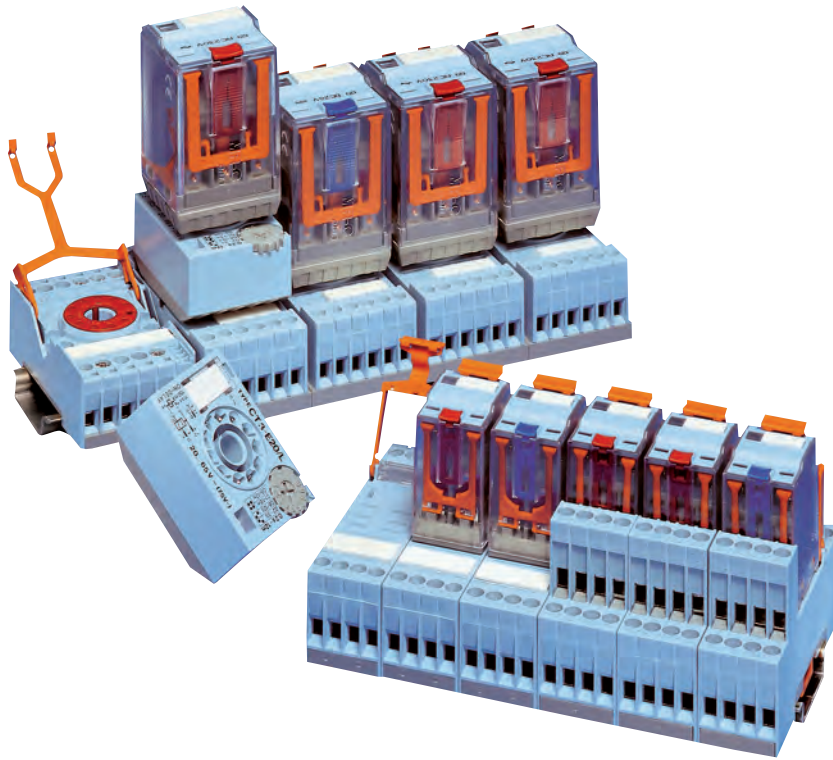


TURCK
works



RELAYS

RELECO
by **TURCK**

.....Sense It!.....Connect It!.....Bus It!.....Solve It!™

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

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TURCK

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PROXIMITY SENSORS



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MEASUREMENT



RFID



INTERFACE MODULES



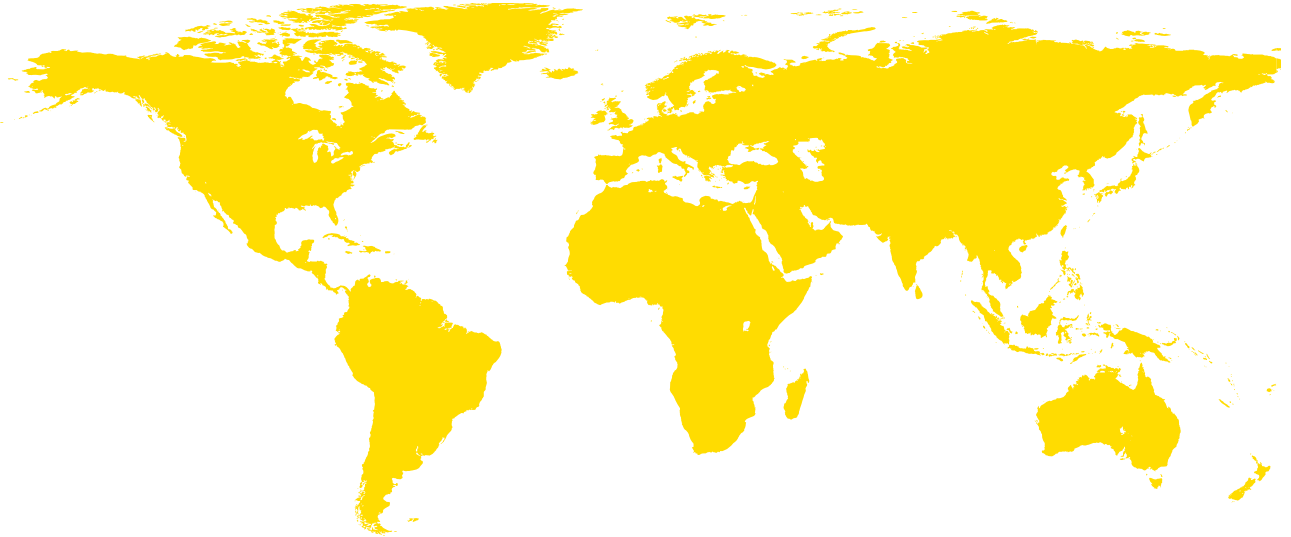
CUSTOM CONNECTIVITY



POSITION



NETWORK MEDIA



TURCK's global support network consists of over 2,500 employees in 25 countries and 60 exclusive agencies worldwide that strive to meet customer expectations. Our sales, support and manufacturing facilities are strategically located across the world allowing us to respond to local market conditions and deliver customer specific solutions on a timely basis.

We are a world leader in **automation technology** with a diverse and broad product portfolio that provides customer specific applications with high performance, reliable and cost effective solutions. The synergy in our product portfolio and customization flexibility are key components of our value proposition.

Our expertise spans across two major industry categories: **Industrial Automation** and **Process Automation**. Each weighs in with its own unique requirements and methods of conducting business. This market centric approach ensures that we develop application specific solutions across a variety of vertical market segments.



RELECO by TURCK RELAYS

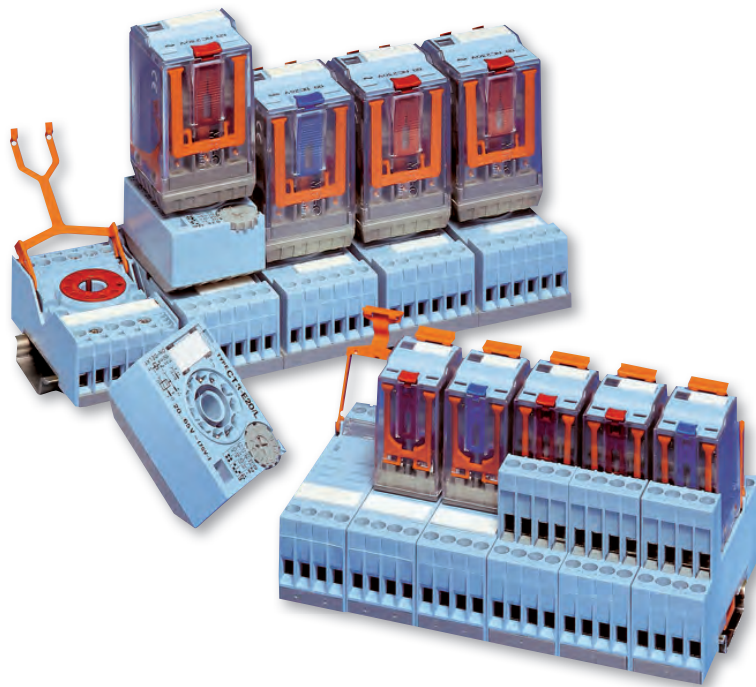
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Application	Types		Poles	AC Ratings	DC Ratings	Page	Sockets	Page
General Purpose	C2-A20	Universal 8-Pin, Standard	2	10 A @ 250 V	0.5 A @ 110 V	16	S2	64-66
	C3-A30	Universal 11-Pin, Standard	3	10 A @ 250 V	0.5 A @ 110 V	19	S3	66-69
	C4-A40	Square Base, 4-Pole	4	10 A @ 250 V	0.5 A @ 110 V	28	S4	70-71
	C5-A20	Square Base, AC Power	2	16 A @ 500 V	0.5 A @ 110 V	31	S5	71-72
	C5-A30	Square Base, AC Power	3	16 A @ 400 V	0.5 A @ 110 V	32	S5	71-72
	C7-A10	Miniature, AC Power	1	16 A @ 250 V	0.5 A @ 110 V	38	S7	73-76
	C7-A20	Miniature, AC Power	2	10 A @ 250 V	0.5 A @ 110 V	39	S7	73-76
	C7-A20E	Miniature, AC Power	2	10 A @ 250 V	0.5 A @ 110 V	40	S7	73-76
	C9-A41	Miniature, 14-Pin Plug-in	4	5 A @ 250 V	0.2 A @ 110 V	48	S9	76-77
	C10-A10	Interface Standard	1	10 A @ 250 V	0.5 A @ 110 V	51	S10	78-80
	C10-A10E	Interface Standard	1	10 A @ 250 V	0.5 A @ 110 V	52	S10	78-80
	C12-A21	Interface Standard	2	5 A @ 250 V	0.5 A @ 110 V	56	S12	80-81
Bifurcated Contacts Low Level Loads	C2-T21	Universal 8-Pin Plug-in	2	6 A @ 250 V	6 A @ 30 V	17	S2	64-66
	C3-T31	Universal 11-Pin Plug-in	3	6 A @ 250 V	6 A @ 30 V	20	S3	66-69
	C7-T21	Miniature	2	6 A @ 250 V	6 A @ 30 V	41	S7	73-76
	C10-T13	Interface Twin	1	6 A @ 250 V	6 A @ 30 V	54	S10	78-80
	C10-GT13	Interface Twin N.O.	1	6 A @ 250 V	6 A @ 30 V	55	S10	78-80
Bifurcated Contacts Current Level Loads	C7-H23	Miniature	2	10 A @ 250 V	6 A @ 30 V	44	S7	73-76
Open Contacts DC Load Switching Flag Not Available	C2-G20	Universal 8-Pin Plug-in	2	10 A @ 250 V	1.2 A @ 110 V	18	S2	64-66
	C3-G30	Universal 11-Pin Plug-in	3	10 A @ 250 V	1.2 A @ 110 V	21	S3	66-69
	C5-G30	Square Base	3	16 A @ 400 V	1.2 A @ 110 V	33	S5	71-72
	C7-G20	Miniature	2	10 A @ 250 V	0.8 A @ 110 V	42	S7	73-76
	C10-G10	Interface N.O.	1	10 A @ 250 V	0.8 A @ 110 V	53	S10	78-80
	C12-G21	Interface N.O.	2	5 A @ 250 V	0.8 A @ 110 V	57	S12	80-81
Double Make DC Load Switching Flag Not Available	C3-X10	11-Pin, DC Power	1	10 A @ 250 V	7 A @ 110 V	23	S3	66-69
	C4-X20	Square Base, DC Power	2	10 A @ 250 V	7 A @ 110 V	29	S4	70-71
	C5-X10	Square Base, DC Power	1	16 A @ 400 V	7 A @ 110 V	34	S5	71-72
	C7-X10	Miniature, DC Power	1	10 A @ 250 V	6 A @ 110 V	43	S7	73-76

Application	Types		Poles	AC Ratings	DC Ratings	Page	Sockets	Page
Latching	C3-R20	11-Pin Plug-in	2	10 A @ 250 V	0.5 A @ 110 V	24	S3	66-69
	C4-R30	Square Base, 14-Pin	3	10 A @ 250 V	0.5 A @ 110 V	30	S4	70-71
	C5-R20	Square Base	3	10 A @ 400 V	0.5 A @ 110 V	37	S5	71-72
LED Not Available	C9-R21	Miniature	2	5 A @ 250 V	0.2 A @ 110 V	49	S9	76-77
Magnet Blow-out	C3-M10	11-Pin Plug-in, High DC Load	1	10 A @ 250 V	10 A @ 220 V	22	S3	66-69
	C5-M10	Square Base, High DC Load	1	16 A @ 400 V	10 A @ 220 V	35	S5	71-72
	C5-M20	Square Base, High DC Load	2	16 A @ 250 V	7 A @ 110 V	36	S5	71-72
Sensitive 500 mW - 800 mw	C3-E24	Universal 11-Pin Plug-in	2	6 A @ 250 V	6 A @ 30 V	25	S3	66-69
	C3-N34	Universal 11-Pin Plug-in	3	6 A @ 250 V	6 A @ 30 V	26	S3	66-69
	C9-E21	Miniature	2	5 A @ 250 V	5 A @ 30 V	50	S9	76-77
Flag Not Available								
Lamp Switching	C7-W10	Miniature, FASTON 187	1	10 A @ 250 V	0.5 A @ 110 V	45	S7	73-76
Railway Applications	R3-N30D	Universal 11-Pin Plug-in	3	6 A @ 250 V	6 A @ 30 V	27	S3	66-69
	R7-A20D	Miniature	2	10 A @ 250 V	10 A @ 30 V	46	S7	73-76
	R7-T21D	Miniature, Twin Contacts	2	6 A @ 250 V	6 A @ 30 V	47	S7	73-76
Solid State Relay	CSS-AC	Instantaneous	1	3 A @ 250 V	N/A	60	S10	78-80
	CSS-AZ	Zero-cross	1	3 A @ 250 V	N/A	61	S10	78-80
	CSS-DCN	Common Negative	1	N/A	2 A @ 50 V	59	S10	78-80
	CSS-DCP	Common Positive	1	N/A	2 A @ 50 V	58	S10	78-80
Time Cube	CT2	8-Pin Plug-in Timer Module	2	10 A @ 250 V	0.5 A @ 110 V	84-85	S2	64-66
	CT3	11-Pin Plug-in Timer Module	3	10 A @ 250 V	0.5 A @ 110 V	84-85	S3	66-69
Interface Module	RINT	Interface Module	N/A	6 A @ 250 V	2 A @ 24 V	88-91		



System Features & Benefits

RELECO
by **TURCK**

Five Colors for Easy Identification of Coil Voltage

AC		• Red: 120 VAC
		• Maroon: AC other than 120 V
		• Grey: VAC/DC
DC		• Dark Blue: DC other than 24 V
		• Blue: 24 VDC

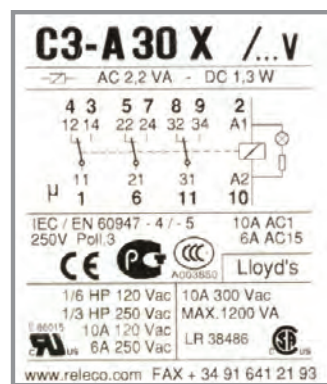
If you do not want the lockable function, you can use the orange dead-man-push-button. S0-OP for MRC and S9-OP for QRC (5 piece bag).

• **Dead-man-push-button**

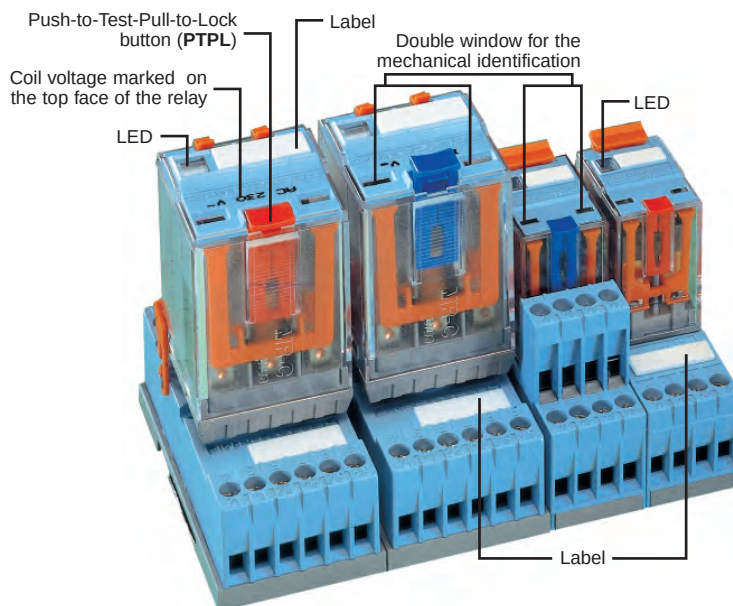
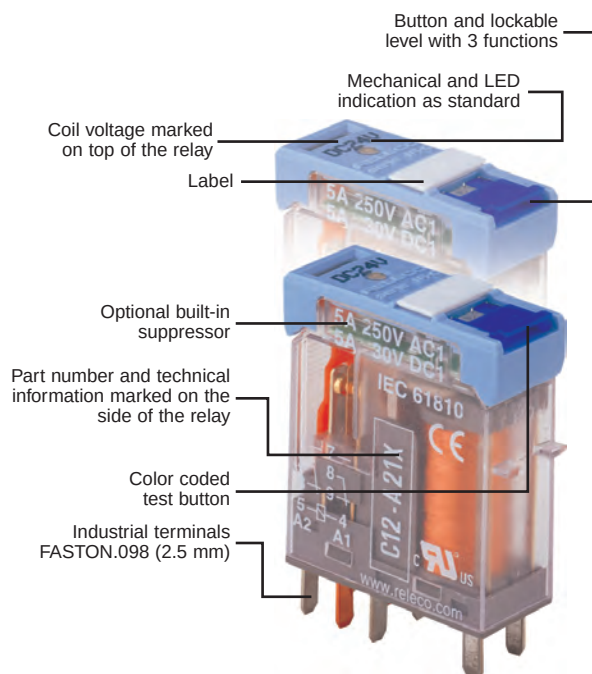
A black blanking plug is available if you don't want a test button. S0-NP for MRC and S9-NP for QRC (5 piece bag).

• **Blanking Plug**

Comprehensive Technical Label



- Coil Power
- Wiring diagram with sequential and DIN numbers
- Electrical diagram showing all additions to the coil
- Maximum switching capacity according to EN 60947 (IEC 947)
- Approvals



Country	Approval	Country	Approval
Canada	Authority: CSA Specification: C 22.2; UL 508	United Kingdom	Authority: Lloyd's Register of Shipping
China	Authority: CQC Specification: GB14048.5-2001		
Russia	Authority: KORPORATSIA STANDARD Specification: GOST R 50030.5.1	USA	Authority: UL Specification: C 22.2; UL 508

Industrial Relays MRC, QRC, IRC Part Number Key

Part Number Keys are to assist in IDENTIFICATION ONLY. Consult factory for catalog items not identified.

C	n(n)	-	T	S	y	zz	/...V	Ref.	nnnn
Normal Industrial Relay code								Ref. nnn	
Relays with code R are used for railway series.								Relays with a reference number are versions with special (e.g. customised) features. These features may relate to special test criteria, tolerances or other properties.	
Basic type refers to the product line								Availability of such relays may be limited to certain customers or applications.	
Numbers between 2 and 12 are used.									
Relay Type								Nominal coil voltage or current	
A = Standard (general-purpose) contact E = Sensitive drive with 500 mW coil power G = Refers to a NO contact H = Single-point contact + twin contact load to signal current circuit for switching state feed back. Mixed contact configuration M = Relay with highly effective neodimium blow magnet for fast quenching of the arc. This relay is particularly suitable for high DC loads. N = Sensitive drive 800mW coil power R = Code for remanence relays, drive-specific ID S = Sensitive drive with 250 mW exciter input T = Twin contact for signal and control circuit W = With tungsten contact for maximum switch-on currents								AC ... V, DC ... V, UC ... V (AC/DC), AC ... A, DC ... A Relays are generally available for voltages of 6 V. DC 220 V/AC 240 V (AC 400 V) or UC 6 . 48 V. Current relays available on request.	
								Options	
								D = Integrated freewheeling diode F = Integrated freewheeling diode and series diode e.g. for common alarm circuits R = RC connection for the coil X = Electric position indicating device with LED B = Bridge rectifier	
Number of Contacts								Definition of Contact Material	
								This code may differ depending on type. Examples: 0 = in the standard range stands for AgNi 1-9 = see contact material for each type	

Product range

Releco offers a wide range of relay types and versions and associated bases and accessories.

Standard (general-purpose) relay, MRC series

35 x 35 mm round plug-in relay, 8- or 11- terminals multipole connector according to IEC 67 with 2 or 3 contacts up to 10 A and different contact types and contact materials. Standard relay 35 x 35 mm with flat blade connectors with up to 4 contacts and up to 16 A with 3 contacts.

Miniature industrial relay, QRC series

22.5 mm series with up to 4 contacts and up to 10 A with 1 or 2 contacts

Interface relay, IRC series

Overall width 13 mm with up to 2 electromechanical contacts, or fully electronic switches.

Special relays, remanence relays

While "normal" relays are monostable, i.e. they return to the idle state when the excitation is switched off, remanence relays are bistable, i.e. the current switching state is retained irrespective of the excitation. Relays of this type are available in different versions.

Electronic relay, CSS

In the IRC series different electronic DC or AC relays up to 3 A are available. For AC relays a distinction is made between synchronously (zero crossing) and asynchronously switching versions. For switching transformer loads we recommended using asynchronously switching semiconductor switches. For incandescent lamp loads etc. synchronously switching switches are ideal for avoiding high switch-on currents.

Accessories

Suitable bases are available for the different relay series for DIN rail mounting or panel mounting. In addition, retaining clips are available for the relays, some of which are included in the scope of supply. Suitable bridges for cost-saving wiring in series are also available.

Terminology and Technical Information

Contact Materials

Silver-nickel (AgNi) and silver-tin oxide (AgSnO₂) are used as standard contact materials for all models. Other contact materials are available on request.

Gold Flash

For relays that are intended to be stored or remain unoperated for any length of time, a 0.2μ layer of gold protects the contacts from oxidation.

Gold Plating

A 10μ plate of gold increases the operational reliability. It should be used for switching low level currents.

Contact Resistance

Contact resistance is dependent on contact material, contact pressure and contact contamination.

High contact resistance raises the temperature of the contacts, therefore reducing their working life. Typical contact resistance of the MR-C and QR-C relays is 50 mΩ.

Contacts Gap

Contact gap and opening speed of the contacts have an influence on the length and the duration of the arc.

In the case of AC, a gap of 0.5 mm is sufficient to quench the arc which occurs automatically at the "zero point" of the cycle.

In the case of DC, the arc only quenches when the contact gap is sufficient for the voltage and current applied. Please see tables of "Max. DC Current".

Coil Materials

Coil bobbins are molded in polybutylene with fiberglass (130°C).

Enamelled wires of Class F specification are used (155°C).

They are wound on precision automation winding machines, with the number of turns and wire tension accurately regulated and monitored.

Tolerances

Coil resistance is measured at 20°C and is regulated within ±10% of specified value.

Standard Windings

The coil voltages indicated in the catalog refer to standard windings. Other coil voltages are available, including products for series connection and amperometric applications. Please consult your distributor for details.

Maximum Intensity

The "Max. switching current" indicated in every model, refers to the maximum stable current which should be possible in permanent conduction (ITH).

In the case of AC, the "Max. switching current" that the relay can support is the same for all the values of voltages ≤ of the "Max. switching voltage" specified in every model.

The product of the intensity and the voltage applied should not be higher than the values specified as "Max. AC load".

In the case of DC, the "Max. switching current" must be less than the current that causes the continuous arcing.

The tables of "Max. DC current" show the possible values of intensity in relation to the applied voltage.

Maximum Voltage

The maximum voltage on the contacts depends on the insulation between each contact (pole-to-pole) and between all contacts and the coil.

The EN 60947 and VDE 0110 standards set out the maximum voltage values, taking into consideration the quality of the insulation materials, pollution degree as well as the shape and dimensions of the contact barriers (creepage distance).

Contacts in Series

The connection of two or more contacts in series is equivalent to multiplying the contact gap by that amount. By using this method, a greater break capacity is achieved for DC switching.

Minimum Working Voltage (pull in)

This is the minimum voltage that must be supplied to the coil to ensure that the relay energizes, the contacts change over and are positively held in place without any vibration.

The values of voltage specified are those at or below which the relay must pull in.

Working at:
AC 50 Hz Relays
AC 60 Hz Relays
DC Relays

50 Hz	60 Hz
$0.8 \times U_n$	$0.85 \times U_n$
$0.75 \times U_n$	$0.8 \times U_n$

$0.8 \times U_n$

Maximum Release Voltage (drop out)

This is the voltage at which the relay de-energizes, the contacts change over and are positively held in place without any vibration.

The values of voltage specified are those at or above which the relay must drop out.

DC relays ≤10% U_n
AC relays ≤20% U_n

Contacts in Parallel

The connection of two or more contacts in parallel does not mean that it is possible to switch a greater load. However, the stable current and the operational reliability of the relay is increased.

Double Make Contacts

The double make contact arrangement is equivalent to two contacts connected in series.

The maximum intensity supported corresponds to only one contact. This system allows for higher DC operating voltages.

Bifurcated (Twin) Contacts

The contact blade is divided into two parts, each with its own contact. Both contacts press down on their own independent fixed contacts.

This system is particularly good for switching at very low levels of current.

Contact Protection

The electrical life of contacts can be prolonged by components which eliminate or reduce the back EMF transients. These voltages are generated by the reactive component of the load on disconnection, which increases the duration and the temperature of the arc.

For AC, RC suppressors or varistors can be connected in parallel with the load or the contacts.

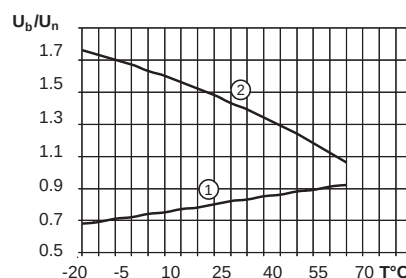
For DC with an inductive load, the best method is to connect a diode in parallel with the load.

Ambient Temperature

The ambient temperature has an influence on the coil resistance and on its thermal dissipation capacity.

Curve 1 represents the variations of the pull in voltage (% U_n) in relation with the ambient temperature (T).

Curve 2 indicates the maximum values of the voltage applied (U_b) to the coil in relation with the nominal voltage (U_n) at the ambient temperature (T).



Relay Types Based on Applications

A General Purpose Relays

These are used for most general applications, such as automation, pneumatic, heating appliances, signaling, as an input or output interface, etc.

Change-over contacts. Isolation between N.O./N.C.: 1000 V_{rms}

Gap: 0.5 mm

Rating loads of up to:

16 A @ 230 V AC1
 16 A @ 30 V DC1
 0.5 A @ 110 V DC1
 0.2 A @ 220 V DC1

T Relays with Twin Contacts

These are used to switch low currents with high operational reliability.

Change-over contacts. Isolation between contacts N.O./N.C.: 1000 V_{rms}

Gap: 0.5 mm

Gold-flashed contact 0.2μ or plated with 10μ Au (optional).

Maximum load: 6 A @ 230 V AC1
 Minimum load: 1 mA @ 5 V DC1

S Sensitive Relays, 250 mW

One change-over contact

E Sensitive Relays, 500 mW

Two change-over contacts

N Sensitive Relays, 800 mW

Three change-over contacts

DC relays adjusted to work at lower power, available in both MR-C and QR-C versions. Gold-flashed contacts 0.2μ or plated 10μ Au (optional).

Operational voltage range:

S relays: 0.8 - 2.5 U_n
 E relays: 0.8 - 1.7 U_n
 N relays: 0.8 - 1.4 U_n

G Relays with Open Contacts

An open contact arrangement allows an increase in the contact gap, increasing the DC "break capacity" without altering the AC performance.

Gap: 1.5 mm(QR-C types);
 1.7 mm(MR-C)

Isolation of contacts NO: >2000 V_{rms}

Maximum load:

16 A @ 230 V AC1
 1.2 A @ 110 V DC1
 0.4 A @ 220 V DC1

X Double Make Relays

These relays are designed to switch high DC loads at voltages of 110 and 220 VDC.

If consists of one normally open contact with a gap > 3 mm so that the arc length is divided by two.

Isolation between contacts: >2000 V_{rms}

The max. DC load is shown in the tables.

X versions are available in MR-C and QR-C type housing.

W High Inrush Current Relay

Two open contacts, one of silver nickel and one of tungsten work in parallel but are physically displaced so that the tungsten contact makes and breaks the load. The silver contact is used for carrying the stable current.

This relay was designed to switch incandescent and fluorescent lamps, (with p.f. corrected), and DC inductive loads.

Only available in C7 type housing.

Maximum loads:

6 A @ 230 V AC5a/b (lamps)
 10 A @ 230 V AC15
 1.5 A @ 110 V DC1

M Relays with "Mag. Blow Out"

These versions are similar to X types, however they have an addition of a powerful magnet which "blows out" the arc generated when the contacts are opened, therefore quenching the arcing quickly and increasing the contact life.

They are able to switch DC loads of up to 10 A @ 222 V DC1 and 2 A @ 220 V DC13

R Remanence Relays

A high remanence magnetic circuit allows the relay to latch positively when the current applied flows through the coil in a direction and delatches if the current flows in the opposite direction.

Electronic circuitry is added inside the relay to control this action and also protects against transient voltages.

There is one winding for AC coils and two windings for DC coils.

All coils withstand permanent connection.

The relay can be operated with pulses of 50 ms, minimum, at nominal voltage.

Specifications

The data referred to in the specifications for each model refers to typical values of "new" relays at 20°C.

Tables

The tables of electrical life and the tables of maximum DC current show the typical result of exhaustive tests performed at an ambient temperature of 20°C, operating frequency of 1,200 operations/hour, and under permanent connection.

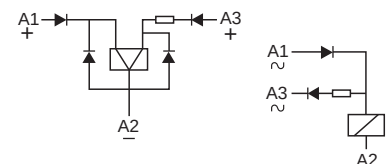
The switching current ratings specified in the catalog refer to a minimum electrical life of 100,000 operations.

Margin of Over-Voltage

Coils withstand, on permanent connection, a maximum over-voltage of 110 percent U_n, with rated current through the contacts at an ambient temperature of 60°C.

Custom Relays

Relays with special specifications can be supplied after consultation with an official RELECO distributor.



Coil Accessories

MRC - QRC

Protection Against Transients

When the coil is disconnected from an electromagnet, peaks of inverse voltage appear at the terminals which can reach very high values. These pulses can be transmitted down the line associated with the coil and could possibly affect other components.

In the case of a relay being operated by such devices as transistors, triacs, etc; it may be necessary to protect against transients.

Transients Carried in the Line

High voltage surges can be carried in the supply line to the relay coil.

These may appear in the form of peaks or bursts and are generated by the connection and disconnection of electric motors, transformers, capacitors, etc.

Normally a relay is unaffected by these pulses, but if a diode is connected in association with the coil, it must be capable of withstanding an inverse voltage higher than those of the incoming peaks.

Protection Circuits

A protection circuit must efficiently cope with pulses generated by the coil as well as incoming line surges (surges $U_{1.2/50\mu s}$).

RELECO relays are available with integrated protection circuits or with modules plugged into sockets S3-MP or S3-MS.

X LED indication with rectifier.
 For DC and AC relays up to 250 V
 Surges of 1000 V up to 24 V
 Surges of 2000 V from 25 to 60 V
 Surges of 4000 V from 61 to 250 V

Note: LED connected in series with the coil @ 220 VDC in QRC types.

D Free-wheeling diode.

DX Free-wheeling diode + LED
 Dampens transients caused by the relay coil on de-energization.
 Surges of 2000 V up to 60 VDC
 Surges of 4000 V from 61 to 250 VDC (*)

F Polarity and free wheeling diodes.

FX Polarity + free wheeling diode + LED

A diode in series with the coil protects the relay from reverse connection.
 Surges of 1000 V up to 60 VDC
 Surges of 4000 V from 61 to 250 VDC (*)

B Bridge rectifier incorporated.

BX Bridge rectifier + LED indication.
 Allows the relay to operate in both AC or DC without any polarity inconvenience. Available only in voltages up to 60 V
 Surges of 1000 V

R Resistor and capacitor.
 Suppressor for AC coils.
 Surges of 2000 V
 Available only in MRC types

(*) Surges of 2000 V in QRC types.

IRC

LED and protection circuit connected to coil.

- X** LED with no polarity, (standard)
 Coils ≤ 12 V CC and CA
 LED rectifier bridge in parallel
- X** LED with no polarity, (standard)
 Coils ≥ 24 V CC and CA
 LED rectifier bridge in series
- FX** LED with polarity A1+ (option)
 Every DC coil voltage
 Polarity and Free-wheeling diodes
- BX** LED with no polarity, (option)
 Only 24 V and 48 V AC/DC coils
 Rectifier bridge for AC/DC relays
- R** LED not available (option)
 Every AC coil voltage
 RC protection against pulses on AC

Protection Against Pulses

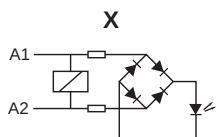
When a relay coil is disconnected, reverse voltage peaks may arise and reach very high values. Said peaks can transmit to the coil associated line and other relays or semiconductors can be affected.

If triac, transistor, etc. controls a relay, appropriate steps must be taken to avoid or decrease peaks down to a non-risky level.

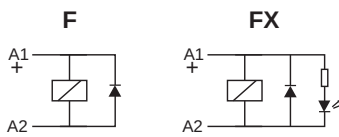
Both polarity and free-wheeling diodes (FX), must protect coils, to avoid malfunctions, provided DC relays in battery are installed.

Making or breaking engines, transformers or contactors in an industrial environmental, may generate high voltage pulses, either isolated or burst, through the main line.

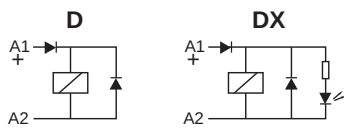
The voltage level of those pulse may be high enough to affect the isolation of the coil.



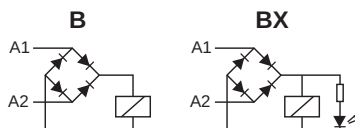
LED consumption: 1 mA



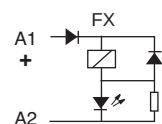
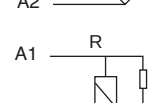
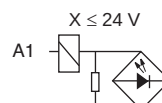
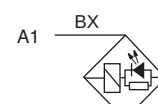
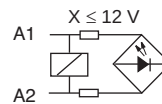
Increases release time approx. 4 times



Increases release time approx. 4 times



Increases release time approx. 3 times



Total Interconnection, Bridge Bars for Coil and Power Lines

Bridge Bars Connection on S10-M and S12 Sockets

Examples of mounting. Not at scale.

New S10-M and S12 sockets and new connection bridges B20, V10 and V40 permit quick and easy wiring for relays in battery, in groups or in any other combination of voltages, coils or contacts.

Every bridge allows mounting with a hybrid configuration of S10-M and S12 sockets. The immediate identification of the different circuits means a lower mounting cost, inspection or maintenance.

Available in grey (standard), red (AC) and blue (DC), following the same color coding adopted by RELECO in testing buttons to identify its relays.

V40 Bridge Bars for Power Lines

V40 bridges allow joining common points in the power connection, usually the change-over contacts 11 or 21 on relays. They can be also used to bridge NC or NO terminals.

V40 bridges join four similar points in four adjacent sockets. They can join among themselves or to V10 units to bridge an unlimited number of sockets in any combination.

Made of copper with a current capacity of 40 A.

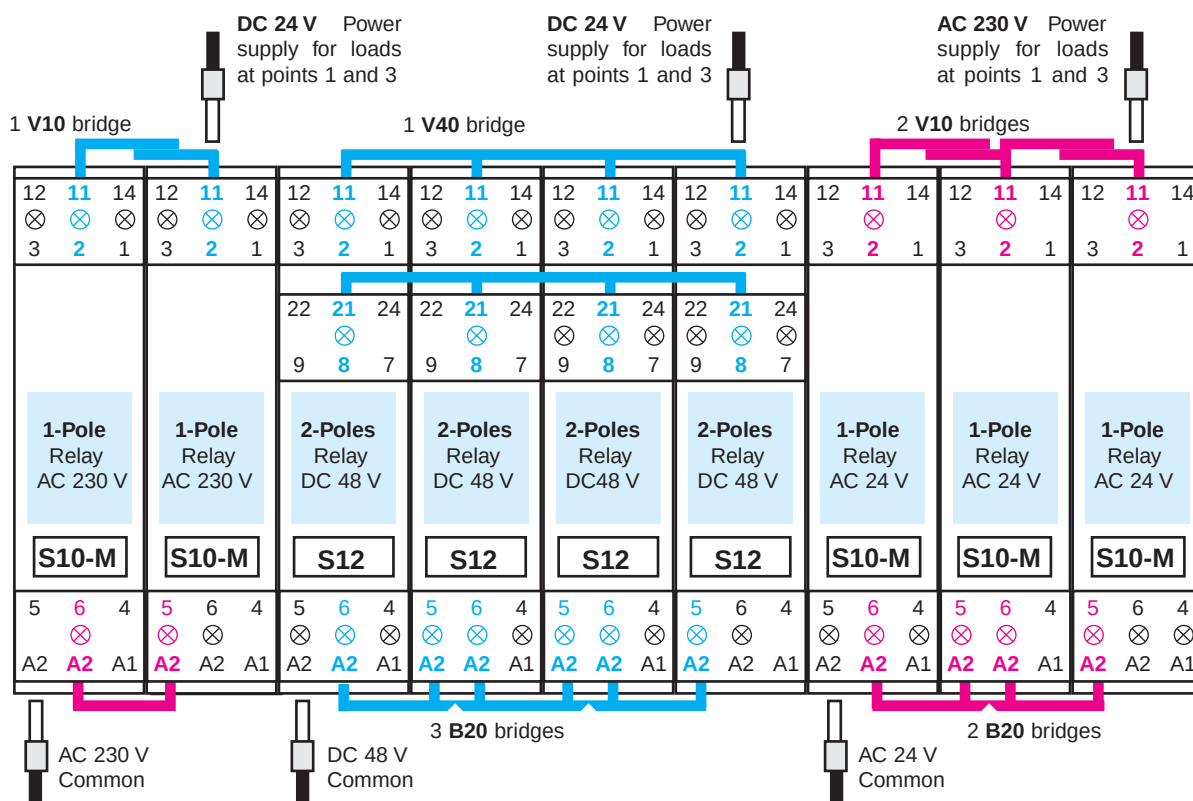
V10 Bridge Bars for Power Lines

V10 bridges connect a single socket to the next socket, so can you bridge less or more than four sockets, as long as the total number of sockets is not a multiple of four.

They can join between themselves or to V40 units. If you need to bridge five sockets, you can either use a V40 + 1 V10 or four V10 bridges.

Made of copper with a current capacity of 40 A.

It is necessary that the total sum of loads in a relay group will not exceed the **maximum intensity of 40 A**, permitted by the power bridges. If exceeded, the essential power cables must be added, to share the current and avoid overheating the bridges. Every inlet terminal admit ferrule tips up to 4 sq. mm.



B20 Bridge Bars for Coil Lines

Both sockets are accessible to point A2 from terminals 5 and 6, internally connected. Each element connects point 6 of the first socket to point 5 of the next one, always leaving free the point 5 of the first socket and the point 6 of the last one, to connect the common polarity cable. Coils control voltage connect to points A1.

Bridge B20 is composed by four units which can be divided in 1, 2 or 3 elements.

Total Interconnection, Bridge Bars for Coil and Power Lines

V40 V10



Power Bridge Bars for Sockets

S10-M and S12

V40 bridges join four similar points in four adjacent sockets. They can join among themselves or to V10 units to bridge an unlimited number of sockets S10-M and S12 in any combination.

V10 bridges connect a single socket to the next socket, so you bridge less or more then four sockets.

Made of copper with a current capacity of 40 A.

See more information on page 11.

B20



Coil Bridge Bars for Sockets

S10-M and S12

B20 bridges points A2, internally connected, of every adjacent socket S10-M or S12.

Each element connects point 6 of the first socket to point 5 of the next one, always leaving free the point 5 of the first socket and the point 6 of the last socket, to connect the common polarity cable.

See more information on page 11.



V40-G



V10-G



V40-R



V10-R



V40-A



V10-A



B20-G



B20-R



B20-A



IEC 61810 EN 60947

IRC relays, E version

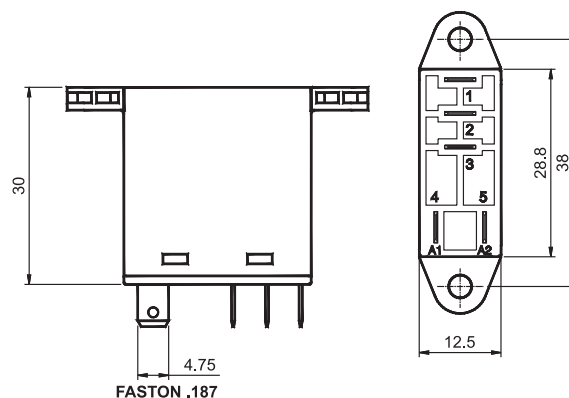
Types C14... and C15...

Cover for flange panel mounting

Ordering code:

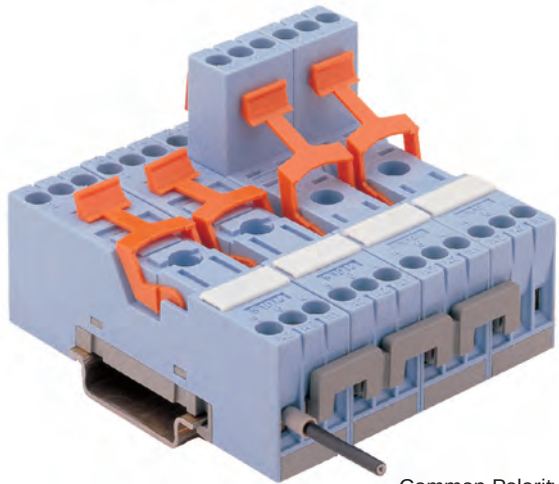
Add "E" to the standard type code.

Example: C14-A10E or C15-A21E



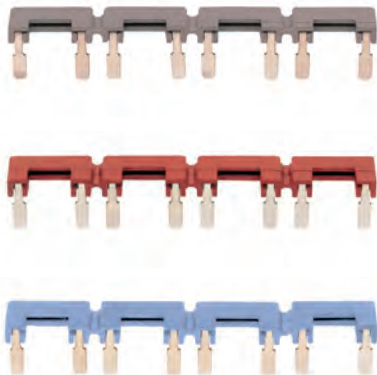
Total Interconnection, Bridge Bars for Coil and Power Lines

I/O sockets, IRC relays and bridge bars allow more flexible, economical and aesthetic mounting in interface and general applications.

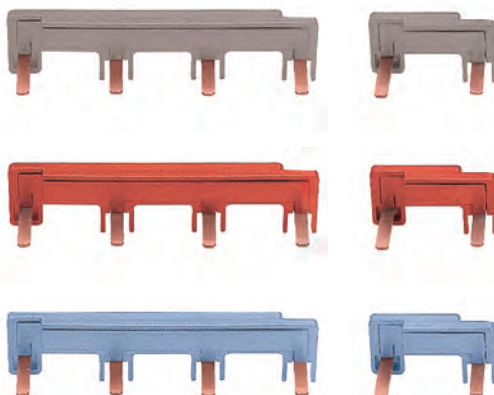


Common Polarity
Cable for Coils

B20 Bridge Bars for Coil Line



V40 and V10 Bridge Bars for Power Line



S10-M and **S12** sockets of 1 and 2 contacts, with inlets in line and identical disposition of contacts set.

Identical sequence of coil and contacts on both sockets.

Coil terminal on level 1: (A2, A2, A1)

Contact terminals on level 1: (12, 11, 14)

Contact terminals on level 2: (22, 21, 24)

Bridge bars between A2 coil terminals with 2 free inlets to connect a common polarity cable. Those bridge bars are isolated and divisible by hand, in single units.

Power bridges with current capacity of 40 A to be connected between contacts 11 or 21 in any combination: Groups or battery of relays, to supply the power current to the loads.

Inlet terminals admit ferrule tips up to 4 mm².

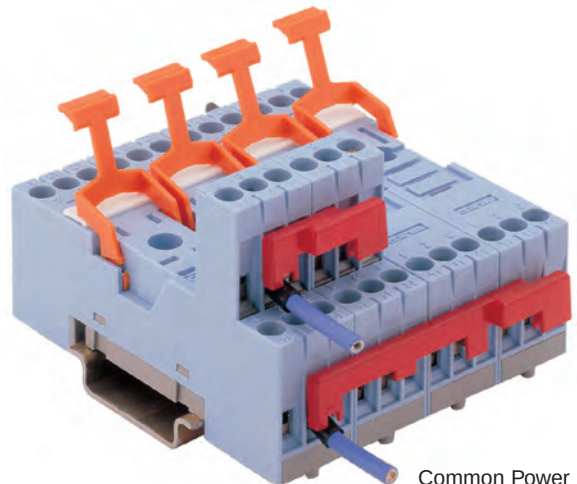
Bridges in grey color as standard.

Options:

Adopted colors by RELECO used in the testing buttons of relays:

Blue, to identify DC circuits

Red, to identify AC circuits



Common Power
Supply Cable for Loads

Total Interconnection, Solid State Relays

How to Mount Solid State Relays as Interface on PLC

Input

In every CSS relay, the input on terminals A1 and A2 is 5-32 VDC, with no polarity.

If bridges to joint points A2 are used, a single voltage can be applied on terminals A1, for every relay, or different voltages within the range 5-32 VDC.

Output DC or AC (Independent Relays)

When using a single relay of any model, load can be connected either on terminal 1 or terminal 2.

Relays with Output on DC (CSS-DCP or CSS-DCN). Range of voltage applied to the load will be 5-50 VDC.

Relays with Output on AC (CSS-AC, Inductive Loads, or CSS-AZ, Resistive Loads). Range of voltage applied to the load will be 24-250 VAC, 50/60 Hz.

Output on DC (Relays in Battery)

If power bridges are used with S10-M sockets in series of relays in line, it is necessary to attend the common polarity chosen to the loads connection.

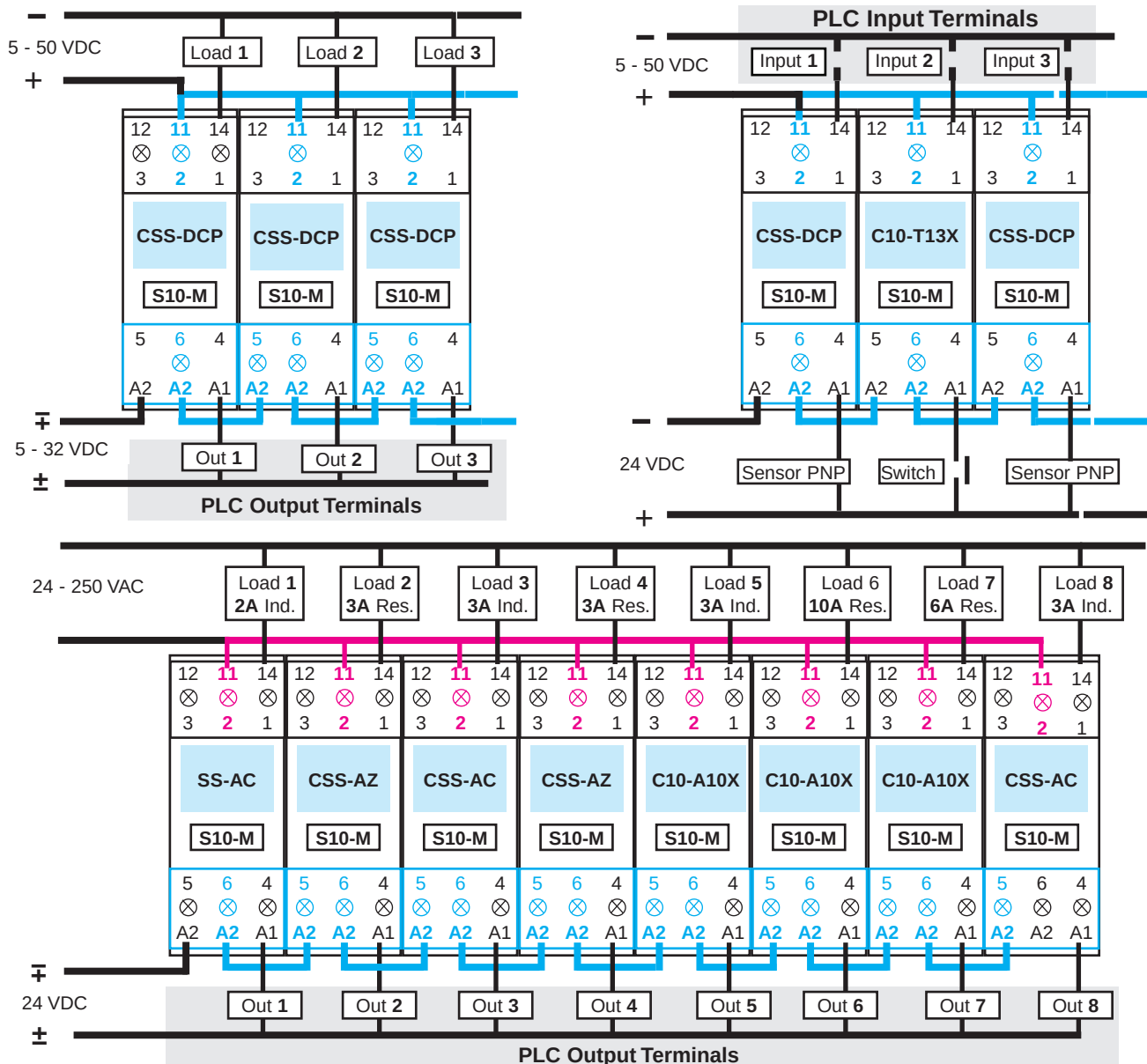
Usually the point 2 (11 DIN) is the common point of the socket where positive tension is applied to the loads.

Then CSS-DCP relays must be connected where terminal 2 is common positive.

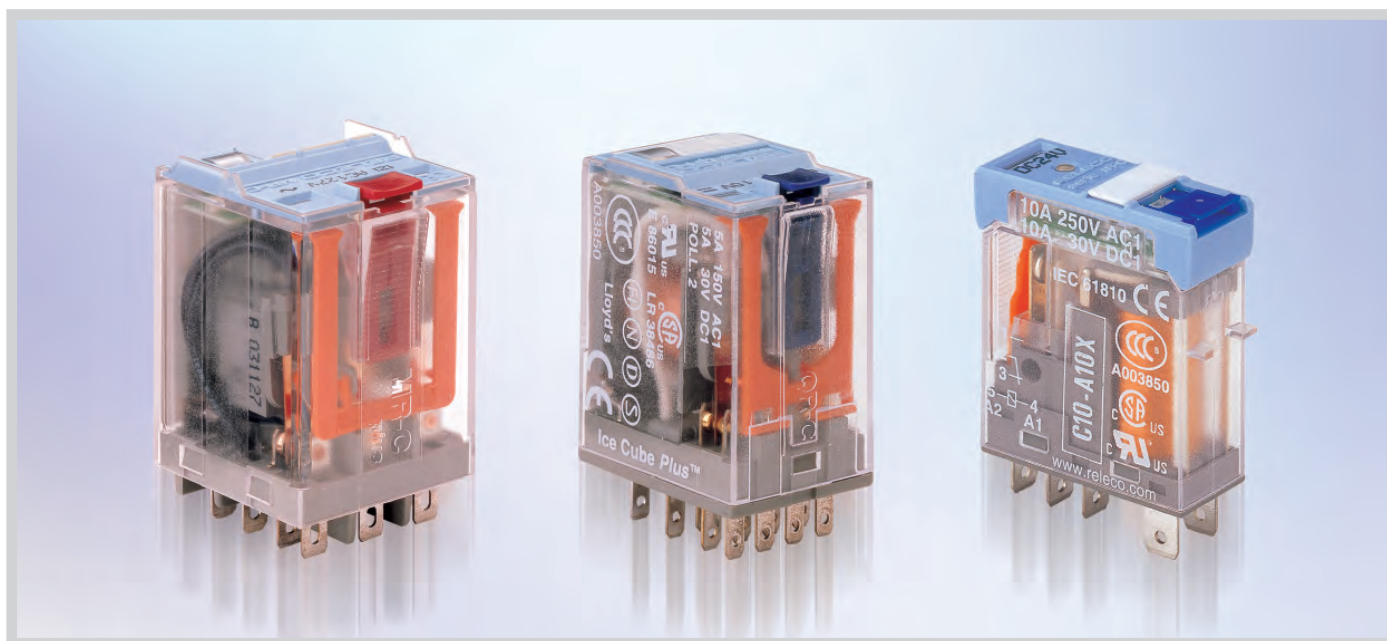
Said disposition complies Norm EN-60204-1-5,3,3 where "cutting every active element of its feeding" is suggested, that means to switch from the positive.

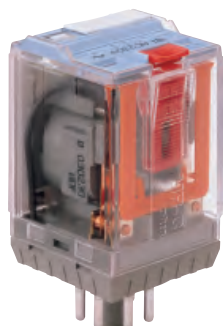
If point 2 of the socket is taken as negative, relays type CSS-DCN, where terminal 2 is negative must be connected.

For relays CSS-AC or CSS-AZ, only whether the load is inductive or resistive has to be considered, as they have no polarity.



RELAYS





Relay compatible
with sockets:

S2-B, S2-S, S2-L, S2-PO

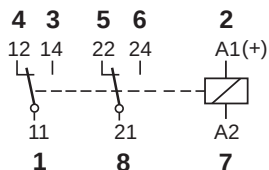


Table 1 Electrical Life, ops. x 10⁶

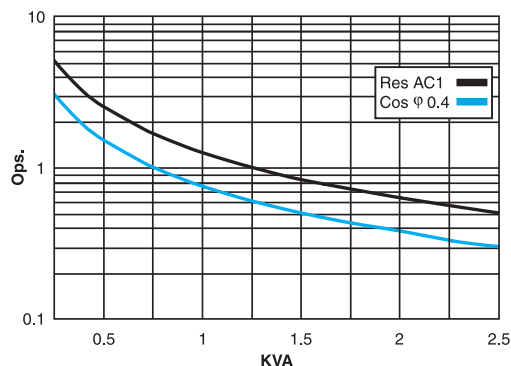
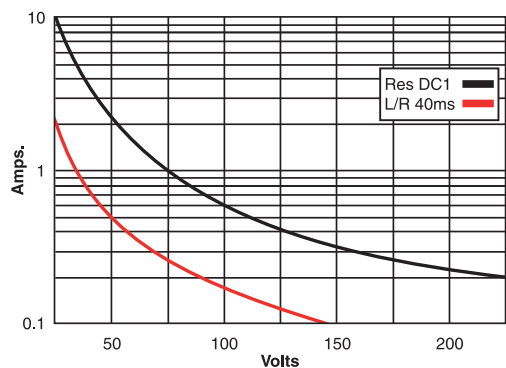
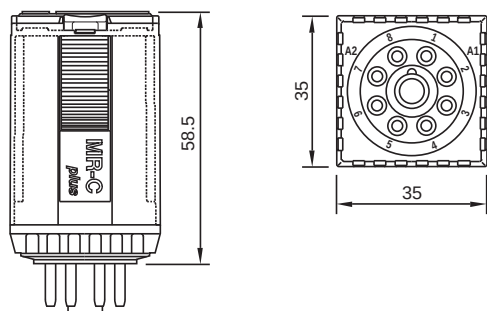


Table 2 Max. DC Load



Dimensions - mm



C2-A20



General purpose

Two pole, change-over contacts

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.2 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	433	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relay
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard)

C2-A20X.....VAC

RC suppressor

C2-A20R.....VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard)

C2-A20X.....VDC

Free-wheeling diode

C2-A20DXVDC

Polarity and free-wheeling diodes

C2-A20FX.....VDC

AC/DC bridge rectifier (24, 48 or 60 V)

C2-A20BXVDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**
S2-B, S2-S, S2-L, S2-PO

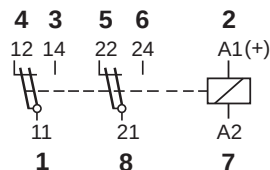


Table 1 Electrical Life, ops. x 10⁶

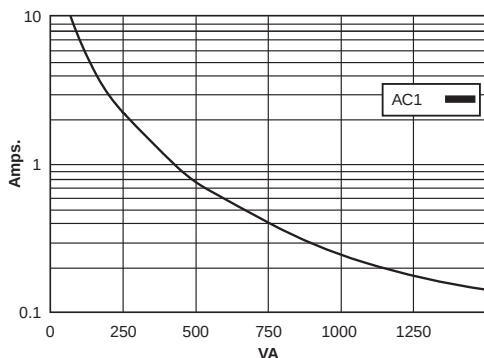
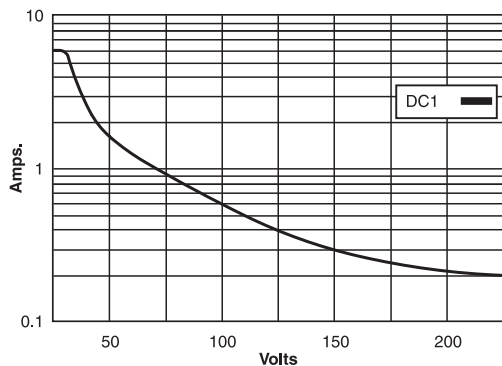
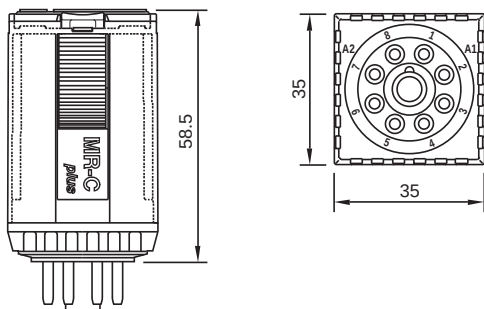


Table 2 Max. DC Load



Dimensions - mm



C2-T21



Low level
Two change-over bifurcated contacts

6 A 250 V AC1 6 A 30 V DC1
Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials: Standard, code 1 AgNi + 0.3μAu
Optional, code 2 AgNi + 10μAu
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.2 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	433	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relay
Electrical life at nominal load 100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C2-T21X.....VAC
RC suppressor C2-T21R.....VAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C2-T21X..... VDC
Free-wheeling diode C2-T21DX..... VDC
Polarity and free-wheeling diodes C2-T21FX..... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C2-T21BX..... VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**
S2-B, S2-S, S2-L, S2-PO

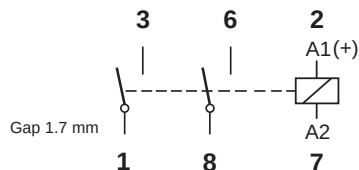


Table 1 Electrical Life, ops. x 10⁶

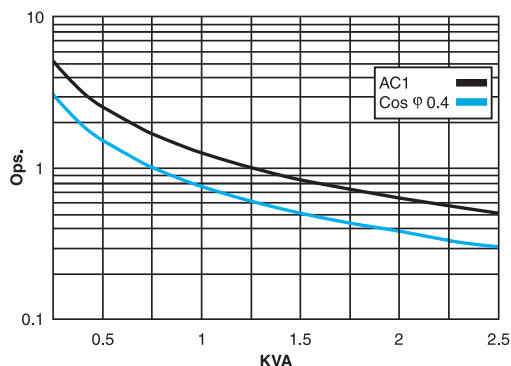
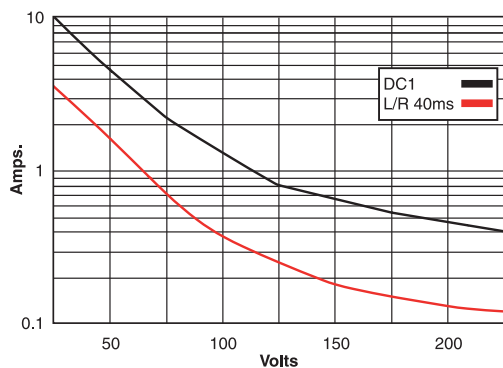
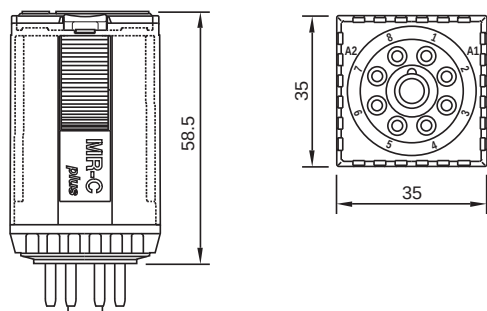


Table 2 Max. DC Load



Dimensions - mm



C2-G20



General purpose, DC applications
Two pole open contacts

10 A 250 V AC1 1.2 A 110 V DC1
10 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.4 VA (AC)/1.6 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	360	66
48	286	50	48	1K4	34
115	1K7	21	110	7K6	15
230	6K8	10	220	30K3	7.5

Insulation

Dielectric strength (1 minute): Open contacts 2,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, EN 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C2-G20X.....VAC
RC suppressor C2-G20RVAC

DC 24, 48, 110, 220

X = LED, no polarity (standard) C2-G20X..... VDC
Free-wheeling diode C2-G20DX VDC
Polarity and free-wheeling diodes C2-G20FX VDC
AC/DC bridge rectifier (24, 48 or 60 V) C2-G20BX VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

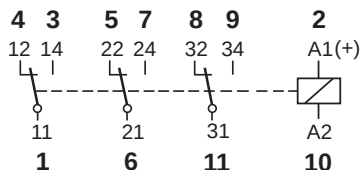


Table 1 Electrical Life, ops. x 10⁶

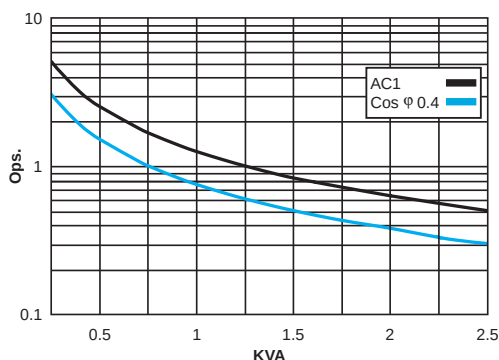
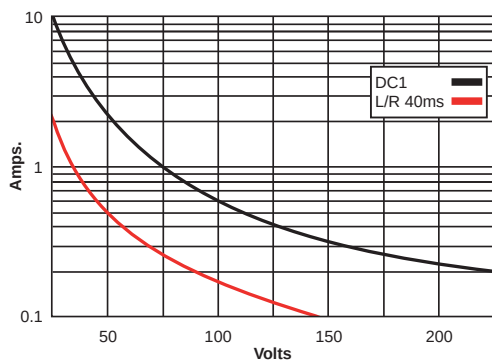
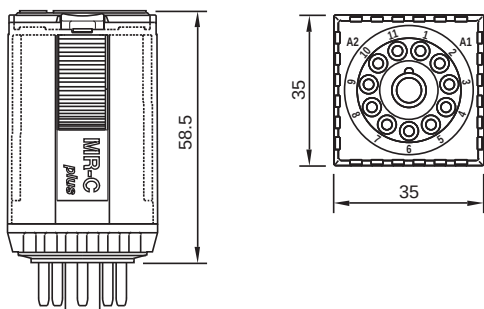


Table 2 Max. DC Load



Dimensions - mm



C3-A30



General purpose
Three pole, change-over contacts

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.5 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.2 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	433	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load 100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard)

RC suppressor

C3-A30X.....VAC

C3-A30R.....VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard)

Free-wheeling diode

Polarity and free-wheeling diodes

AC/DC bridge rectifier (24, 48 or 60 V)

C3-A30X.....VDC

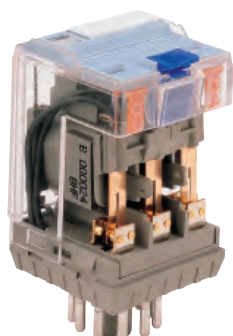
C3-A30DXVDC

C3-A30FX.....VDC

C3-A30BXVDC



IEC 61810 EN 60947



Relay compatible
with sockets:

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

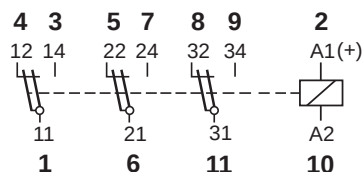


Table 1 Electrical Life, ops. x 10⁶

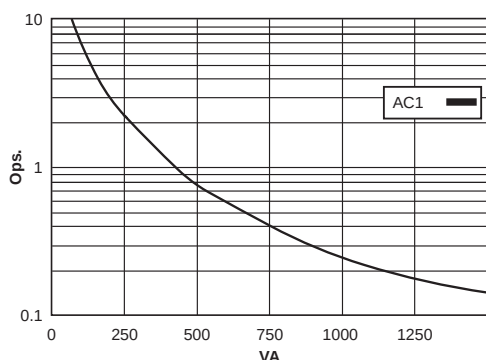
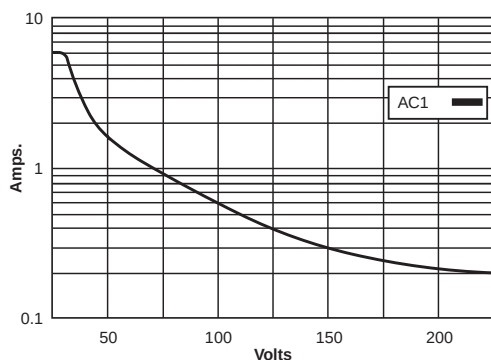
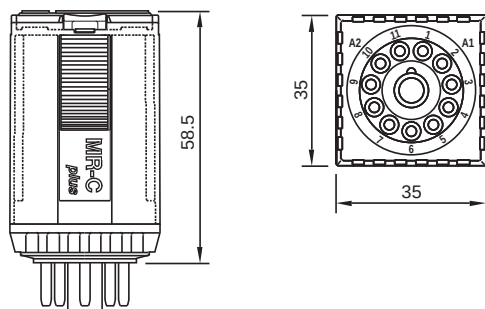


Table 2 Max. DC Load



Dimensions - mm



C3-T31



Low levelL

Three change-over bifurcated contacts

6 A 250 V AC1 6 A 30 V DC1

Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.3μAu
	Optional, code 2	AgNi + 10μAu
Max. switching current		6 A
Max. peak inrush current (15 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.2 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	2.2 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	443	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Insulation

Dielectric strength (1 minute):	Open contacts	1,000 V
	Between adjacent poles	2.5 KV
	Between contacts and coil	2.5 KV
Isolation resistance at 500 V		≥1 GΩ
Isolation, IEC 61810-5:		2.5 KV / 3

Specifications

Operate time + bounce time	16 ms
Release time + bounce time	8 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	95 g

Standard Types

AC 50 Hz, (60 Hz): **24, 48, 115, (120), 230, (240)**

X = LED (standard)

RC suppressor

C3-T31XVAC

C3-T31RVAC

DC **24, 48, 110, 220**

X = LED, no polarity (standard)

Free-wheeling diode

Polarity and free-wheeling diodes

AC/DC bridge rectifier (24, 48 or 60 V)

C3-T31X VDC

C3-T31DX..... VDC

C3-T31FX..... VDC

C3-T31BX..... VDC



IEC 61810 EN 60947



Relay compatible with sockets:

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

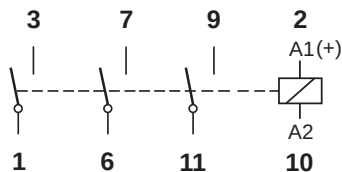


Table 1 Electrical Life, ops. x 10⁶

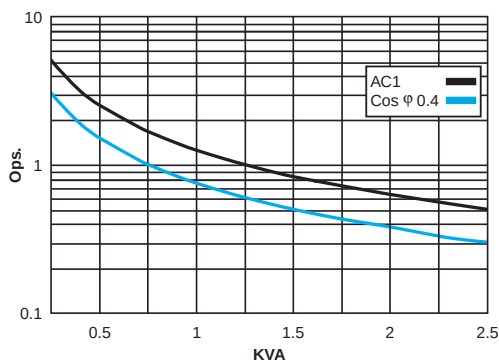
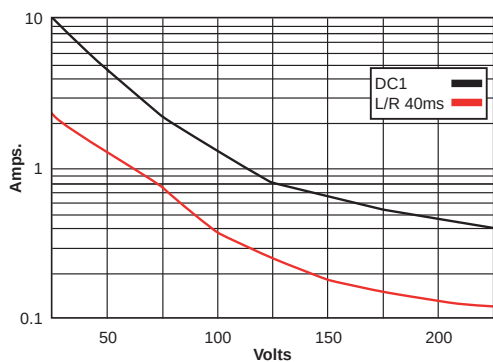
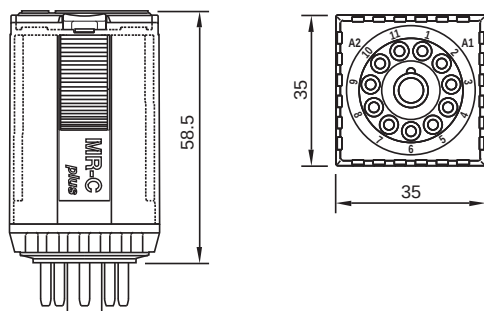


Table 2 Max. DC Load



Dimensions - mm



C3-G30



General purpose, DC applications
Three pole, open contacts

10 A 250 V AC1 1.2 A 110 V DC1
10 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.4 VA (AC)/1.6 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	360	66
48	286	50	48	1K4	34
115	1K7	21	110	7K6	15
230	6K8	10	220	30K3	7.5

Insulation

Dielectric strength (1 minute): Open contacts 2,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

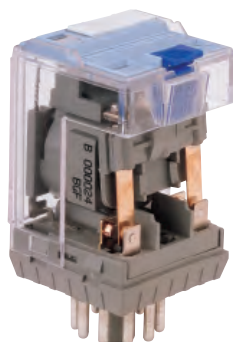
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C3-F30XVAC
RC suppressor C3-G30RVAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C3-G30X..... VDC
Free-wheeling diode C3-G30DX VDC
Polarity and free-wheeling diodes C3-G30FX VDC
AC/DC bridge rectifier (24, 48 or 60 V) C3-G30BX VDC



IEC 61810 EN 60947



Relay compatible with sockets:

S3-B, S3-S, S3-MP, S3-MS, S3-L, S3-PO

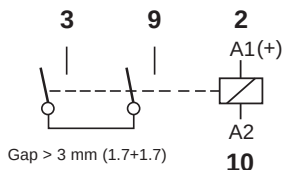


Table 1 Electrical Life, ops. x 10⁶

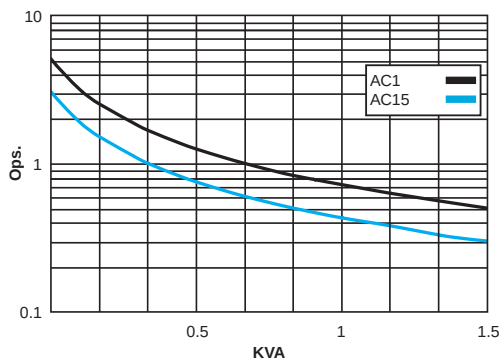
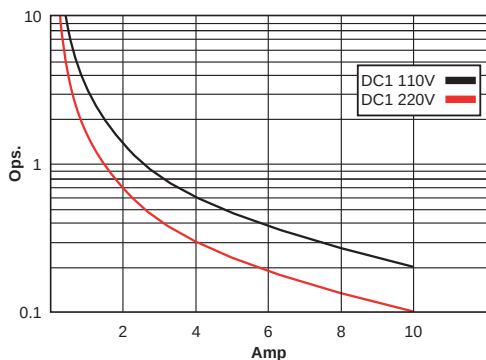
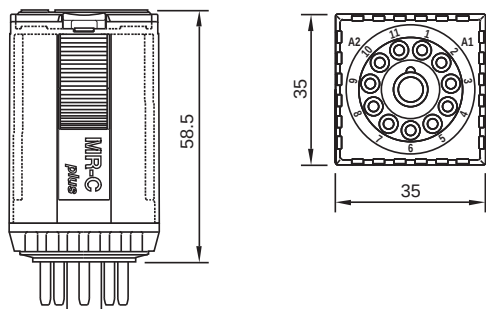


Table 2 Max. DC Load



Dimensions - mm



C3-M10



Power relay, DC
Single pole, magnetic blow out

10 A 250 V AC1 10 A 220 V DC1
3.6 A 110 V DC1 2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage (pollution 3) 250 V
Max. switching voltage (pollution 2) 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.4 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	443	54
48	286	50	48	1K7	27
115	1K7	21	110	9K2	12
230	6K8	10	220	36K1	6

Insulation

Dielectric strength (1 minute):
Open contacts 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Nominal coil power 2.4 VA (AC), 1.3 W (DC)
Operate time 20 ms
Release time 10 ms
Isolation: EN60947 pollution 3, Gr C 250 V
Dielectric strength, contacts/coils 2.5 KV

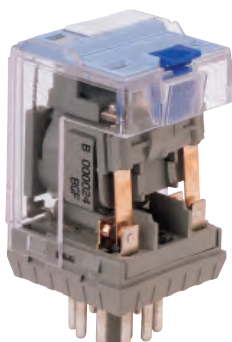
Standard Types (50/60 Hz and DC)

AC 24, 48, 115, (120), 230
X = LED (standard) C3-M10XVAC
RC suppressor C3-M10RVAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C3-M10X VDC
Free-wheeling diode C3-M10DX.... VDC
Polarity and free-wheeling diodes C3-M10FX VDC
AC/DC bridge rectifier (24, 48 or 60 V) C3-X10BX VDC



IEC 61810 EN 60947



Relay compatible with sockets:

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

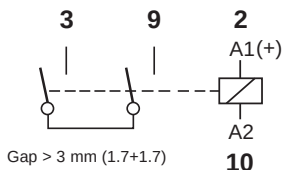


Table 1 Electrical Life, ops. x 10⁶

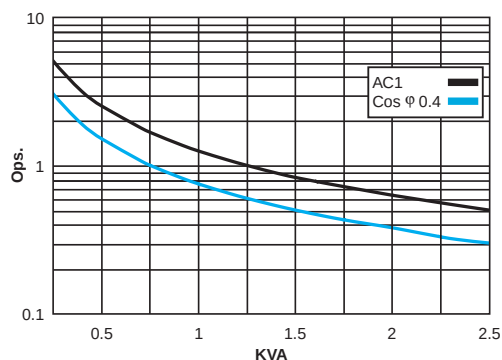
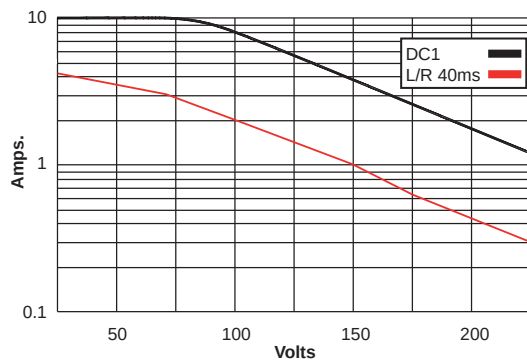
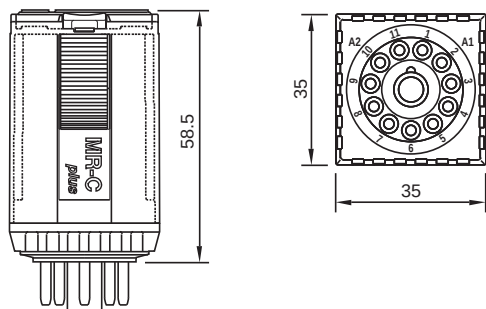


Table 2 Max. DC Load



Dimensions - mm



C3-X10



Power relay for DC applications
Single pole, N.O., double make

10 A 250 V AC1 7 A 110 V DC1
10 A 30 V DC1 1.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.4 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	443	54
48	286	50	48	1K7	27
115	1K7	21	110	9K2	12
230	6K8	10	220	36K1	6

Insulation

Dielectric strength (1 minute):
Open contacts 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V $\geq 1 \text{ G}\Omega$
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP40 / RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C3-X10X.....VAC
RC suppressor C3-X10R.....VAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C3-X10X..... VDC
Free-wheeling diode C3-X10DX VDC
Polarity and free-wheeling diodes C3-X10FX..... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C3-X10BX VDC



IEC 61810 EN 60947



Relay compatible with sockets:

S3-B, S3-S, S3-MP, S3-MS, S3-L, S3-PO

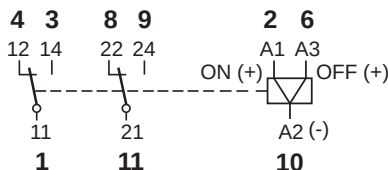


Table 1 Electrical Life, ops. x 10⁶

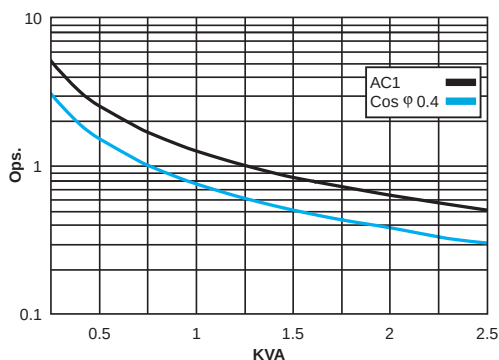
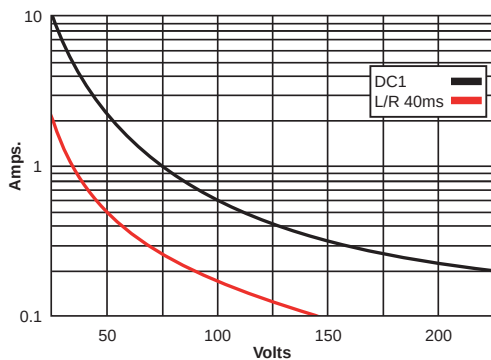
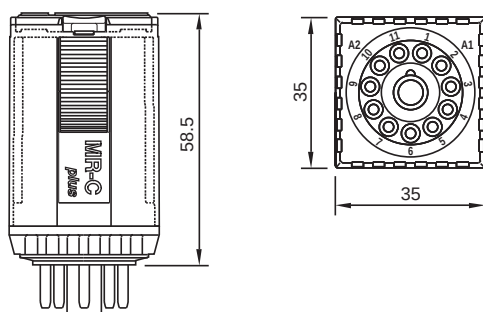


Table 2 Max. DC Load



Dimensions - mm



C3-R20



Magnetic latching
Two change-over contacts

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils

ON pulse power 1.5 VA / W
OFF pulse power 0.5 VA / W
One winding for AC. Two winding for DC

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Minimum pulse length for ON / OFF 50 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C3-R20 VAC

DC 12, 24, 48, 110

C3-R20 VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

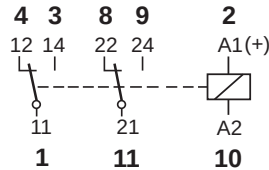


Table 1 Electrical Life, ops. x 10⁶

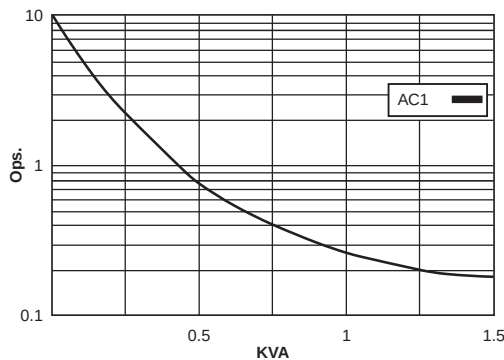
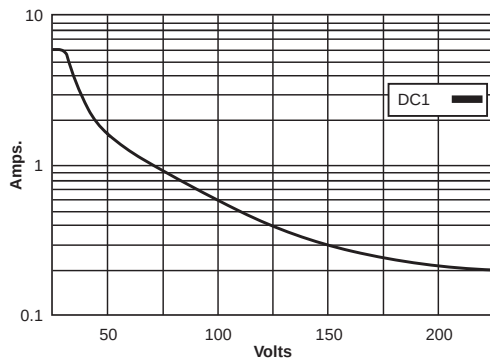
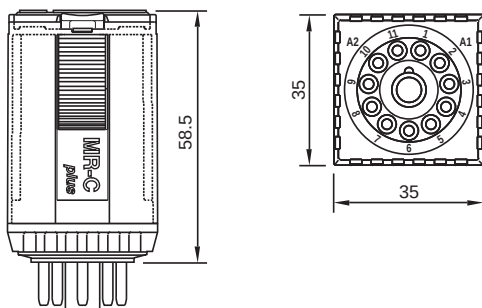


Table 2 Max. DC Load



Dimensions - mm



C3-E24



Sensible, 500 mW
Two change-over contacts, 6 A
Operating range: 0.8-1.7 x U_n

6 A 250 V AC1 6 A 30 V DC1

Contacts

Materials: Standard, code 4 AgNi + 0.2μ Au
Optional, code 8 AgNi + 10μ Au
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 500 mW

VDC	Ω	mA
24	1K1	21
48	4K6	10
60	7K2	8.3
110	24K2	4.5

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 18 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +60°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

DC 12, 24, 48, 60, 110

C3-E24 VDC

Free-wheeling diode
Polarity and free-wheeling diodes

C3-E24D VDC
C3-E24F VDC

Connecting diodes to the coil will
increase the release time.
LED available upon request.



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

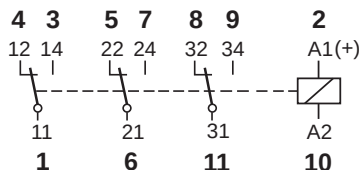


Table 1 Electrical Life, ops. x 10⁶

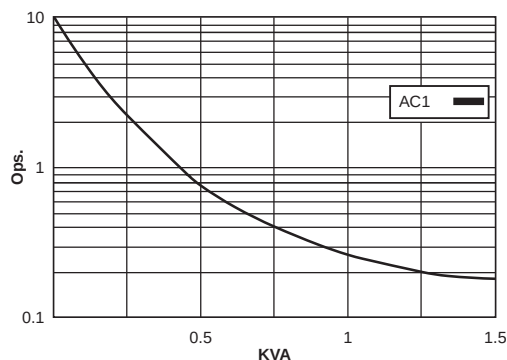
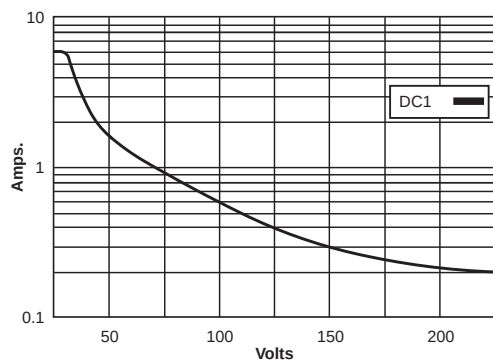
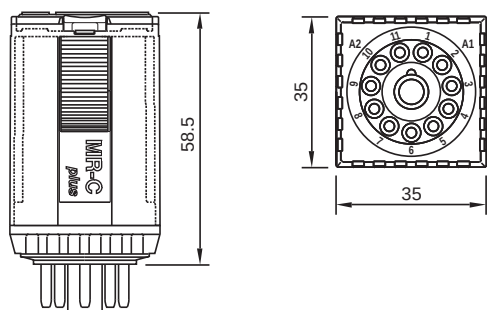


Table 2 Max. DC Load



Dimensions - mm



C3-N34



Sensitive, 800 mW

Three change-over contacts, 6 A

Operating range: 0.8-1.4 x U_N

6 A 250 V AC1 6 A 30 V DC1

Contacts

Materials:	Standard, code 4	AgNi + 0,2μ Au
	Optional, code 8	AgNi + 10μ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.5 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	800 mW

VDC	Ω	mA
24	720	33
48	2K8	17
60	4K5	13
110	15K	7

Insulation

Dielectric strength (1 minute):	Open contacts	1,000 V
	Between adjacent poles	2.5 KV
	Between contacts and coil	2.5 K
Isolation resistance at 500 V		≥3 GΩ
Isolation, IEC 61810-5:		2.5 KV / 3

Specifications

Operate time + bounce time	18 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	90 g

Standard Types

DC 24, 48, 60, 110

C3-N34 VAC

Free-wheeling diode

C3-N34D VDC

Polarity and free-wheeling diodes

C3-N34F VDC

Connecting diodes to the coil will
increase the release time.

LED available upon request.



IEC 61810 EN 60947



Relay compatible with sockets:

S3-B, S3-S, S3-MP,
S3-MS, S3-L, S3-PO

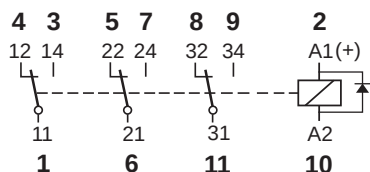


Table 1 Electrical Life, ops. x 10⁶

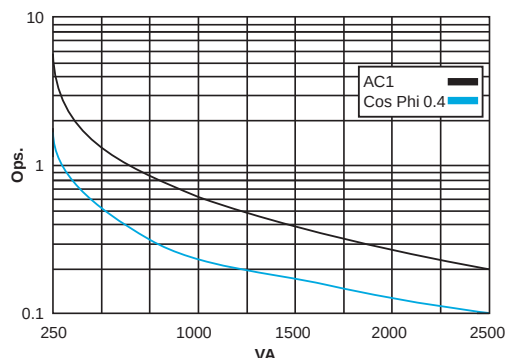
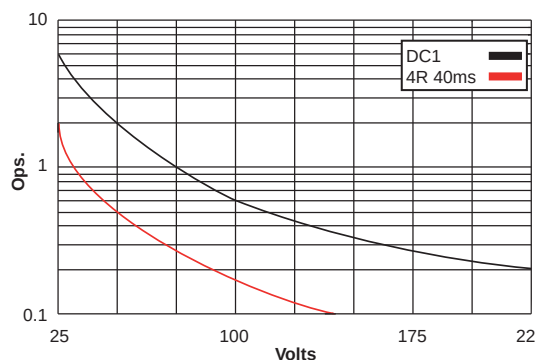
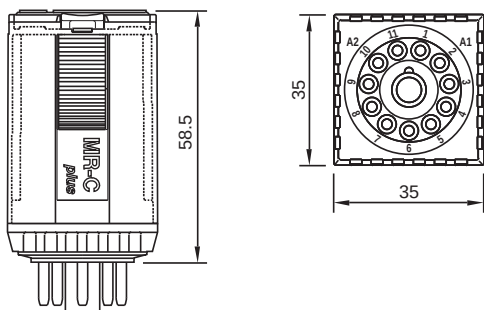


Table 2 Electrical Life, ops. x 10⁶



Dimensions - mm



R3-N30D



Railway Application Relay
According to EN 60077-1-2/99
EN 61373/99

6 A 250 V AC1 6 A 30 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 4 AgNi + 0.2μ Au
Optional, code 8 AgNi + 10μ Au
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1)
Max. DC load (Table 2)

Coils

Operation Range 0.7 U_n @ 1.25 U_n
Power Consumption 1.07 W
Generated transients V, include FWD

Voltage	Ω ± 10%	mA
24	525	46
48	2150	22
72	4930	15
110	12900	9

Isolation

Polution grade PD3
With voltage (1.2/50μs) / Dielectric strength (1 minute):
Contact coil 4 KV/2220 V
Between different poles 4 KV/2220 V
Between contacts on same pole 1550 KV/850 V

Specifications

Max working temperature 40°C
Number of mechanical operations >10 million
Thermic Class B (130°C)
Vibration: Category/Class 1/B Body Mounted
Vibration 5-150 Hz (3 axes)
Shock 5 g (3 axes)
Operation (UN)/release time 18 ms/35 ms
Weight avg. 95 g
Weight avg. Relay + Socket 150 g
Relay Protection IP 40

Standard Types

DC 24, 48, 72, 110

X = LED
Free-wheeling diode
LED and free-wheeling diode

R3-N30 VDC
R3-N30X VDC
R3-N30D VDC
R3-N30DX VDC





Relay compatible
with sockets:

S4-B, S4-L, S4-P, S4-PO

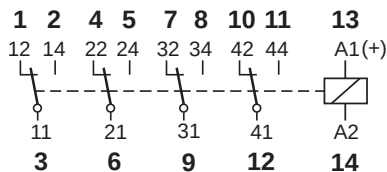


Table 1 Electrical Life, ops. x 10⁶

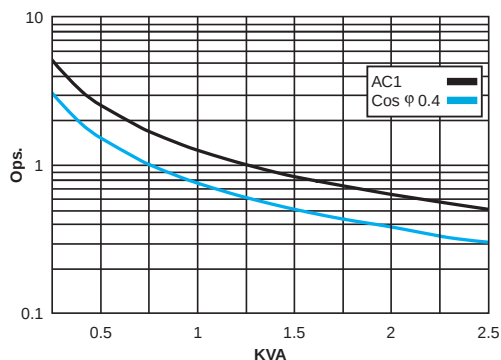
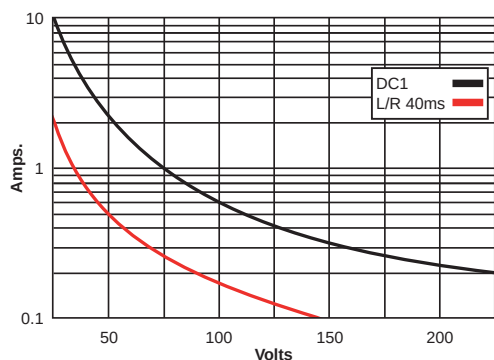
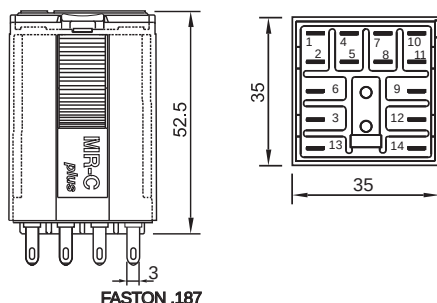


Table 2 Max. DC Load



Dimensions - mm



C4-A40



General purpose

Four change-over contacts

10 A 250 V AC1 0.5 A 110 V DC1
6 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.4 VA (AC)/1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
230	6K8	10	220	35K7	6.2

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V $\geq 1 \text{ G}\Omega$
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard)

RC suppressor

C4-A40X.....VAC

C4-A40R.....VAC

DC 24, 48, 110, 220

X = LED no polarity (standard)

Free-wheeling diode

Polarity and free-wheeling diodes

AC/DC bridge rectifier (24, 48 or 60 V)

C4-A40X.....VDC

C4-A40DXVDC

C4-A40FX.....VDC

C4-A40BXVDC



Lloyd's IEC 61810 EN 60947



**Relay compatible
with sockets:**

S4-B, S4-L, S4-P, S4-PO

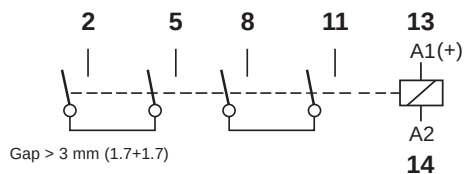


Table 1 Electrical Life, ops. x 10⁶

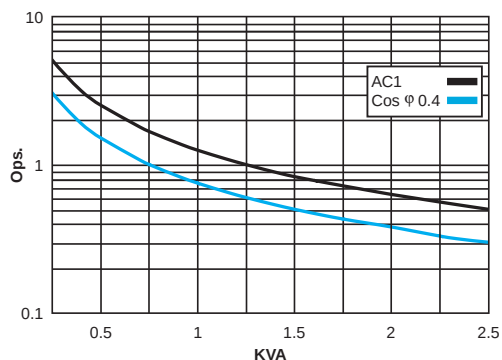
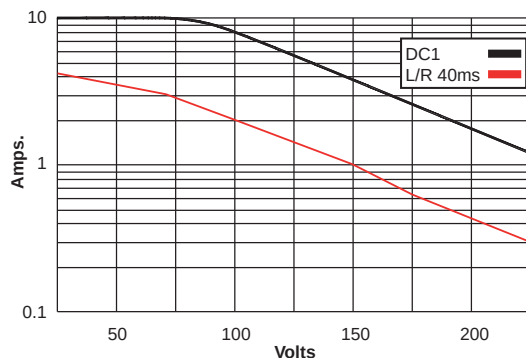
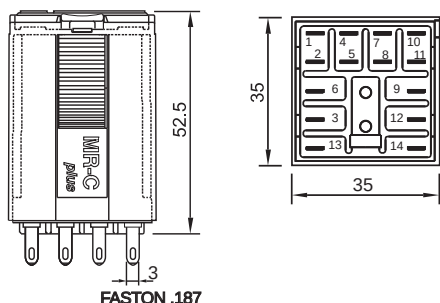


Table 2 Max. DC Load



Dimensions - mm



C4-X20



Power relay, DC applications
Two pole, N.O., double make

10 A 250 V AC1 7 A @ 110 V DC1
10 A 30 V DC1 1.2 A @ 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 0.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.4 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	54
48	286	50	48	1K8	27
115	1K7	21	110	9K2	12
230	6K8	10	220	36K1	6

Insulation

Dielectric strength (1 minute): Open contacts 2,500 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V $\leq 1 \text{ G}\Omega$
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 12 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard)

RC suppressor

C4-X20X.....VAC

C4-X20R.....VAC

DC 24, 48, 110, 220

X = LED no polarity (standard)

Free-wheeling diode

Polarity and free-wheeling diodes

AC/DC bridge rectifier (24, 48 or 60 V)

C4-X20X..... VDC

C4-X20DX VDC

C4-X20FX..... VDC

C4-X20BX VDC



IEC 61810 EN 60947



Relay compatible
with sockets:

S4-B, S4-L, S4-P, S4-PO

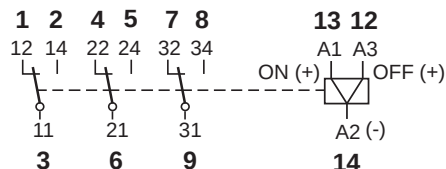


Table 1 Electrical Life, ops. x 10⁶

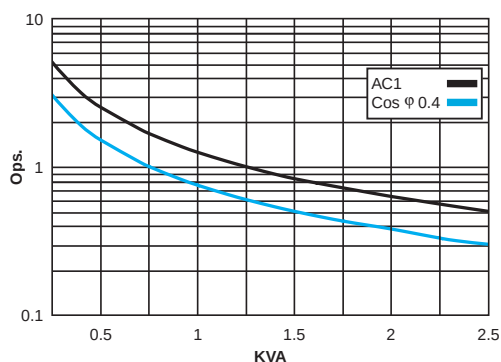
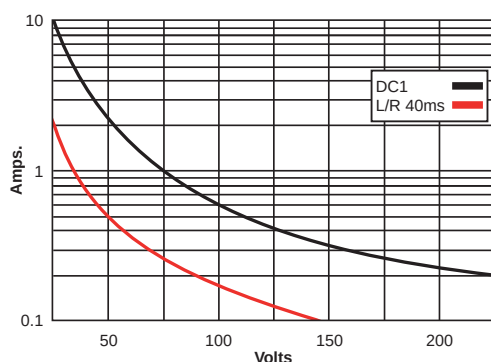
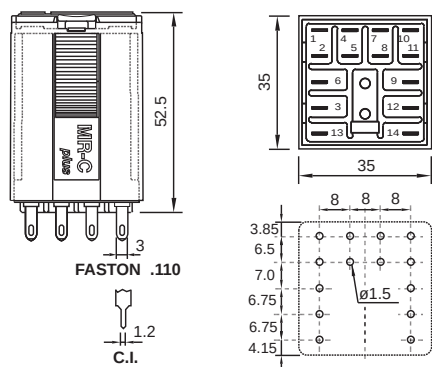


Table 2 Max. DC Load



Dimensions - mm



C4-R30



Magnetic latching relay

Three change-over contacts, 10 A

10 A 250 V AC1 0.5 A 110 V DC1

10 A 10 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μAu
Optional, code 9 AgNi + 0.2μAu
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils

ON pulse power 1.5 VA / W
OFF pulse power 0.5 VA / W
One winding for AC, Two windings for DC

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Minimum, pulse length for ON / OFF 50 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C4-R30 VAC

DC 12, 24, 48, 110

C4-R30 VDC



IEC 61810



**Relay compatible
with sockets:**

S5-S, S5-L, S5-P, S5-PO

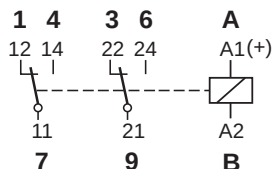


Table 1 Electrical Life, ops. x 10⁶

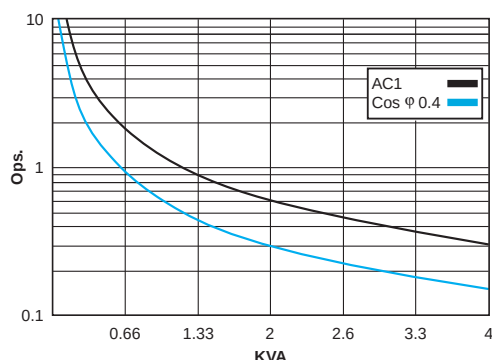
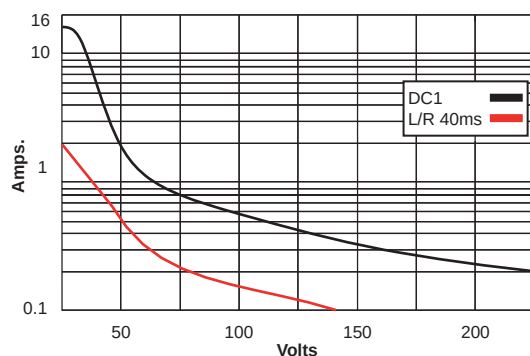
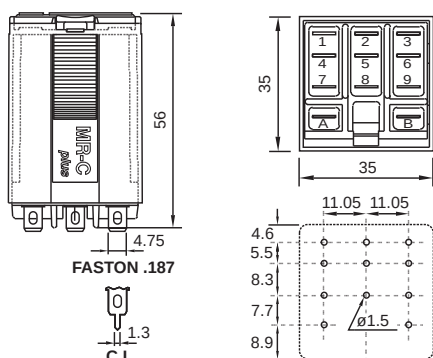


Table 2 Max. DC Load



Dimensions - mm



C5-A20



General purpose
Two change-over contacts

16 A 400 V AC1 0.5 A 110 V DC1
16 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μAu
Optional, code 9 AgNi + 0.2μAu
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.4 VA (AC)/1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
230	6K8	10	220	35K6	6

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240), 400
X = LED (standard) C5-A20X.....VAC
RC suppressor C5-A20R.....VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard) C5-A20X..... VDC
Free-wheeling diode C3-A20DX VDC
Polarity and free-wheeling diodes C5-A20FX..... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C5-A20BX VDC



Relay compatible
with sockets:

S5-S, S5-L, S5-P, S5-PO

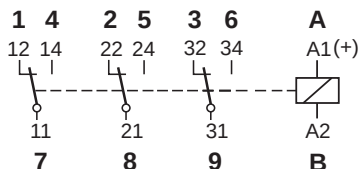


Table 1 Electrical Life, ops. x 10⁶

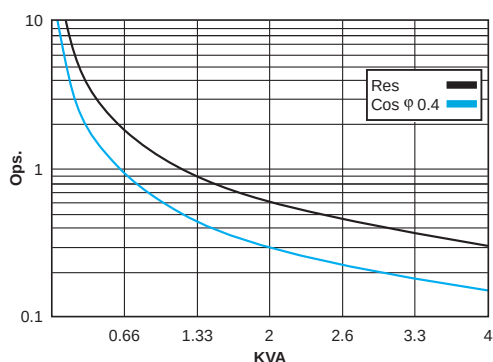
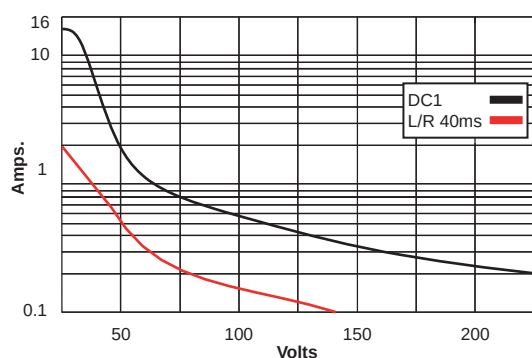
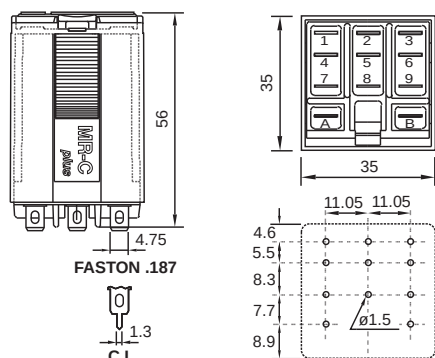


Table 2 Max. DC Load



Dimensions - mm



C5-A30



General purpose

Three change-over contacts

16 A 400 V AC1 0.5 A 110 V DC1
16 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.4 VA (AC)/1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
230	6K8	10	220	35K6	6.5
400	18K8	6			

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V $\geq 3G \Omega$
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard) C5-A30X.....VAC
RC suppressor C5-A30R.....VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard) C5-A30X.....VDC
Free-wheeling diode C3-A30DX.....VDC
Polarity and free-wheeling diodes C5-A30FX.....VDC
AC/DC bridge rectifier (24, 48 or 60 V) C5-A30BX.....VDC



IEC 6094 IEC 61810



**Relay compatible
with sockets:**

S5-S, S5-L, S5-P, S5-PO

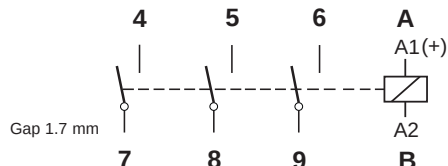


Table 1 Electrical Life, ops. x 10⁶

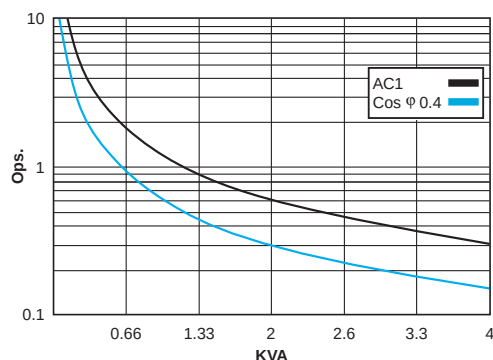
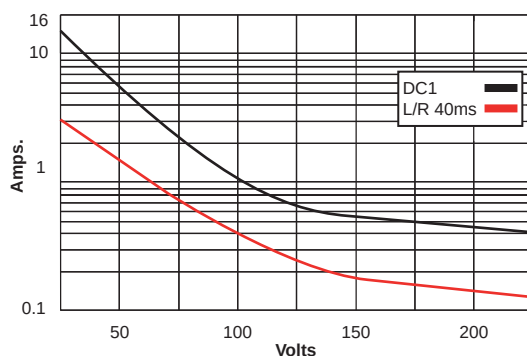
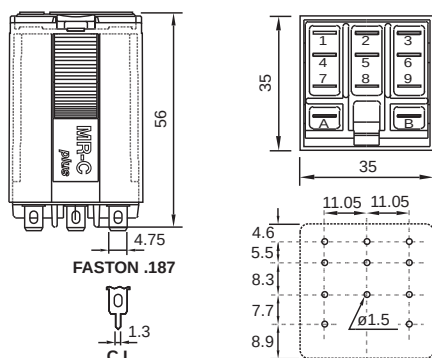


Table 2 Max. DC Load



Dimensions - mm



C5-G30



General purpose, DC applications
Three open contacts

16 A 400 V AC1 1.2 A 110 V DC1
16 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.4 VA (AC)/1.6 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	90	133
48	286	50	24	360	66
115	1K7	21	48	1K4	34
230	6K8	10	110	7K6	15
400	18K8	6	220	30K3	7.5

Insulation

Dielectric strength (1 minute): Open contacts $\geq 2,000$ V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥ 3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C5-G30X.....VAC
RC suppressor C5-G30RVAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C5-G30X..... VDC
Free-wheeling diode C3-G30DX VDC
Polarity and free-wheeling diodes C5-G30FX VDC
AC/DC bridge rectifier (24, 48 or 60 V) C5-G30BX VDC



IEC 60947 IEC 61810



Relay compatible
with sockets:

S5-S, S5-L, S5-P, S5-PO

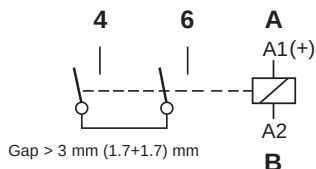


Table 1 Electrical Life, ops. x 10⁶

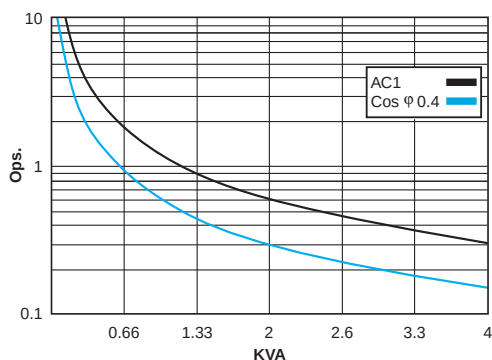
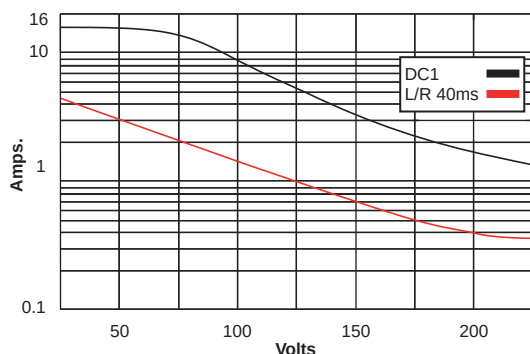
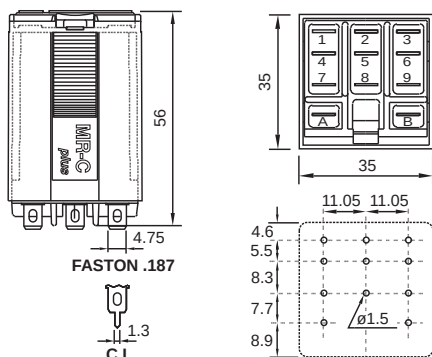


Table 2 Max. DC Load



Dimensions - mm



C5-X10



Power relay, DC applications
Single pole, N.O., double make

16 A 400 V AC1 7 A 110 V DC1
16 A 30 V DC1 1.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 2.4 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	110	108
48	286	50	48	443	54
115	1K7	21	48	1K8	27
230	6K8	10	110	9K	12
400	18K8	6	220	34K5	6.5

Insulation

Dielectric strength (1 minute):
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

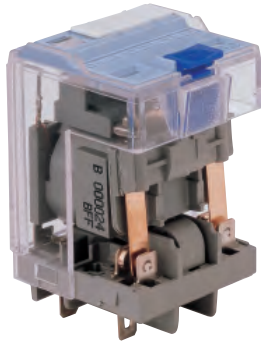
X = LED (standard) C5-X10X.....VAC
RC suppressor C5-X10R.....VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard) C5-X10X.....VDC
Free-wheeling diode C5-X10DX.....VDC
Polarity and free-wheeling diodes C5-X10FX.....VDC
AC/DC bridge rectifier (24, 48 or 60 V) C5-X10BX.....VDC



IEC 61810



**Relay compatible
with sockets:**

S5-S, S5-L, S5-P, S5-PO

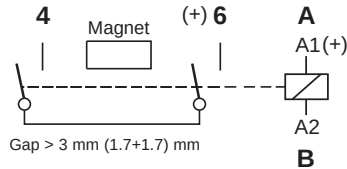


Table 1 Electrical Life, ops. x 10⁶

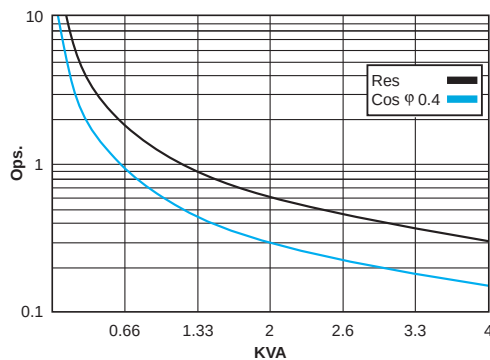
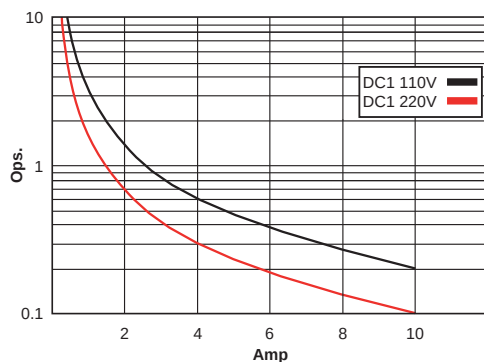
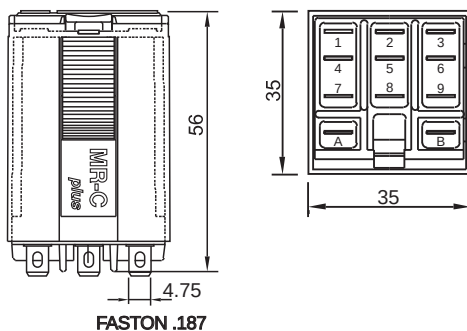


Table 2 Max. DC Load



Dimensions - mm



C5-M10



DC power relay

One N.O. pole, magnetic blow out

16 A 400 V AC1 10 A 220 V DC1

3.6 A 110 V DC Ind 2 A 220 V DC Ind

Contacts

Materials: Standard, code 0

AgNi

Max. switching current

16 A

Max. peak inrush current (20 ms)

40 A

Max. switching voltage

400 V

Max. AC load (Table 1)

4 KVA

Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage

≤0.8 x U_n

Drop-out voltage

≥0.1 x U_n

Nominal coil power

2.4 VA (CA)/1.3 W (CC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	110	108
48	286	50	48	443	54
115	1K7	21	48	1K8	27
230	6K8	10	110	9K	12
400	18K8	6	220	34K5	6.5

Insulation

Dielectric strength (1 minute):

Open contacts

4,000 V

Between contacts and coil

4 KV

Isolation resistance at 500 V

≥3 GΩ

Isolation, EN 60947/IEC 61810-5:

4 KV/3

Specifications

Operate time + bounce time

20 ms

Release time + bounce time

10 ms

Ambient temperature

-40°C (no ice) to +70°C

Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays

Electrical life at nominal load

≥100,000 ops.

Operating frequency at nominal load

1,200/hour

Protection degree

IP 40/RT1

Weight avg.

90 g

Standard Types (50 / 60 Hz and CC)

AC 24, 48, 115, (110 - 120), 230

X = LED (standard)

C5-M10XVAC

RC suppressor

C5-M10RVAC

DC 12, 24, 48, 110, 120/125,220

X = LED

C5-M10X VDC

Free-wheeling diodes

C5-M10DX.... VDC

Polarity and free-wheeling diodes

C5-M10FX VDC

AC/DC bridge rectifier (24, 48 or 60 V)

C5-M10BX.... VDC



IEC 61810 EN 60947



Relay compatible
with sockets:

S5-S, S5-L, S5-P, S5-PO

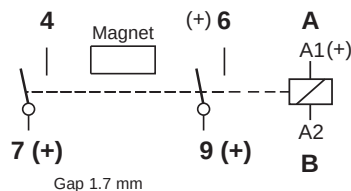


Table 1 Electrical Life, ops. x 10⁶

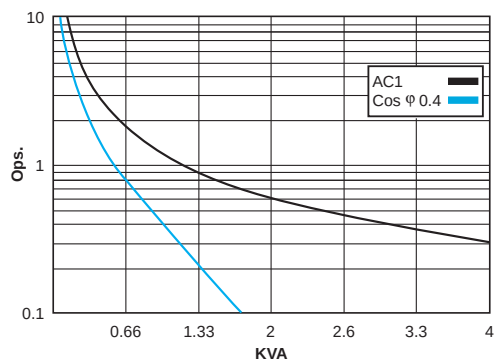
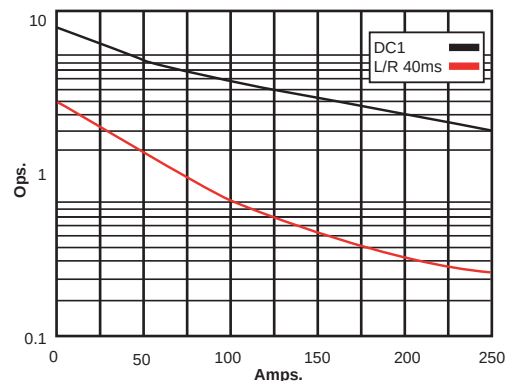
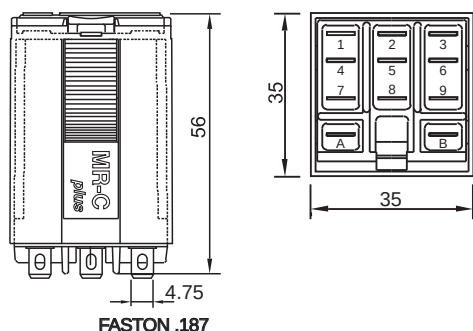


Table 2 Max. DC Load



Dimensions - mm



C5-M20



Power relay, DC

Double pole, N.O., magnetic blow out

16 A 250 V AC1 7 A 110 V DC1
3 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 250 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage 0.8 x U_n
Drop-out voltage 0.1 x U_n
Nominal coil power 2.4 VA (CA) / 1.6 W (CC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	90	133
48	286	50	24	360	66
115	1K7	21	48	1440	33
230	6K8	10.4	110	7K6	15

Insulation

Dielectric strength (1 minute):
Open contacts 2 kV
Between adjacent poles 4 kV
Between contacts and coil 3 kV
Isolation resistance at 500 V ≥3 GΩ
Isolation, EN 60947/IEC 61810-5: 4 kV/3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +60°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥75,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 90 g

Standard Types (50 / 60 Hz and CC)

AC 24, 48, 115, (120), 230 (240)
X = LED (standard) C5-M20XVAC
RC suppressor C5-M20RVAC

DC 12, 24, 48, 110, 120/125, 220
X = LED C5-M20XVCC
Free-wheeling diodes C5-M20DX.....VCC
Polarity and free-wheeling diodes C5-M20FXVCC
AC/DC bridge rectifier (24, 48 or 60 V) C5-M20BX....VCC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S5-S, S5-L, S5-P, S5-PO

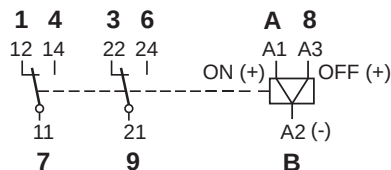


Table 1 Electrical Life, ops. x 10⁶

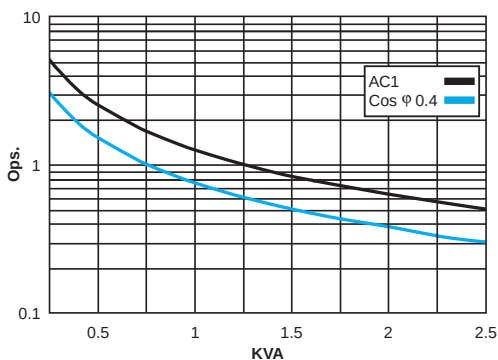
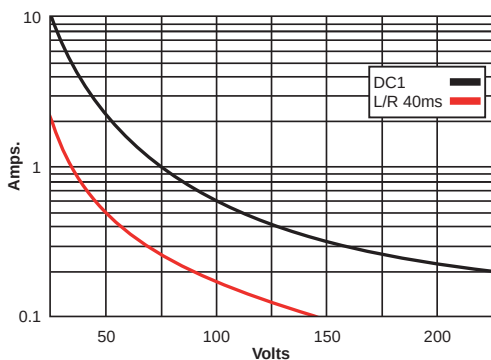
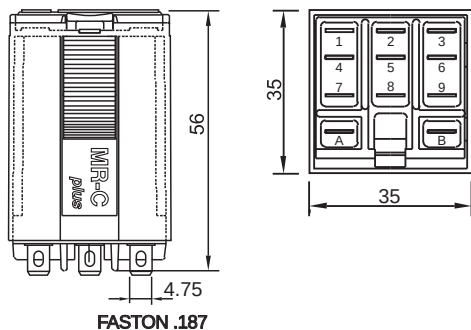


Table 2 Max. DC Load



Dimensions - mm



FASTON .187

C5-R20



Magnetic latching relay
Two Change-over contacts, 10 A

10 A 400 V AC1 10 A 30 V DC1
0.2 A 220 V DC1 0.5 A 110 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

ON pulse power 1.5 VA/W
OFF pulse power 0.5 VA/W
One winding for AC, two windings for DC

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Insulation

Dielectric strength (1 minute):
Open contacts 1,000 V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, EN 60947/IEC 61810-5: 4 KV/3

Specifications

Minimum, pulse length for ON / OFF 50 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (110-120), 230, (240)
C5-R20 VAC

DC 12, 24, 48, 110

C5-R20 VDC



IEC 61810



Relay compatible
with sockets:

S7-16

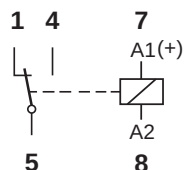


Table 1 Electrical Life, ops. x 10⁶

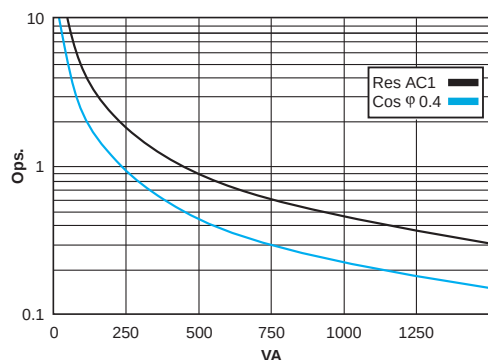
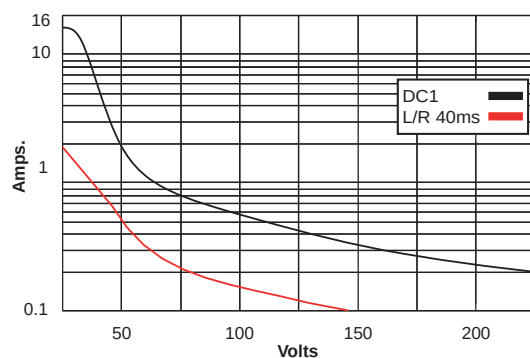
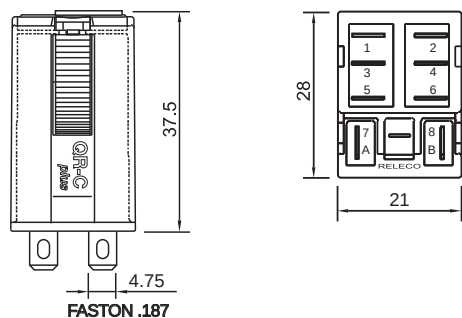


Table 2 Max. DC Load



Dimensions - mm



C7-A10



General purpose

One change-over contact, 16 A

16 A 250 V AC1 **0.5 A 110 V DC1**
16 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 250 V
Max. AC load (Table 1) 4 KVA
Max. DC load (Table 2)
Only plug-in S7-16 socket

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.2 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	111	108
48	686	25	24	432	55
115	4K3	10.4	48	1K7	28
230	18K6	5.2	110	9K2	12

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

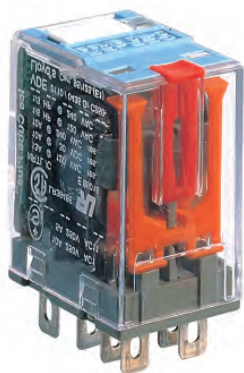
Standard Types

AC 50 Hz, (60 Hz): **24, 48, 115, (120), 230, (240)**
X = LED (standard) **C7-A10X.....VAC**

DC **12, 24, 48, 110,**
X = LED, no polarity (standard) **C7-A10X.....VDC**
Free-wheeling diode **C7-A10DXVDC**
Polarity and free-wheeling diodes **C7-A10FX.....VDC**
AC/DC bridge rectifier (24, 48 or 60 V) **C7-A10BXVDC**

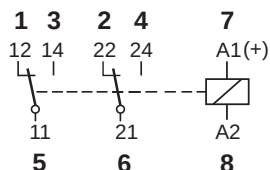


IEC 61810 EN 60947



Relay compatible with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-PI



C7-A20



General purpose
Two pole, change-over contacts

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 1.2 VA (AC)/1 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
72	1587	17	48	2k3	21
115	4K3	10.4	72	5089	14.1
230	18K6	5.2	110	11K4	11

Table 1 Electrical Life, ops. x 10⁶

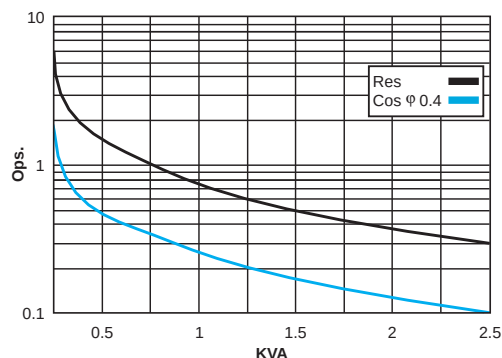
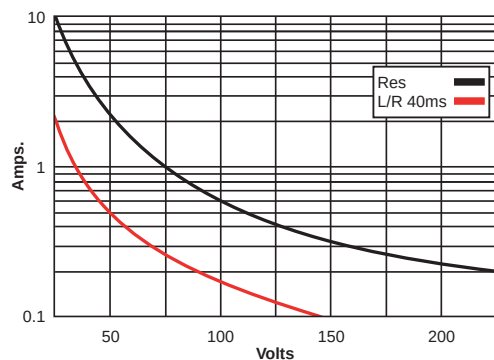


Table 2 Max. DC Load



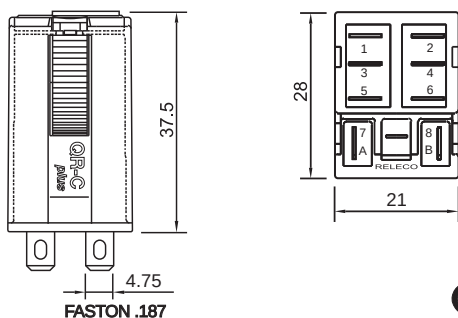
Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥ 1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

Dimensions - mm



Standard Types

AC 50 Hz, (60 Hz): 24, 48, 72, 115, (120), 230, (240)
X = LED (standard) C7-A20X.....VAC

DC 12, 24, 48, 72, 110,
X = LED, no polarity (standard) C7-A20X..... VDC
Free-wheeling diode C7-A20DX VDC
Polarity and free-wheeling diodes C7-A20FX..... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C7-A20BX VDC



Relay compatible
with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-PI

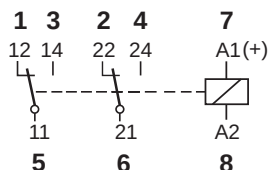


Table 1 Electrical Life, ops. x 10⁶

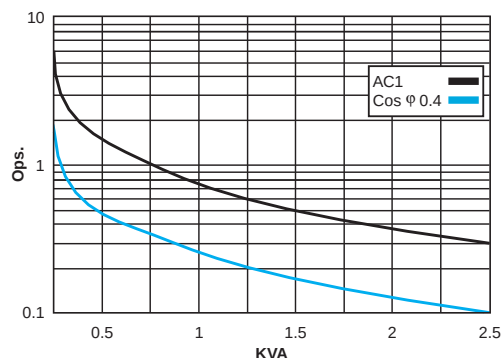
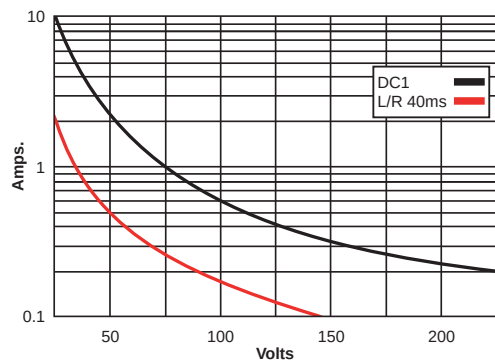
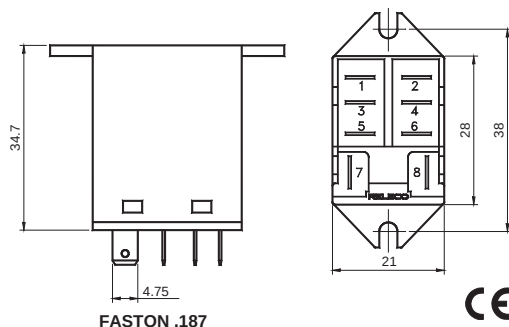


Table 2 Max. DC Load



Dimensions - mm



C7-A20E



General purpose
Two pole

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 9 AgNi + 0.2μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.2 VA (AC)/1 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
115	4K3	10.4	48	2K3	21
230	18K6	5.2	110	11K4	11

Insulation

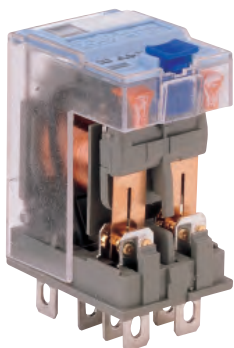
Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C7-A20E.....VAC
DC 12, 24, 48, 110
C7-A20E.....VDC



Relay compatible
with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

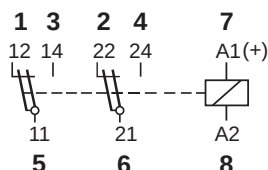


Table 1 Electrical Life, ops. x 10⁶

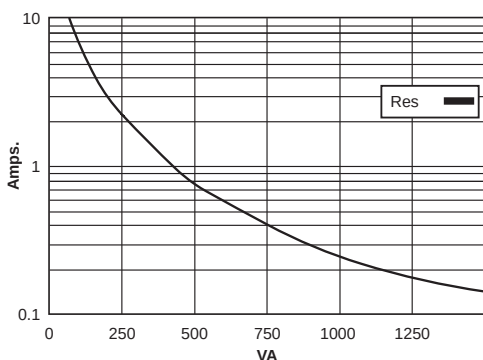
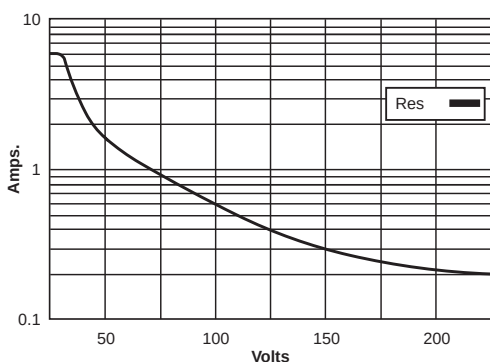
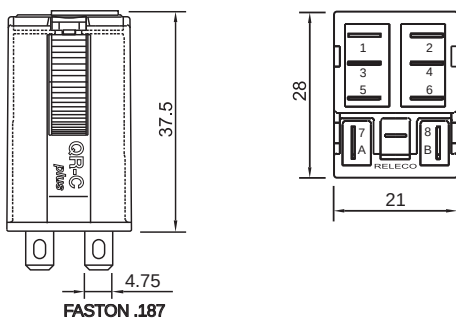


Table 2 Max. DC Load



Dimensions - mm



C7-T21

Low level

Two change-over bifurcated contacts

6 A 250 V Res 6 A 30 V DC1

Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.3μ Au
	Optional, code 2	AgNi + 10μ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.2 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	1.2 VA (AC)/1 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
115	4K3	10.4	48	2K3	21
230	18K6	5.2	110	11K4	11

Insulation

Dielectric strength (1 minute): Open contacts	1,000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥1 GΩ
Isolation, IEC 61810-5:	2.5 KV/3

Specifications

Operate time + bounce time	16 ms
Release time + bounce time	8 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	43 g

Standard Types

AC 50 Hz, (60 Hz): **24, 48, 115, (120), 230, (240)**
X = LED (standard) **C7-T21XVAC**

DC 12, 24, 48, 110
X = LED, no polarity (standard) **C7-T21X VDC**
Free-wheeling diode **C7-T21DX..... VDC**
Polarity and free-wheeling diodes **C7-T21FX..... VDC**
AC/DC bridge rectifier (24, 48 or 60 V) **C7-T21BX..... VDC**



Relay compatible
with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

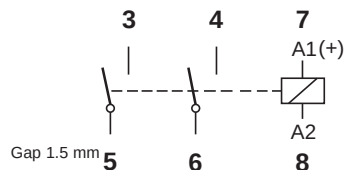


Table 1 Electrical Life, ops. x 10⁶

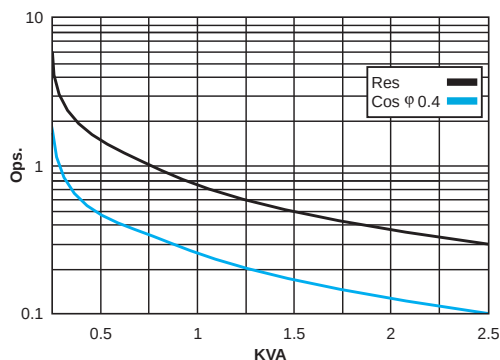
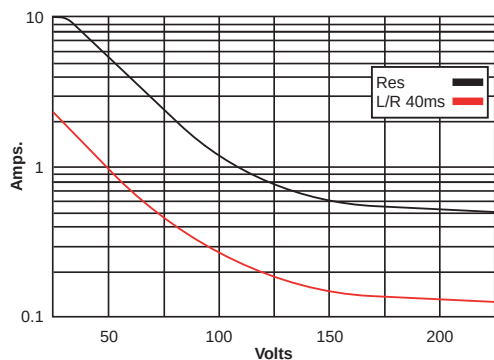
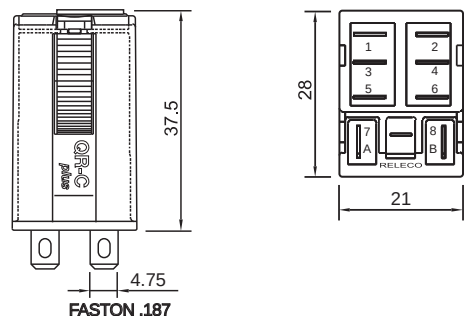


Table 2 Max. DC Load



Dimensions - mm



C7-G20



Power relay, DC application
Two open contacts, Gap 1.5 mm

10 A 250 V AC1 0.8 A 110 V DC1
10A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.5 VA (AC)/1.5 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	99	121
48	611	31	24	388	61
115	3K6	13	48	1K5	32
230	14K6	6.5	110	8K	14

Insulation

Dielectric strength (1 minute): Open contacts 2,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/3

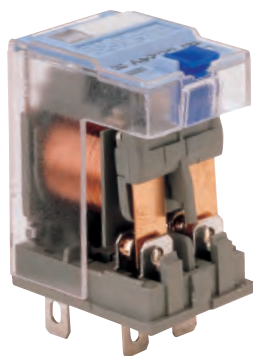
Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C7-G20X.....VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C7-G20X.....VDC
Free-wheeling diode C7-G20DX....VDC
Polarity and free-wheeling diodes C7-G20FXVDC
AC/DC bridge rectifier (24, 48 or 60 V) C7-G20BX....VDC



Relay compatible with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

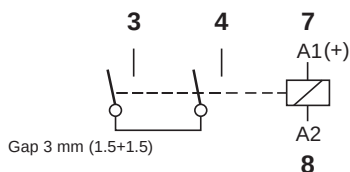


Table 1 Electrical Life, ops. x 10⁶

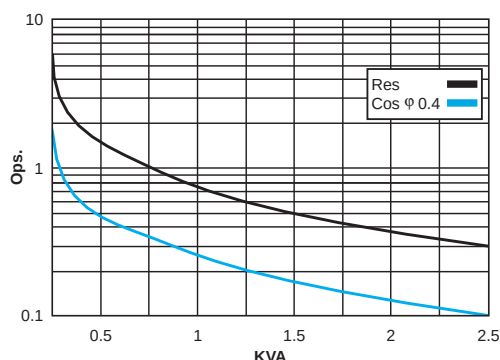
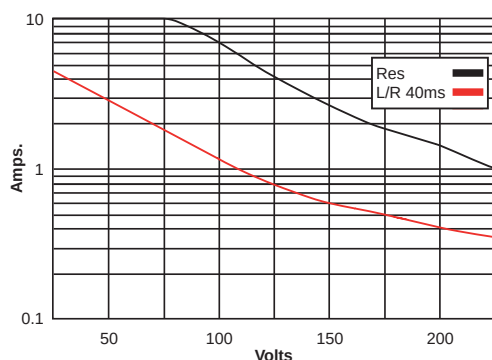
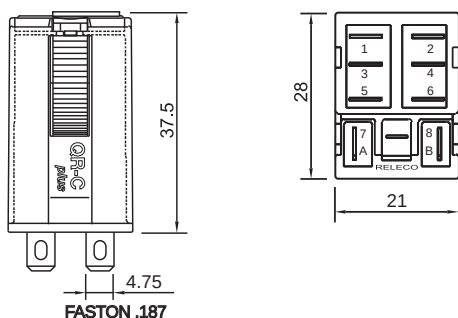


Table 2 Max. DC Load



Dimensions - mm



C7-X10



Power relay, DC application
Single pole, NO, double make

10 A 250 V AC1 6 A 110 V DC1
10 A 30V DC1 1 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 1.5 VA (AC)/1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	111	108
48	611	31	24	432	55
115	3K6	13	48	1K7	27
230	14K6	6.5	110	9K2	12

Insulation

Dielectric strength (1 minute):
Open contacts 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V $\geq 1 \text{ G}\Omega$
Isolation, IEC 61810-5: 2.5 KV/3

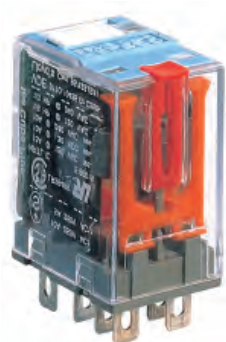
Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C7-X10X.....VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C7-X10X.....VDC
Free-wheeling diode C7-X10DXVDC
Polarity and free-wheeling diodes C7-X10FX.....VDC
AC/DC bridge rectifier (24, 48 or 60 V) C7-X10BXVDC



Relay compatible with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

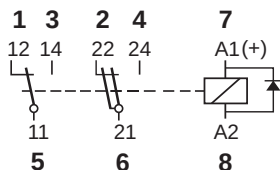


Table 1 Electrical Life, ops. x 10⁶

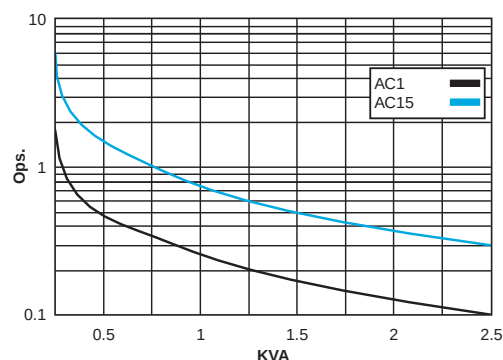
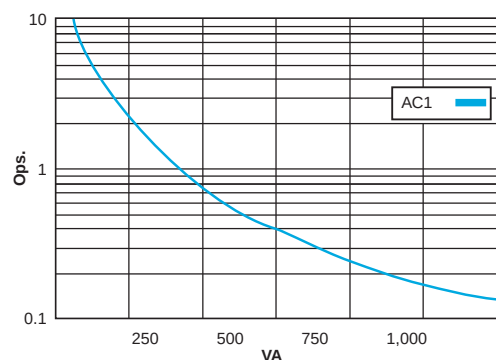
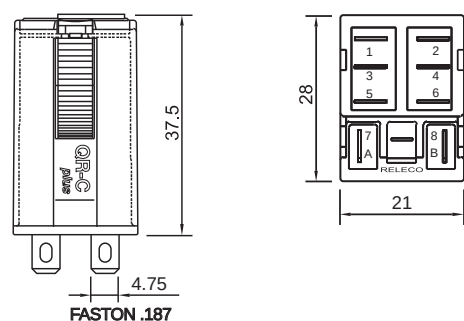


Table 2 Max. DC Load



Dimensions - mm



C7-H23



Power contact 10 A and bifurcated contact for current level

10 A	250 V	AC1	6 A	250 V	AC1
6 A	30 V	DC1	10 A	30 V	DC1

Contacts

Power Contacts

Standard material	AgNi
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	250 V
Max. AC load (Table 1)	2.5 KVA
Max. DC load (Table 2)	

Bifurcated Contacts

Standard material	AgNi + 0.3μ Au
Max. switching current	6 A
Max. peak inrush current (20 ms)	15 A
Max. switching voltage	250 V
Minimum current	1 mA 5 V
Max. DC load (Table 2)	

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	1.2 VA (AC)/1 W (DC)

VAC	Ω ± 10%	mA	VDC	Ω ± 10%	mA
24	174	50	12	148	81
115	4K3	10.4	48	2K3	21
230	18K6	5.2	110	11K4	11

Insulation

Dielectric strength (1 minute):	
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation, IEC 61810-5:	2.5 KV/3

Specifications

Max. working temperature	60°C
Mechanical life ops.	≥10 million
Protection degree	IP 40
Weight avg.	43 g

Standard Types

AC 24, 115, 230

X = LED

C7-H23 VAC
C7-H23X VAC

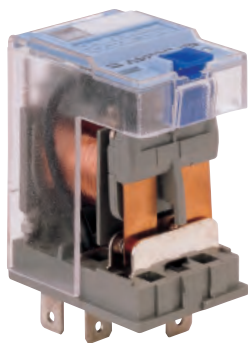
DC 12, 24, 48, 110

X = LED

Free-wheeling diode C7-H23 VDC
Polarity and free-wheeling diodes C7-H23DX VDC
AC/DC bridge rectifier (24, 48 or 60 V) C7-H23FX VDC
C7-H23BX VDC



IEC 61810 EN 60947



Relay compatible with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

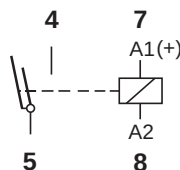
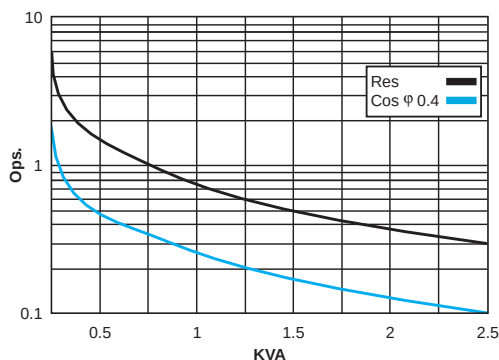
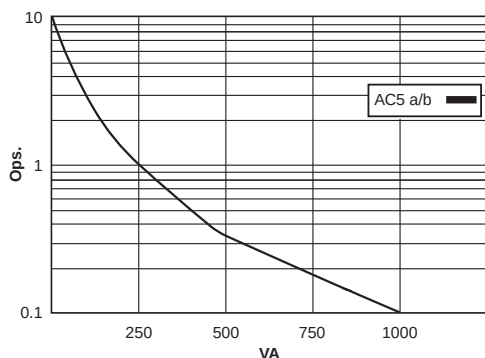


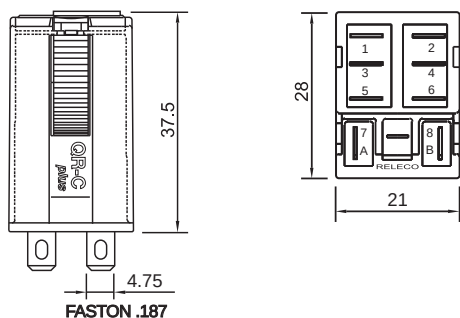
Table 1 Electrical Life, ops. x 10⁶



t Max. DC Load



Dimensions - mm



C7-W10



High inrush current
Single pole, wolfram and silver contacts

10 A 250 V AC 250 V AC5a/b

Contacts

Materials:	Standard, code 0	AgNi
Max. switching current		10 A
Max. peak inrush current (2.5 ms)		500 A
Max. switching voltage		250 V
Max. AC load (Table 1)		2.5 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	1.5 VA (AC)/1.5 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	99	121
48	611	31	24	388	61
115	3K6	13	48	1K5	32
230	14K6	4.5	110	8K	14

Insulation

Dielectric strength (1 minute):	
Open contacts	1,000 V
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥1 GΩ
Isolation, IEC 61810-5:	2.5 KV

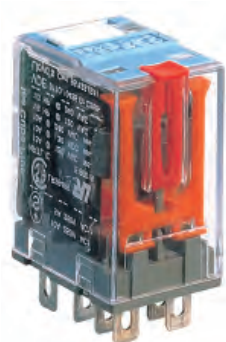
Specifications

Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C7-W10X.....VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C7-W10X..... VDC
Free-wheeling diode C7-W10DX ... VDC
Polarity and free-wheeling diodes C7-W10FX.... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C7-W10BX ... VDC



Relay compatible with sockets:

S7-M, S7-L, S7-P,
S7-PO, S7-I/O

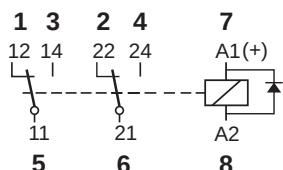


Table 1 Electrical Life, ops. x 10⁶

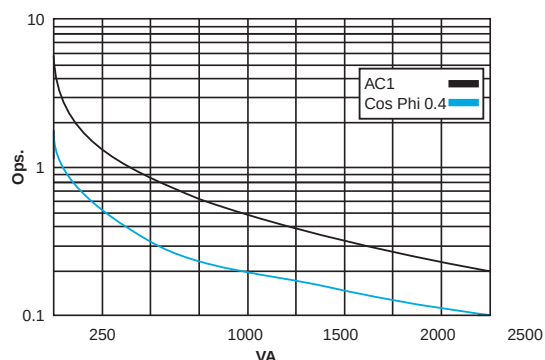
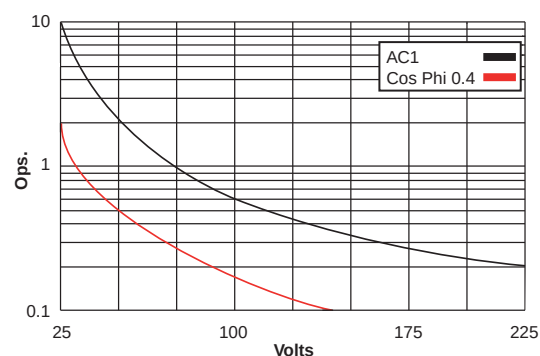
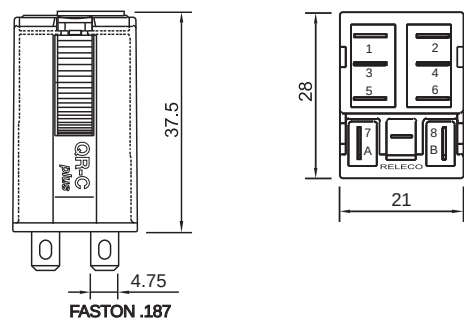


Table 2 Electrical Life, ops. x 10⁶



Dimensions - mm



R7-A20D



Railway Application Relay

According to EN 60077-1-2/99 - EN 61373/99

10 A 250 V AC1 10 A 30 V DC1

Contacts

Materials:	Standard, code 0	AgNi
	Optional, code 4	AgNi + 0.2μ Au
	Optional, code 8	AgNi + 10μ Au
Max. switching current		10 A
Max. peak inrush current (20 ms)		30 A
Max. switching voltage		250 V
Max. AC load (Table 1)		
Max. DC load (Table 2)		

Coils

Operation Range	0.7 U _n @ 1.25 U _n
Power Consumption	>0.1 U _n
Power Consumption	1.07 W
Generated transients	OV, include FWD

Voltage	Ω ± 10%	mA
24	535	45
48	2004	24
72	4750	15
110	11337	10

Isolation

Polution grade	PD3
With voltage (1.2/50μs) / Dielectric strength (1 minute)	
Contact coil	4 KV/2,220 V
Between different poles	4 KV/2,220 V
Between contacts on the same pole	1,550 V

Specifications

Max working temperature	40°C
Number of mechanical operations	20 million
Thermic Class	B (130°C)
Vibration: Category/Class	1/B Body Mounted
Vibration	5-150 Hz (3 axes)
Shock	5 g (3 axes)
Operation (UN)/release time	10 ms/15 ms
Weight avg.	35 g
Weight avg. Relay + Socket	75 g
Relay Protection	IP 40

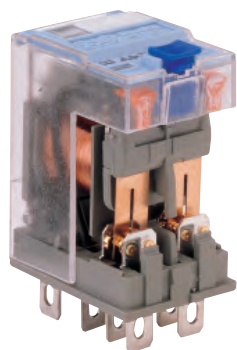
Standard Types

DC 24, 48, 72, 110

Free-wheeling diode

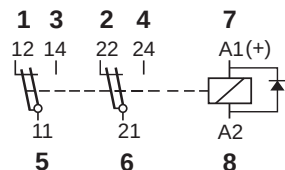
R7-A20D..... VDC





**Relay compatible
with sockets:**

**S7-M, S7-L, S7-P,
S7-PO, S7-I/O**



R7-T21D



Railway Application Relay

According to EN 60077-1-2/99 - EN 61373/99

6 A 250 V AC1 6 A 30 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.2μ Au
	Optional, code 2	AgNi + 10μ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		
Max. DC load		100,000 ops.

Coils

Operation Range	0.7 Un @ 1.25 Un
Power Consumption	>0.1 Un
Power Consumption	1.07 W
Generated transients	OV, include FWD

Voltage	Ω ± 10%	mA
24	535	45
48	2004	24
72	4750	15
110	11337	10

Table 1 Electrical Life, ops. x 106

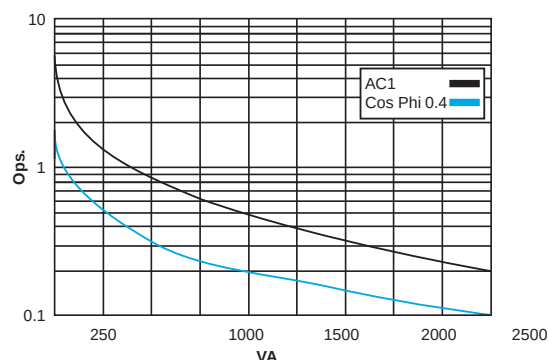
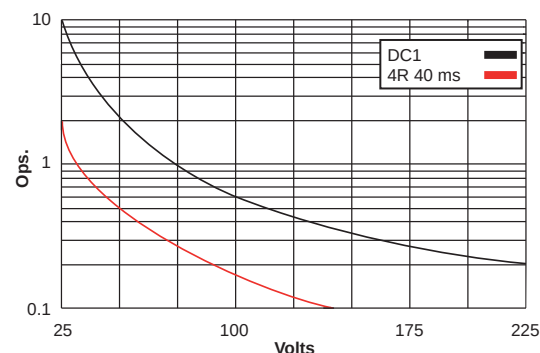
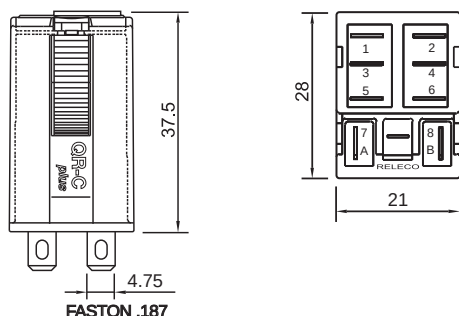


Table 2 Electrical Life, ops. x 106



Dimensions - mm



Isolation

Polution grade	PD3
With voltage (1.2 / 50μs)/Dielectric strength (1 minute)	
Contact coil	4 KV/2,220 V
Between different poles	4 KV/2,220 V
Between contacts on the same pole	1,550 V

Specifications

Max working temperature	40°C
Number of mechanical operations	20 million
Thermic Class	B (130°C)
Vibration: Category/Class	1/B Body Mounted
Vibration	5-150 Hz (3 axes)
Shock	5 g (3 axes)
Operation (UN)/release time	10 ms/15 ms
Weight avg.	35 g
Weight avg. Relay + Socket	75 g
Relay Protection	IP 40

Standard Types

DC 24, 48, 72, 110

Free-wheeling diode

R7-T21D..... VDC





Relay compatible
with sockets:

S9-M, S9-L, S9-P, S9-PO

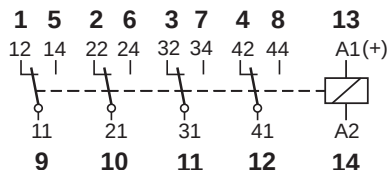


Table 1 Electrical Life, ops. x 10⁶

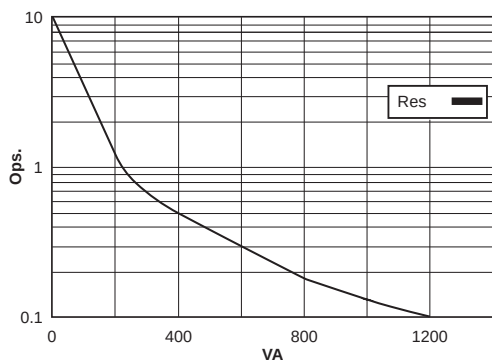
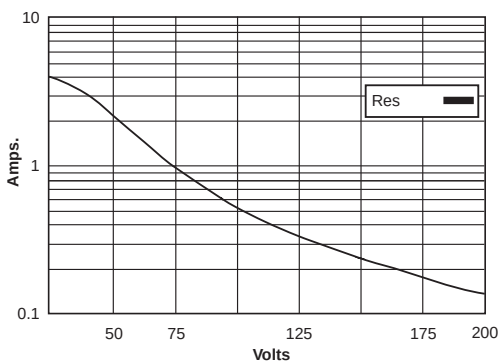
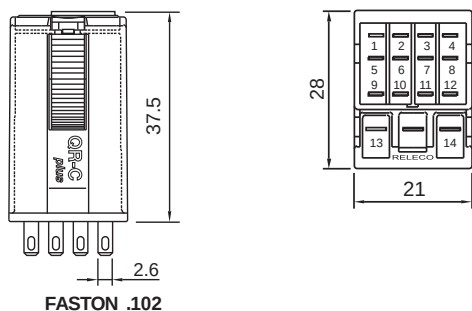


Table 2 Max. DC Load



Dimensions - mm



C9-A41



General purpose

Four pole, change-over contacts

5 A 250 V AC1

5 A 30 V DC1

0.2 A 110 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.2μAu
	Optional, code 2	AgNi + 10μAu
Max. switching current		5 A
Max. peak inrush current (2.5 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1250 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	1.2 VA (AC)/1 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
72	1587	17	48	2K3	21
115	4K3	10.4	172	5089	14.1
230	18K6	5.2	110	11K4	11

Insulation

Dielectric strength (1 minute):	Open contacts	1,000 V
	Between adjacent poles	2 KV
	Between contacts and coil	2.5 KV
Isolation resistance at 500 V		≥1 GΩ
Isolation, IEC 61810-5:		2.5 KV

Specifications

Operate time + bounce time	10 ms
Release time + bounce time	6 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	43 g

Standard Types

AC 50 Hz, (60 Hz): **24, 48, 72, 115, (120), 230, (240)**

X = LED (standard)

C9-A41X.....VAC

DC **12, 24, 48, 72, 110**

X = LED, no polarity (standard)

C9-A41X.....VDC

Free-wheeling diode

C9-A41DXVDC

Polarity and free-wheeling diodes

C9-A41FX.....VDC

AC/DC bridge rectifier (24, 48 or 60 V)

C9-A41BXVDC



**Relay compatible
with sockets:**
S9-M, S9-L, S9-P, S9-PO

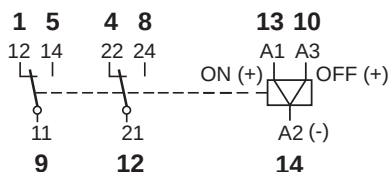


Table 1 Electrical Life, ops. x 10⁶

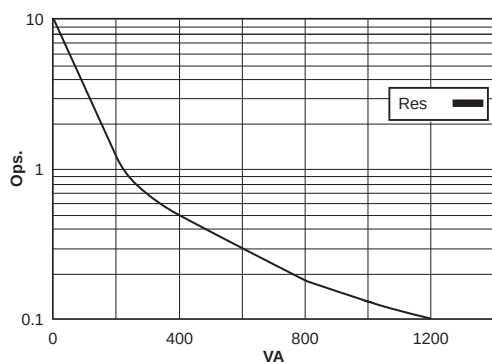
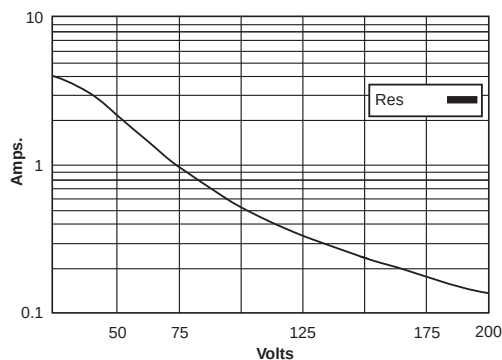
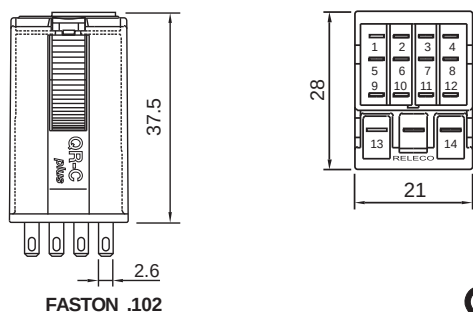


Table 2 Max. DC Load



Dimensions - mm



C9-R21



Magnetic latching relay
Two change-over contacts, 5 A

5 A 120 V AC1
5 A 30 V DC1

Contacts

Materials: Standard, code 1 AgNi + 0.2μAu
Max. switching current 5 A
Max. peak inrush current (10 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1,200 KVA
Max. DC load (Table 2)

Coils

ON pulse power 1.2 VA/W
OFF pulse power 0.3 VA/W
One winding for AC. Two windings for DC.

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	50	8	12	100	25
48	25	4	24	50	12
115	10	2	48	25	6
230	5	1	60	20	5

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2 KV
Between contacts and coil 2 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 2.5 KV/2

Specifications

Minimum, pulse length for ON/OFF 50 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C9-R21 VAC

DC 12, 24, 48, 60

C9-R21 VDC



**Relay compatible
with sockets:**

S9-M, S9-L, S9-P, S9-PO

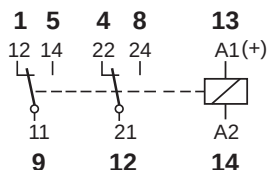


Table 1 Electrical Life, ops. x 10⁶

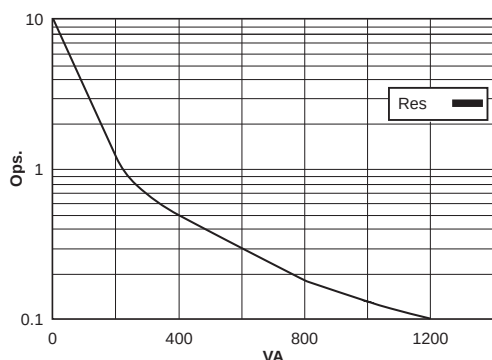
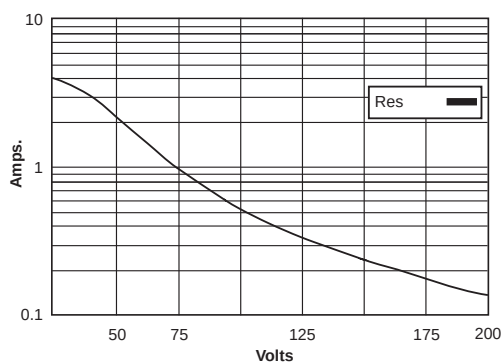
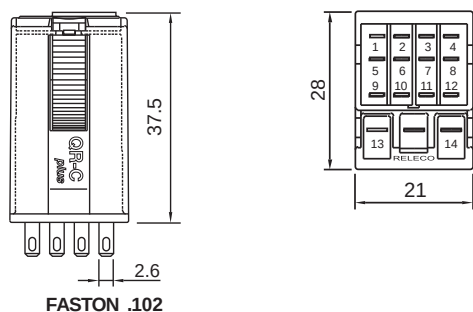


Table 2 Max. DC Load



Dimensions - mm



C9-E21



General purpose. Sensitive 500 mW
Two pole, change-over contacts
DC operating range: 0.8-1.7 x U_n

5 A 250 V AC1 5 A 30 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0,2μAu
	Optional, code 2	AgNi + 10μAu
Max. switching current		5 A
Max. peak inrush current (2.5 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,200 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	0.8 VA (AC)/0.5 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	1K1	21	12	288	42
48	4K6	10	24	1K1	21
115	5K9	7	48	4K6	10
230	23K9	3.5	110	24K2	4.5

Insulation

Dielectric strength (1 minute): Open contacts	1,000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥1 GΩ
Isolation, IEC 61810-5:	2.5 KV/3

Specifications

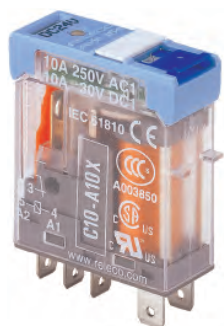
Operate time + bounce time	10 ms
Release time + bounce time	6 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection degree	IP 40/RT1
Weight avg.	40 g

Standard Types

AC 50 Hz, (60 Hz): **24, 48, 115, (120), 230, (240)**
X = LED (standard) **C9-E21X.....VAC**

DC 12, 24, 48, 110

X = LED, no polarity (standard)	C9-E21X.....VDC
Free-wheeling diode	C9-E21DXVDC
Polarity and free-wheeling diodes	C9-E21FX.....VDC
AC/DC bridge rectifier (24, 48 or 60 V)	C9-E21BXVDC



**Relay compatible
with sockets:**

S10, S10-M, S10-P, S10-K

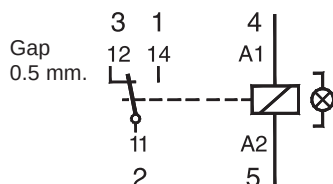


Table 1 Electrical Life, ops. x 10⁶

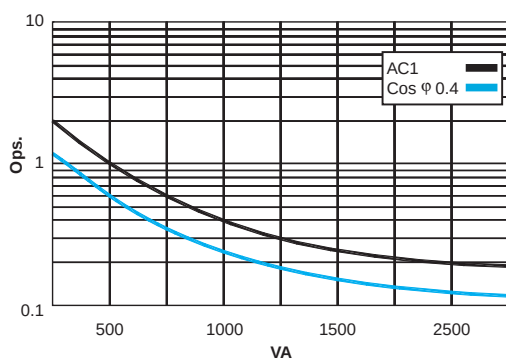
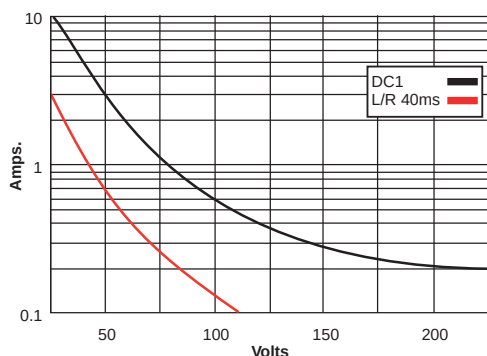
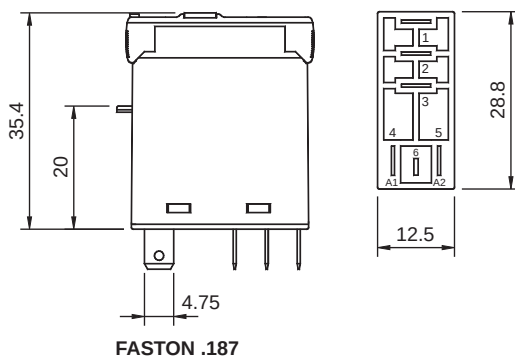


Table 2 Max. DC Load



Dimensions - mm



FASTON .187

C10-A10



One pole, change-over contact

10 A 250 V AC1	0.5 A 110 V DC1
10 A 30 V DC1	0.2 A 220 V DC1
13 A 250 V AC1	

Contacts

Materials:	Standard, code 0	AgNi
	Optional, code 8	AgNi + 10μ Au
	Optional, code 5	AgSnO ₂
Max. switching current		10 A
Max. peak inrush current (20 ms)		30 A
Max. switching voltage		250 V
Max. AC load (Table 1)		2.5 KVA
Max. DC load (Table 2)		

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x U _n
Drop-out voltage	≥0.1 x U _n
Nominal coil power	1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):	
Open contacts	1,000 V
Between contact and coil	5 KV
Isolation resistance at 500 V	≥1 GΩ
Isolation, IEC 61810-5:	4 KV/3

Specifications

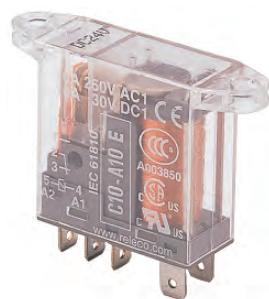
Operate time + bounce time	10 ms
Release time + bounce time	5 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200/hour
Protection grade	IP 40/RT1
Weight avg.	21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C10-A10X.....VAC
RC suppressor	C10-A10R.....VAC
DC 12, 24, 48, 110	
X = LED, no polarity (standard)	C10-A10X..... VDC
Options (DC coils)	
Polarity and free-wheeling diodes	C10-A10FX... VDC
AC/DC bridge rectifier (24 or 48 V)	C10-A10BX.. VDC



IEC 61810 EN 60947



Relay compatible
with sockets:

S10, S10-M, S10-P, S10-K

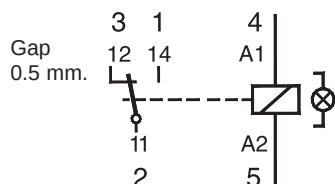


Table 1 Electrical Life, ops. x 10⁶

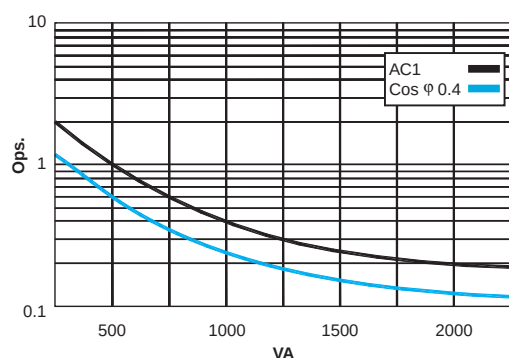
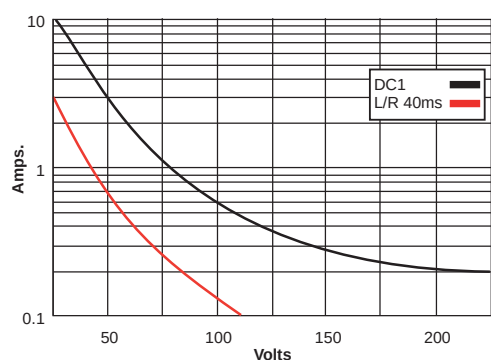
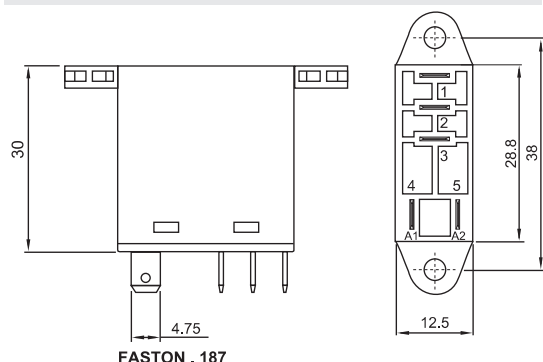


Table 2 Max. DC Load



Dimensions - mm



C10-A10E



One pole, change-over contact

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.5 A 220 V DC1
13 A 250 V AC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 1,000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥ 3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection grade IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C10-A10E.....VAC

DC 12, 24, 48, 110

C10-A10E.....VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S10, S10-M, S10-P, S10-K

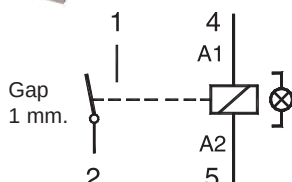


Table 1 Electrical Life, ops. x 10⁶

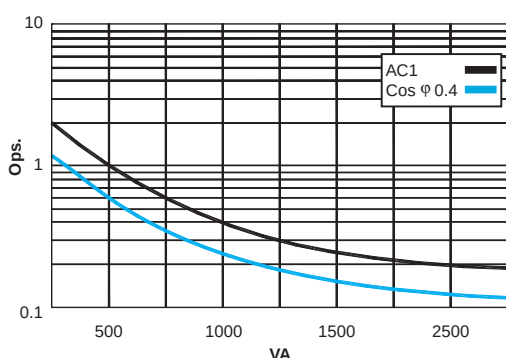
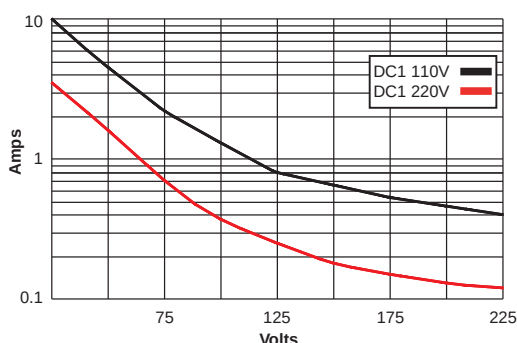
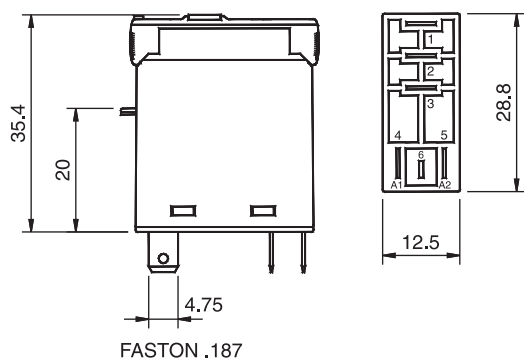


Table 2 Max. DC Load



Dimensions - mm



C10-G10



One pole, open contact

10 A 250 V AC1 0.8 A 110 V DC1
10 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10μ Au
Optional, code 5 AgSnO₂
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 2000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥1 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection grade IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C10-G10X.....VAC
RC suppressor C10-G10R VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C10-G10X..... VDC

Options (DC coils)
Polarity and free-wheeling diodes C10-G10FX .. VDC
AC/DC bridge rectifier (24 or 48 V) C10-G10BX.. VDC



Relay compatible
with sockets:

S10, S10-M, S10-P, S10-K

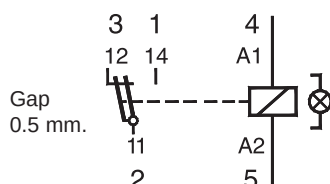


Table 1 Electrical Life, ops. x 106

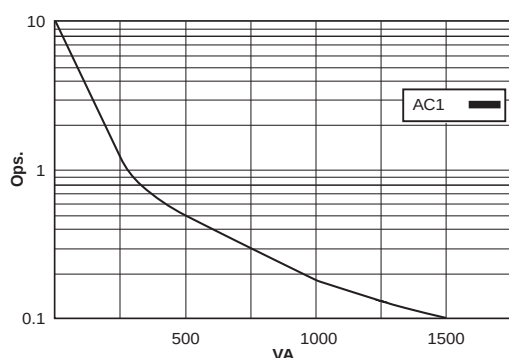
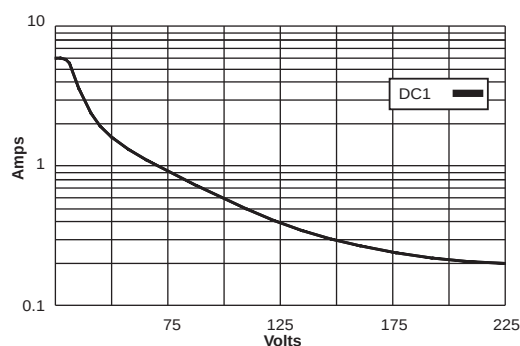
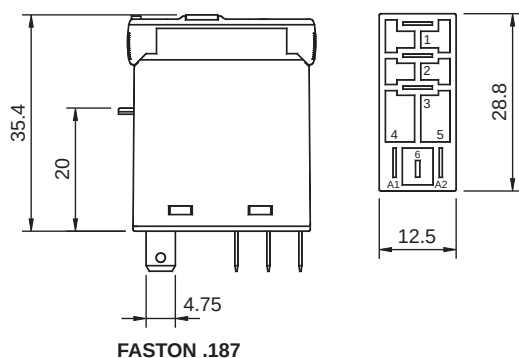


Table 2 Max. DC Load



Dimensions - mm



C10-T13



One change-over twin contact

6 A 250 V AC1 0.5 A 110 V DC1
6 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 3 AgNi + 3μ Au
Optional, code 2 AgNi + 10μ Au
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 1,000 V
Between contact and coil 5 KV
Isolation resistance at 500 V $\geq 1 \text{ G}\Omega$
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 5 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection grade IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C10-T13X.....VAC
RC suppressor C10-T13R.....VAC

DC 12, 24, 48, 110

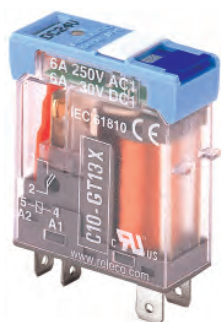
X = LED, no polarity (standard) C10-T13X.....VDC

Options (DC coils)

Polarity and free-wheeling diodes C10-T13FX... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C10-T13BX... VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S10, S10-M, S10-P, S10-K

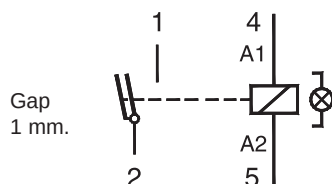


Table 1 Electrical Life, ops. x 10⁶

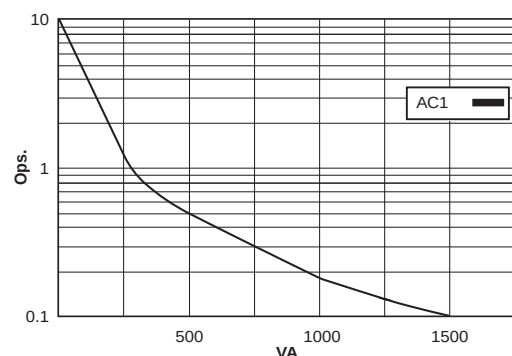
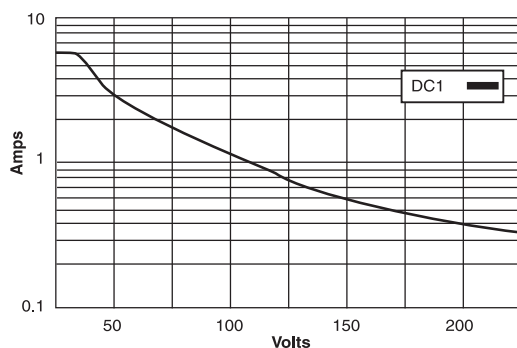
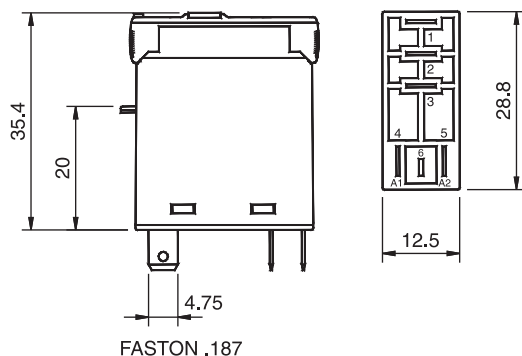


Table 2 Max. DC Load



Dimensions - mm



C10-GT13



One pole, twin open contact

6 A 250 V AC1 0.8 A 110 V DC1
6 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 3 AgNi + 3μ Au
Optional, code 2 AgNi + 10μ Au
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.5 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 2,000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection grade IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C10-GT13X ...VAC**
RC suppressor **C10-GT13R ...VAC**

DC 12, 24, 48, 110
X = LED, no polarity (standard) **C10-GT13X ..VDC**

Options (DC coils)
Polarity and free-wheeling diodes **C10-GT13FX..VDC**
AC/DC bridge rectifier (24 or 48 V) **C10-GT13BX..VDC**



IEC 61810 EN 60947



Relay compatible
with sockets:

S12, S12-P

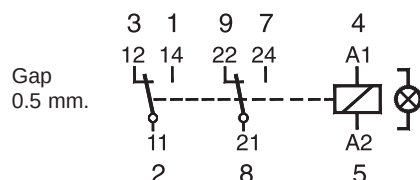


Table 1 Electrical Life, ops. x 106

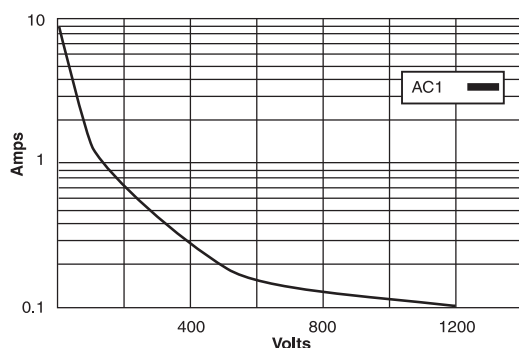
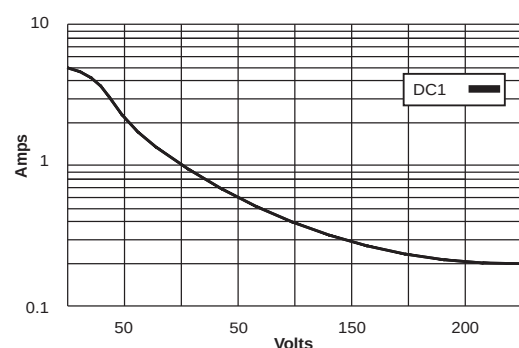
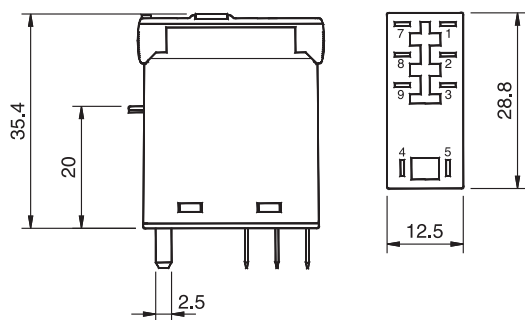


Table 2 Max. DC Load



Dimensions - mm



FASTON .098

C12-A21



Two poles, change-over contacts

5 A 250 V AC1 0.5 A 110 V DC1
5 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 1 AgNi + 0.2μ Au
Optional, code 2 AgNi + 10μ Au
Max. switching current 5 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 1,000 V
Between adjacent poles 3,000 V
Between contact and coil 5 KV
Isolation resistance at 500 V $\geq 3 \text{ G}\Omega$
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 5 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1,200/hour
Protection degree IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)

X = LED (standard) C12-A21X.....VAC
RC suppressor C12-A21R.....VAC

DC 12, 24, 48, 110

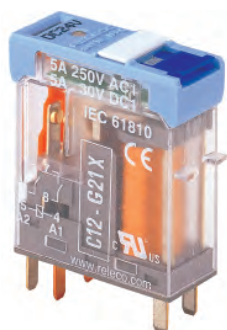
X = LED, no polarity (standard) C12-A21X.....VDC

Options (DC coils)

Polarity and free-wheeling diodes C12-A21FX... VDC
AC/DC bridge rectifier (24, 48 or 60 V) C12-A21BX .. VDC



IEC 61810 EN 60947



**Relay compatible
with sockets:**

S12, S12-P

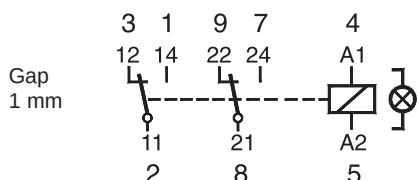


Table 1 Electrical Life, ops. x 106

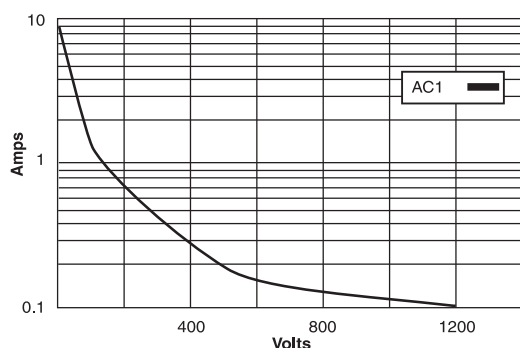
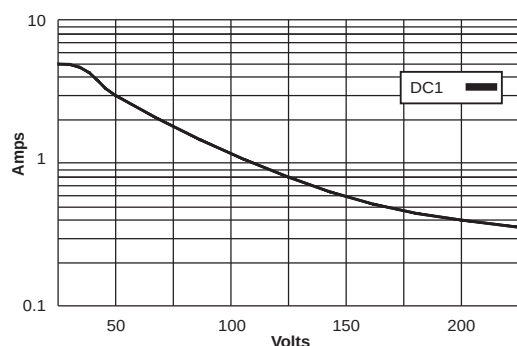
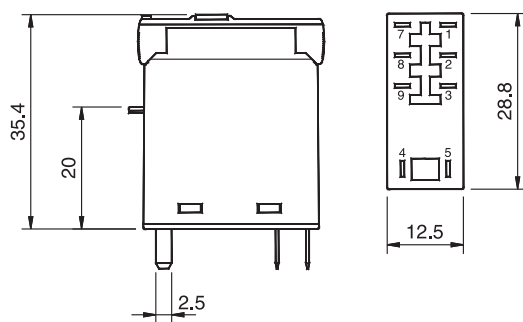


Table 2 Max. DC Load



Dimensions - mm



FASTON .098

C12-G21



Two poles, open contacts

5 A 250 V AC1 0.8 A 110 V DC1
5 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 1 AgNi + 0.2μ Au
Optional, code 2 AgNi + 10μ Au
Max. switching current 5 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load (Table 2)

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x U_n
Drop-out voltage ≥0.1 x U_n
Nominal coil power 1.1 VA (AC)/0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1,200	23	24	742	32
115	7,300	9.5	48	3,500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 2,000 V
Between adjacent poles 3,000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV/3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 5 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1,200/hour
Protection grade IP 40/RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C12-G21X.....VAC
RC suppressor C12-G21RVAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C12-G21X..... VDC

Options (DC coils)
Polarity and free-wheeling diodes **C12-G21FX .. VDC**
AC/DC bridge rectifier (24, 48 or 60 V) **C12-G21BX.. VDC**



IEC 61810 EN 60947



Relay compatible
with sockets:

S10, S10-M, S10-P, S-10K

CSS-DCP



Solid state relay

DC inductive or resistive load switching
Positive common output

One open contact

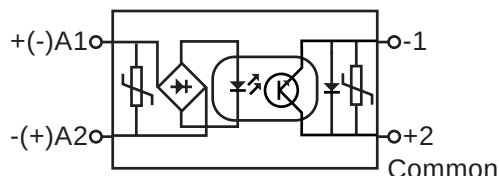
2 A @ 5-50 VDC

Input, Polarity Protected

Range of input voltage	5-32 VDC
Drop-out voltage	<2.5 VDC
Input current	3 ±1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 Level 1

CSS-DCP

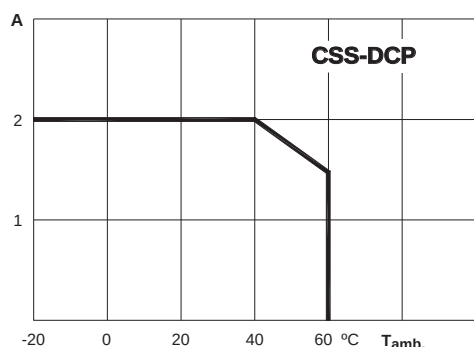
Positive Common



Output, Positive Common

Max. output current	2 A
Max. output voltage	50 VDC
Minimum output voltage	5 VDC
Max. drop voltage	1.3 VDC
Max. leakage current at 48 VDC	<100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 Level 1
Max. current at inverse voltage	1 A

Max. DC Load vs. Ambient Temperature



Specifications

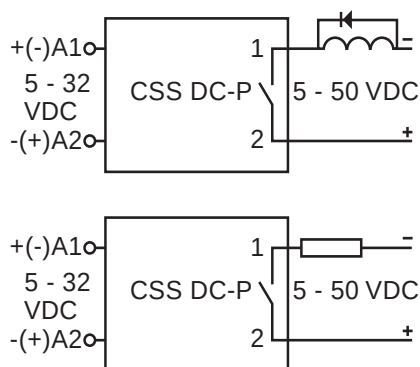
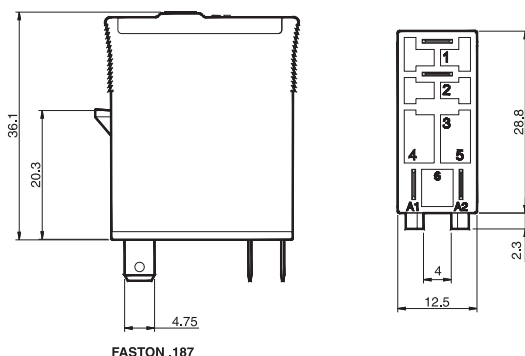
Dielectric strength input / output	4 KV/1 min.
Operate time	1 ms
Release time, max.	2 ms
Working temperature, max.	60°C
Storage temperature	80°C
Weight avg.	28 g

Applications

To switch up to 50 VDC, heating elements, electrovalves, motors, input/output signals on PLC's, solenoids, incandescent and fluorescent lamps, etc.

Inductive loads must be shunted with an antiparallel diode.

Dimensions - mm





Relay compatible with sockets:
S10, S10-M, S10-P, S-10K

CSS-DCN



Solid state relay

DC inductive or resistive load switching
Negative common output
One open contact

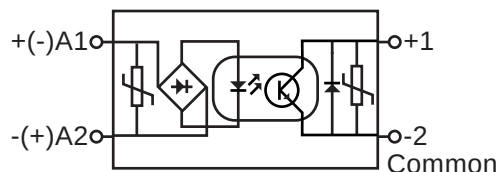
2 A @ 5-50 VDC

Input, Polarity Protected

Range of input voltage	5-32 VDC
Drop-out voltage	<2.5 VDC
Input current	3 ±1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 Level 1

CSS-DCN

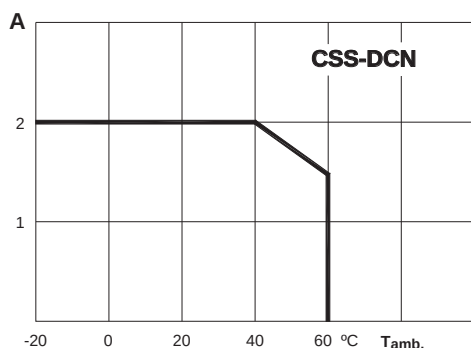
Negative Common



Output, Positive Common

Max. output current	2 A
Max. output voltage	50 VDC
Minimum output voltage	5 VDC
Max. drop voltage	1.3 VDC
Max. leakage current at 48 VDC	<100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 Level 1
Max. current at inverse voltage	1 A

Max. DC Load vs. Ambient Temperature



Specifications

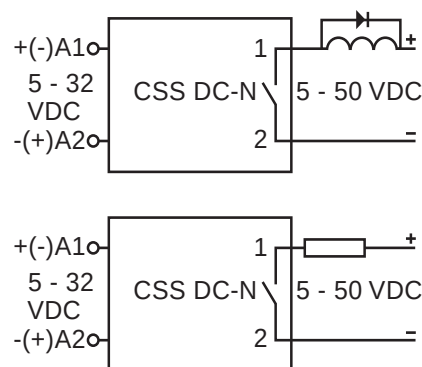
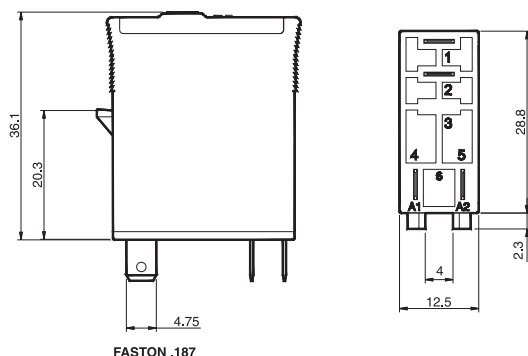
Dielectric strength input / output	4 KV/1 min
Operate time	1 ms
Release time, max.	2 ms
Working temperature, max.	60°C
Storage temperature	80°C
Weight avg.	28 g

Applications

To switch, up to 50 VDC, heating elements, solenoids, motors, input/output signals on PLC's, solenoids, incandescent and fluorescent lamps, etc.

Inductive loads must be shunted with an antiparallel diode.

Dimensions - mm





**Relay compatible
with sockets:**

S10, S10-M, S10-P, S-10K

CSS-AC



Solid state relay
AC inductive loads switching

One open contact

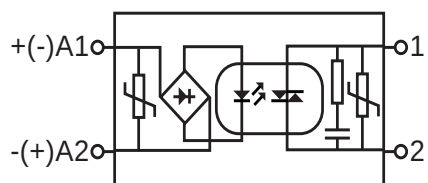
3 A @ 24-250 V AC, 50/60 Hz

Input, Polarity Protected

Range of input voltage	5-32 VDC
Drop-out voltage	<2.5 VDC
Input current	5-15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 Level 1

CSS-AC

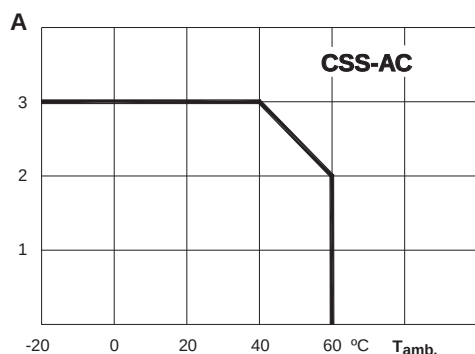
AC Instantaneous Output



Output, Instantaneous

Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 VAC
Minimum output voltage	24 VAC
Max. drop voltage	<1.5 VAC
Max. leakage current	0.55 mA
Max. Dv/dt	500 V/μs
I ² t for 10 ms. fuse	50 A ² /s

Max. AC Load vs. Ambient Temperature



Specifications

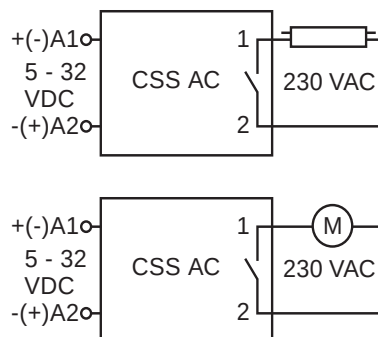
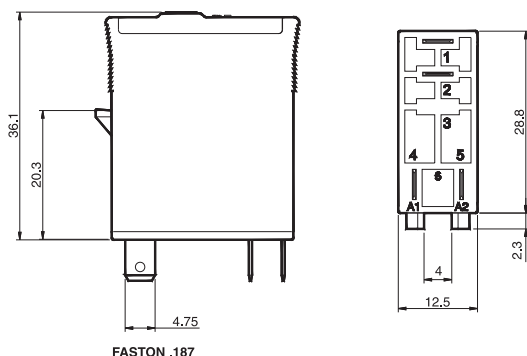
Dielectric strength input/output	4 KV/1min.
Operate time	1/2 cycle
Release time	2 ms + 1/2 cycle
Working temperature, max.	60°C
Storage temperature, max.	80°C
Weight avg.	28 g

Applications

Suitable to switch inductive loads up to 3 A/250 VAC.

In switching loads with a high inrush or overcurrent (max. Di/dt 50 A/μs) such as transformers, motors or fluorescents, the maximum output current limit it 2 A.

Dimensions - mm





**Relay compatible
with sockets:**

S10, S10-M, S10-P, S-10K

CSS-AZ



Solid state relay
AC resistive loads switching

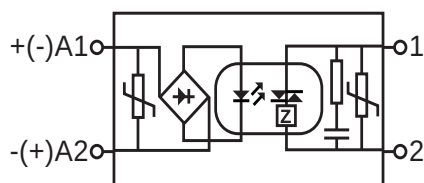
One open contact

3 A @ 24-250 V AC, 50/60 Hz

Input, Polarity Protected

Range of input voltage	5-32 VDC
Drop-out voltage	<2.5 VDC
Input current	5-15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 Level 1

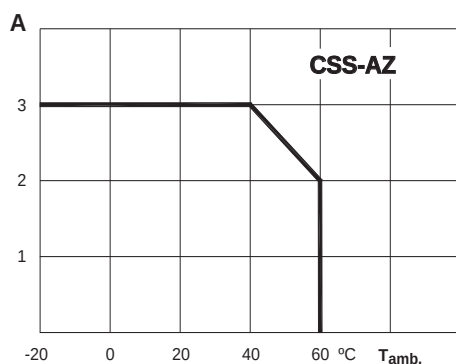
CSS-AZ AC, Synchronized to Zero



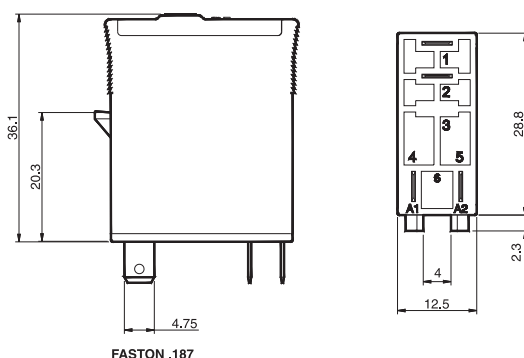
Output, Synchronized to Zero

Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 VAC
Minimum output voltage	24 VAC
Max. drop voltage	<1.5 VAC
Max. leakage current	0.55 mA
Max. dv/dt	500 V/μs
I ² t for 10 ms. fuse	50 A ² /s

Max. DC Load vs. Ambient Temperature



Dimensions - mm



FASTON .187

Specifications

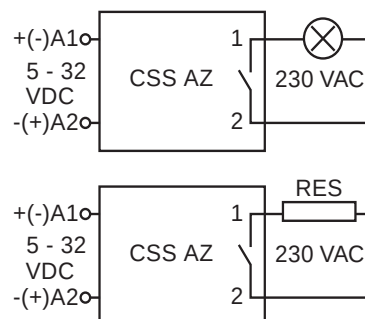
Dielectric strength input/output	4 KV/1min.
Operate time	1/2 cycle
Release time	2 ms + 1/2 cycle
Working temperature, max.	60°C
Storage temperature, max.	80°C
Weight avg.	28 g

Applications

Switches AC resistive loads up to 3 A/250 VAC in the zero point of the tension and avoids any overcurrent peak in the connection.

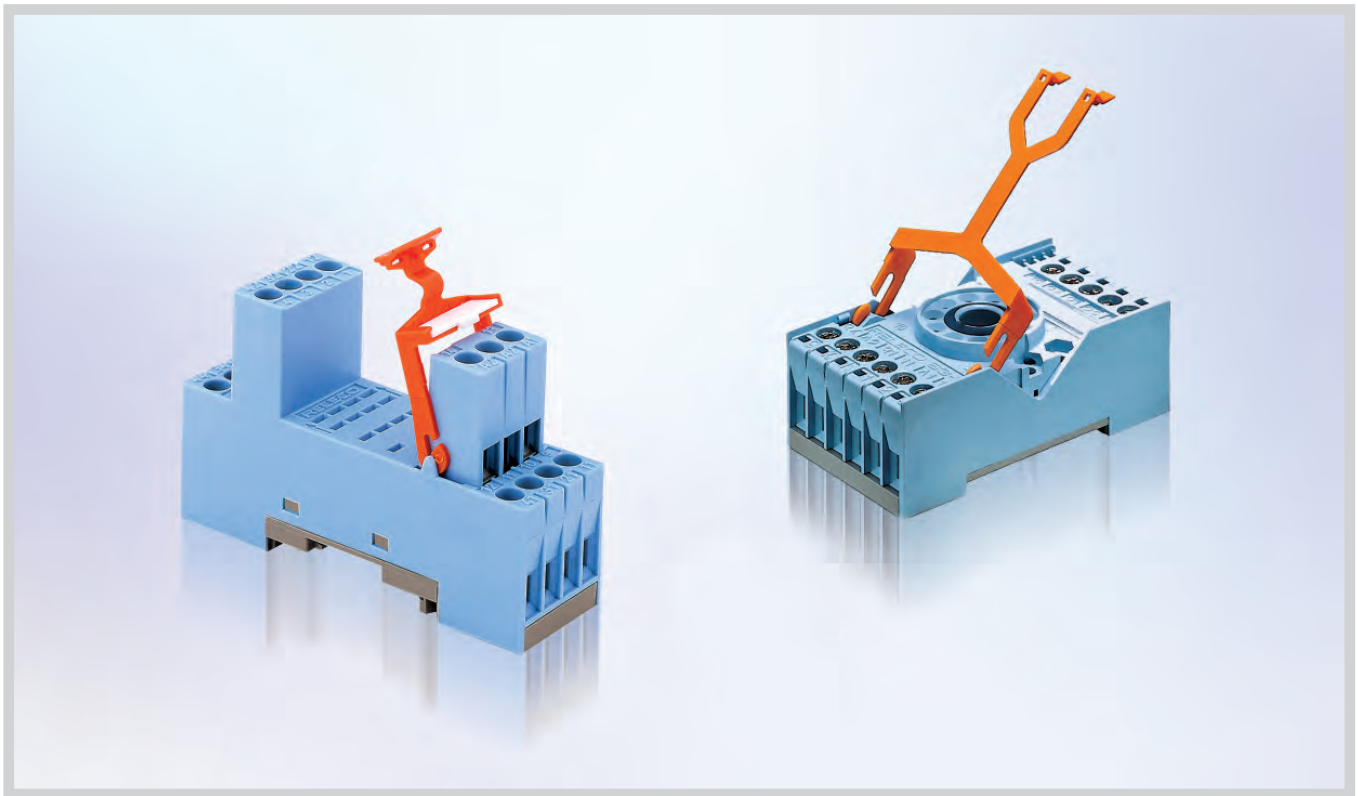
Suitable to switch resistors, incandescent lamps, signalling, etc.

Not suitable for inductive loads.



Notes:

SOCKETS





S2-B



Two pole, one level, coding ring
Integrated clip and marking label

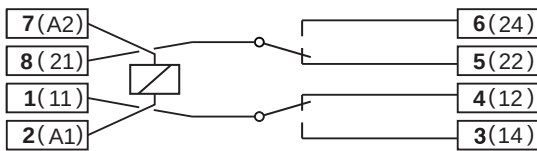
10 A 300 V

Socket for MRC, 8-Pin Plug-In Relay Types C2-A20, C2-G20, C2-T21

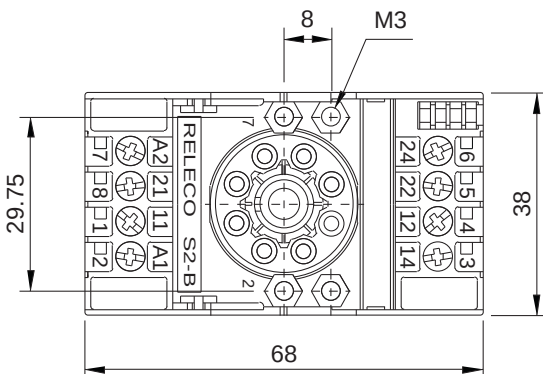
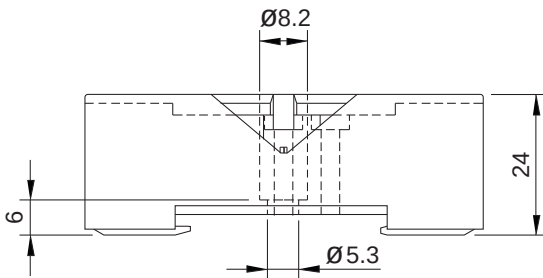
- Accepts the exclusive RELECO coding ring for coding both relay and socket
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load:

10 A/300 V

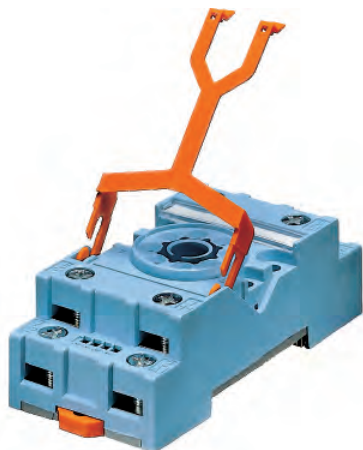
Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	





S2-S



Two pole, two level, coding ring
Integrated clip and marking label

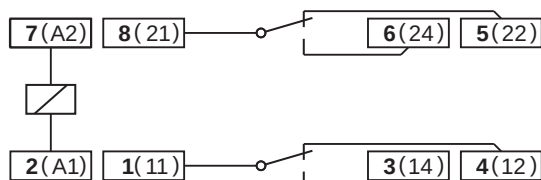
10 A 300 V

Socket for MRC, 8-Pin Plug-In Relay Types C2-A20, C2-G20, C2-T21

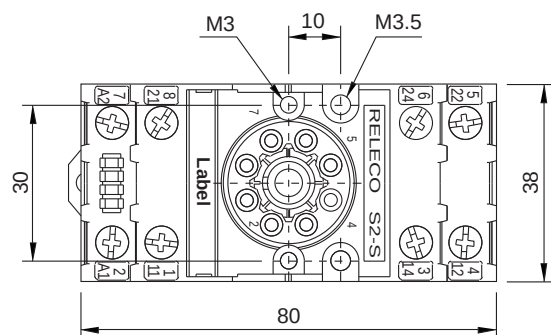
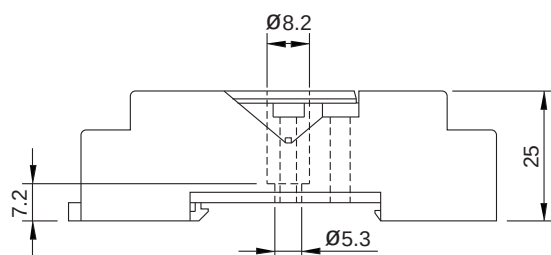
- Accepts the exclusive RELECO coding ring for coding both relay and socket
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/300 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

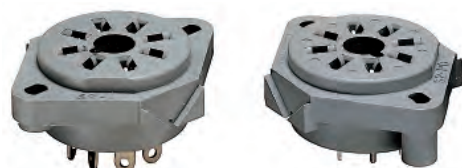
Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



S2-L 2-Pole Flange
Panel Mountable

S2-PO 2-Pole Printed Circuit
with Flange



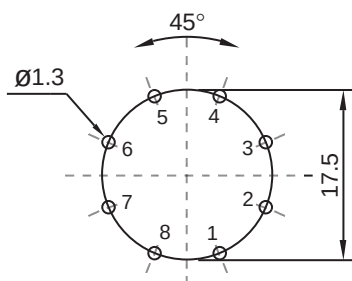
S2-L

S2-PO

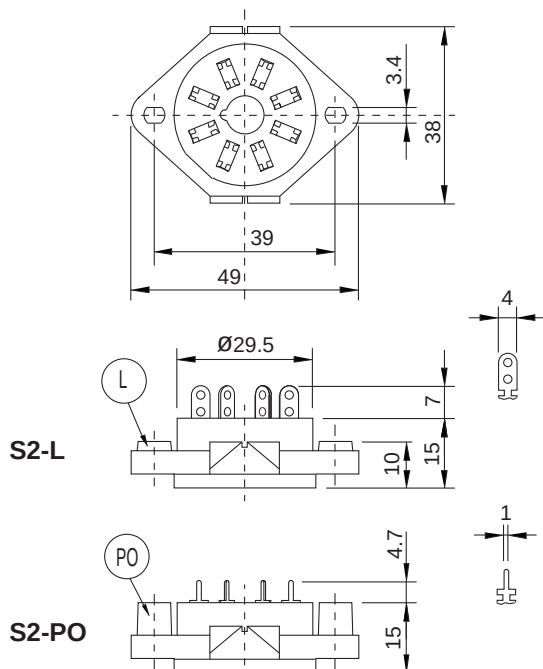
Specifications

Nominal Load 10 A/300 V
Dielectric Strength Adjacent Pin 2.5 KV

Printed Circuit Lay-Out



Dimensions - mm



S3-L 3-Pole Flange
Panel Mountable

S3-PO 3-Pole Printed Circuit
with Flange



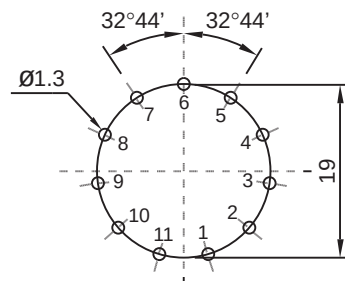
S3-L

S3-PO

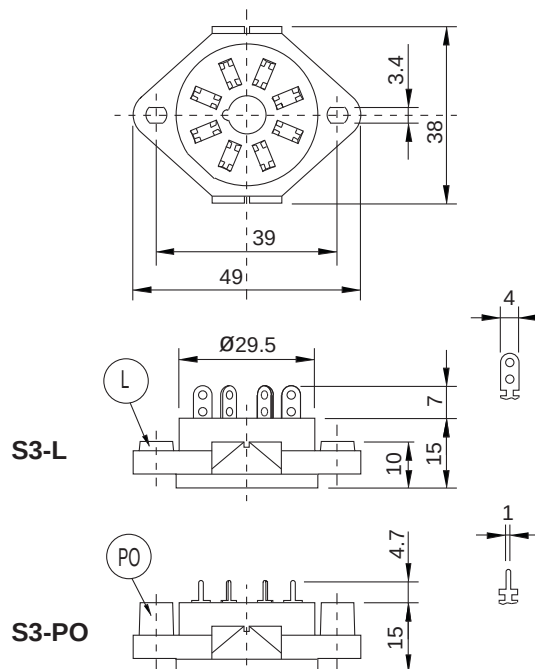
Specifications

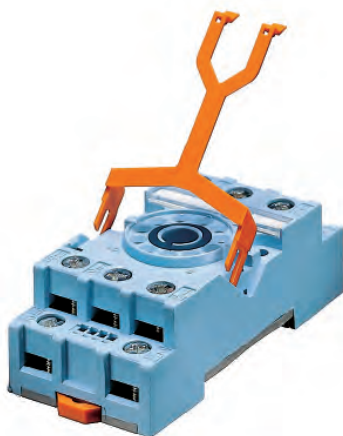
Nominal Load 10 A/250 V
Dielectric Strength Adjacent Pin 2.5 KV

Printed Circuit Lay-Out



Dimensions - mm





S3-S



Three pole, two level, coding ring
Integrated clip and marking label

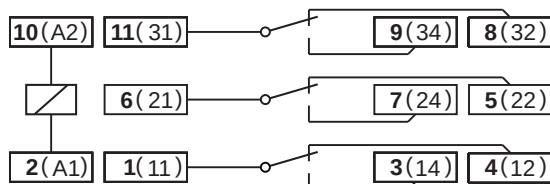
10 A 250 V

**Socket for MRC, 11-Pin Plug-In Relay Types
C3-A30, C3-G30, C3-T31, C3-X10, C3-M10,
C3-R20, C3-E24, C3-N34**

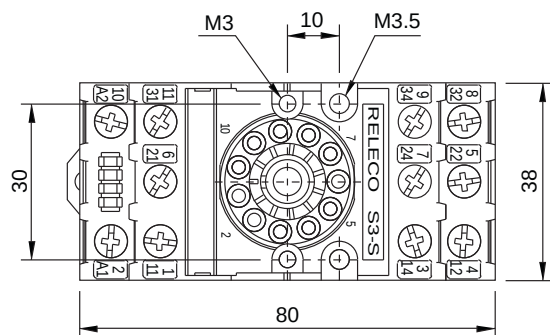
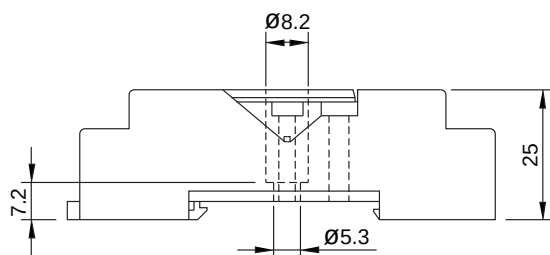
- Accepts the exclusive RELECO coding ring for coding both relay and socket.
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	





S3-B



Three pole, one level, coding ring
Integrated clip and marking label

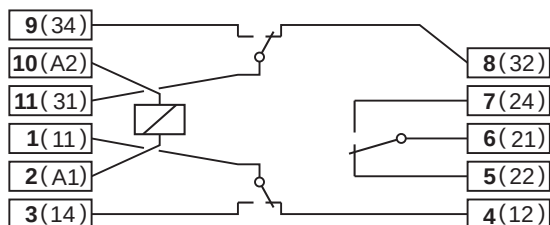
10 A 250 V

**Socket for MRC, 11-Pin Plug-In Relays Types
C3-A30, C3-G30, C3-T31, C3-X10, C3-M10,
C3-R20, C3-E24, C3-N34**

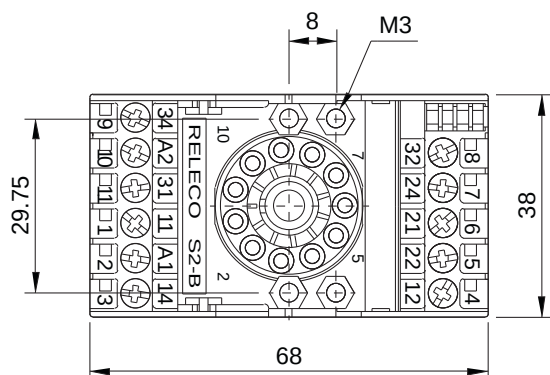
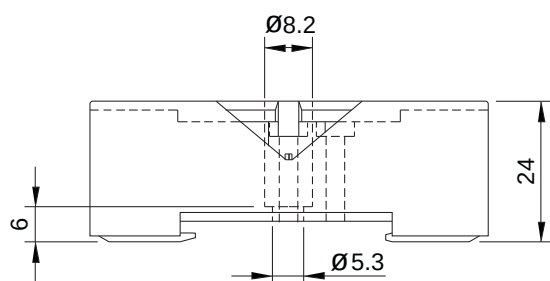
- Accepts the exclusive RELECO coding ring for coding both relay and socket.
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



Lloyd's



S3-MP



Three pole, one level
Accepts plug-in modules M3P
in parallel with the coil

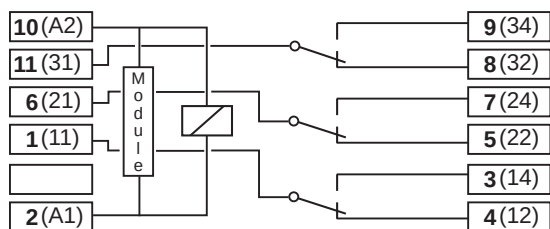
10 A 250 V

**Socket for MRC, 11-Pin Plug-In Relay Types
C3-A30, C3-G30, C3-T31, C3-X10, C3-M10,
C3-R20, C3-E24, C3-N34**

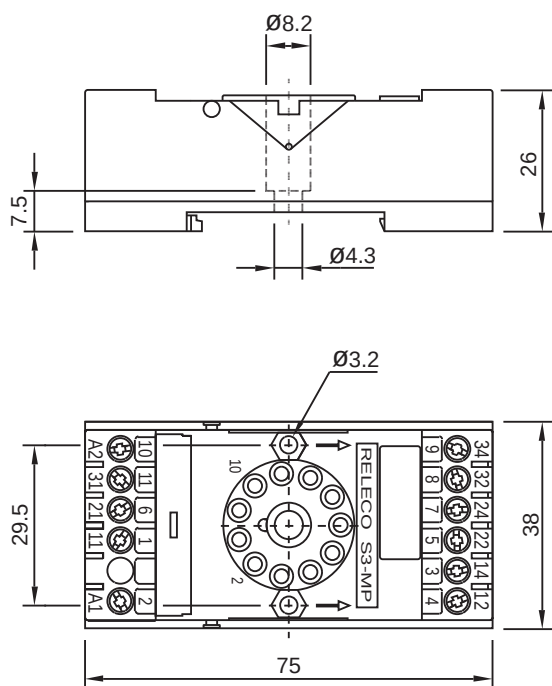
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	





S4-J



Four pole, two level, logic wiring
Integrated clip and marking label

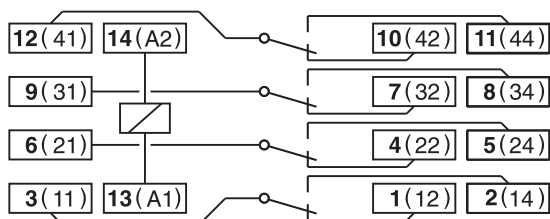
10 A 250 V

**Socket for MRC, 14-Pin Plug-In Relay Types
C4-A40, C4-X20, C4-T31, C4-R30**

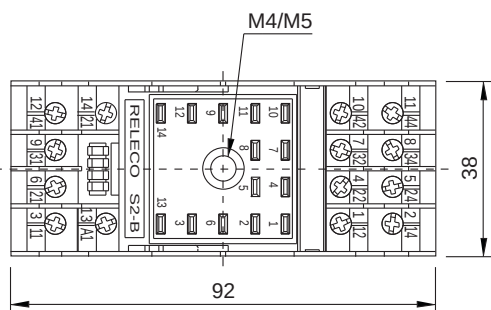
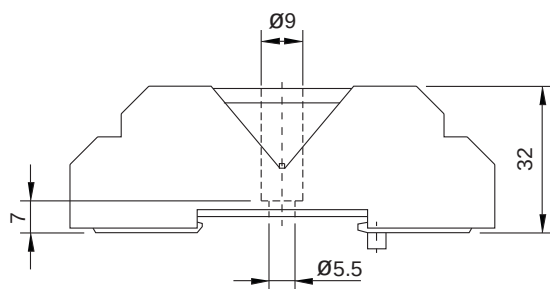
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	24-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



S4-L 4-Pole Flange
Panel Mountable

S4-PO 4-Pole Printed Circuit
with Flange



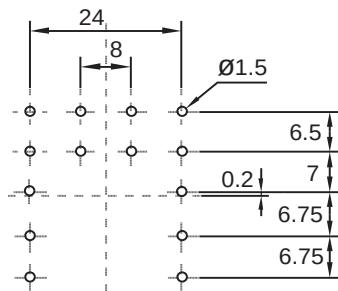
S4-L

S4-PO

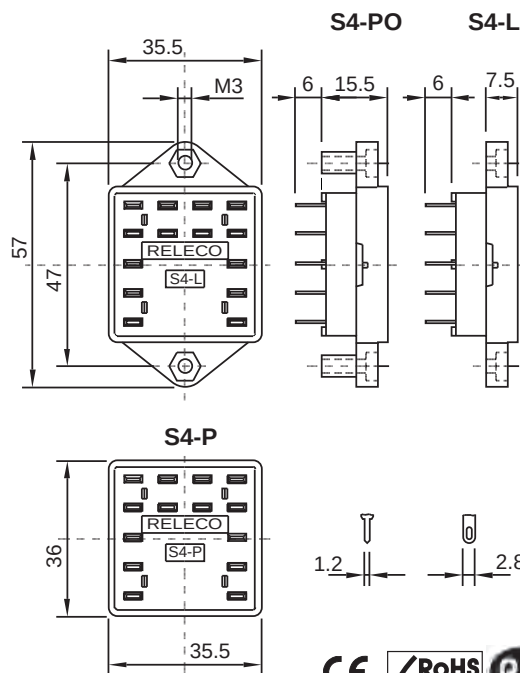
Specifications

Nominal Load 10 A/250 V
Dielectric Strength Adjacent Pin 2.5 KV

Printed Circuit Lay-Out



Dimensions - mm



S5-L 3-Pole Flange
Panel Mountable

S5-P 3-Pole Printed Circuit

S5-PO 3-Pole Printed Circuit
with Flange



S5-L

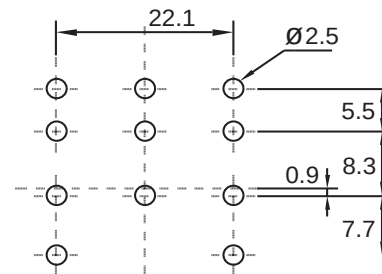
S5-P

S5-PO

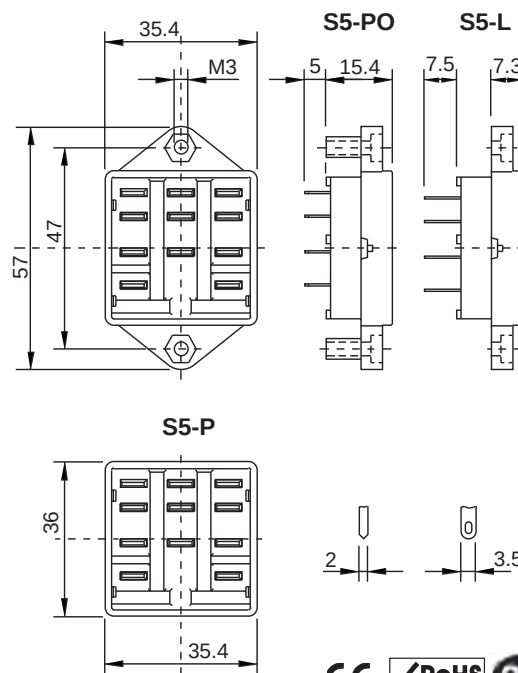
Specifications

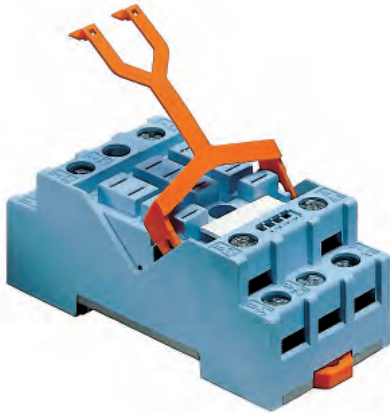
Nominal Load 16 A/400 V
Dielectric Strength Adjacent Pin 4 KV

Printed Circuit Lay-Out



Dimensions - mm





S5-S



Three pole, two level, logic wiring
Integrated clip and marking label

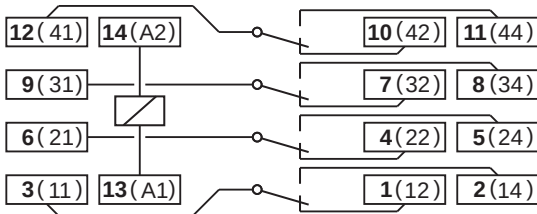
16 A 400 V

Socket for MRC, 11-Pin Plug-In Relay Types
C5-A20, C5-A30, C5-G30, C5-X10, C5-M10,
C5-M20, C5-R20

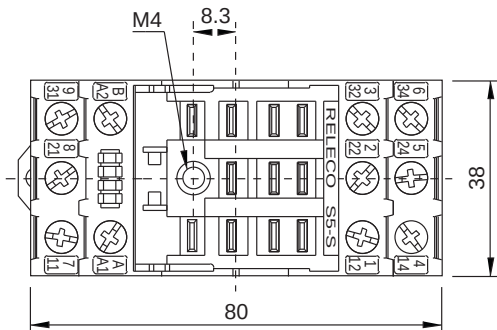
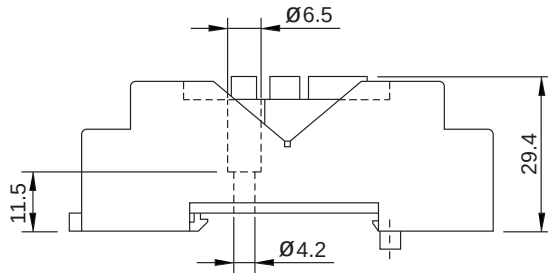
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 16 A/400 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	4 KV
Between all terminals and rail DIN	4 KV
Between adjacent poles	4 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	





S7-M



Two pole, one level
Integrated clip and marking label

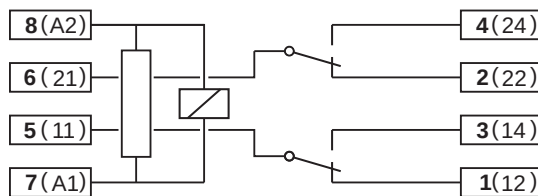
10 A 250 V

**Socket for QRC, 2-Pole Plug-In Relay Types
C7-A20, C7-T21, C7-G20, C7-X10, C7-W10**

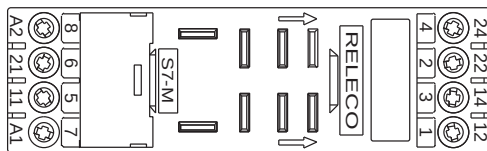
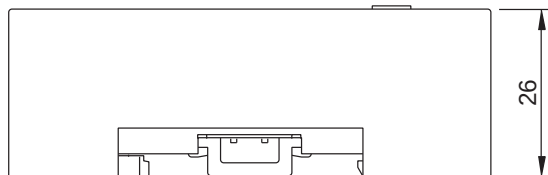
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	





S7-I/O



Two pole, one level
Integrated clip and marking label

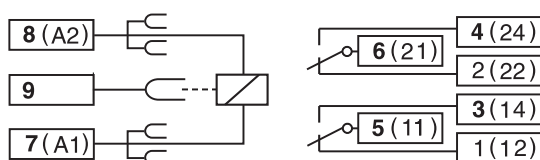
10 A 250 V

Socket for QRC, 2-Pole Plug-In Relay Types C7-A10

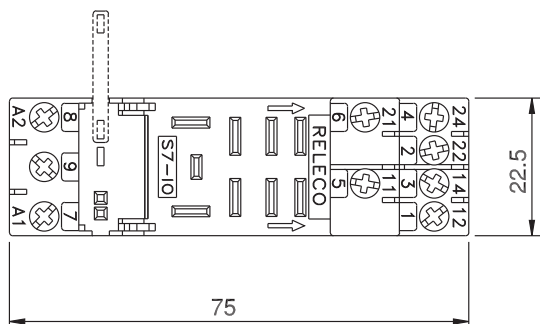
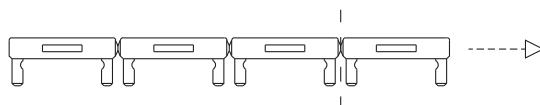
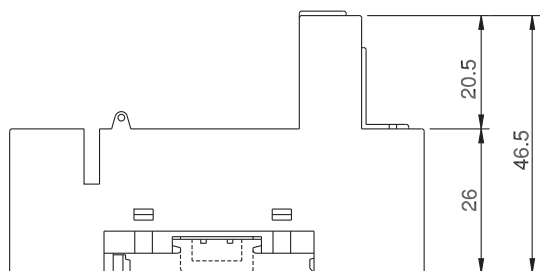
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 10 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



Lloyd's



S7-16



One pole, one level
Integrated clip and marking label

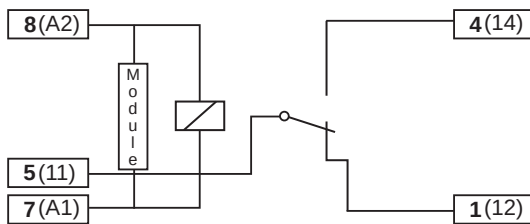
16 A 250 V

Socket for MRC, 1-Pole Plug-In Relay Types C7-A10

- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

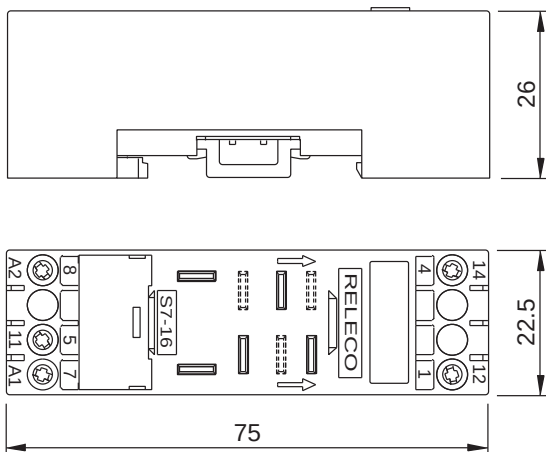
According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm

S7-16 for use with C7-A10 (16A)



Specifications

Nominal Load: 16 A/250 V

Insulation:

Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2.5 KV

Wire In-Lets Capacity:

Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



Lloyd's



S7-P 2-Pole Printed Circuit

S7-PO 2-Pole Printed Circuit with Flange

S9-P 4-Pole Printed Circuit

S9-PO 4-Pole Printed Circuit with Flange



S7-P



S7-PO



S9-PO



S9-P

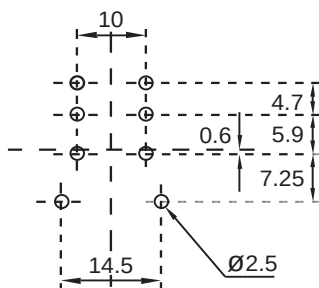
Specifications

Nominal Load 10 A/250 V
Dielectric Strength Adjacent Pin 2.5 kV

Specifications

Nominal Load 6 A/250 V
Dielectric Strength Adjacent Pin 2.5 kV

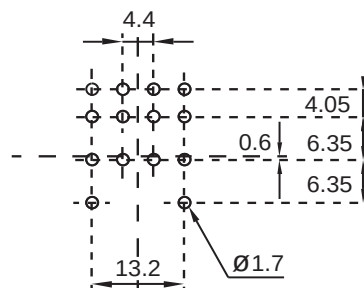
Printed Circuit Lay-Out



Dimensions - mm

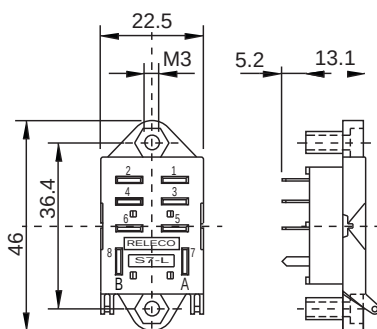
S7-PO

Printed Circuit Lay-Out

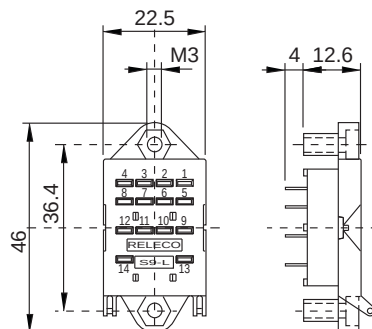
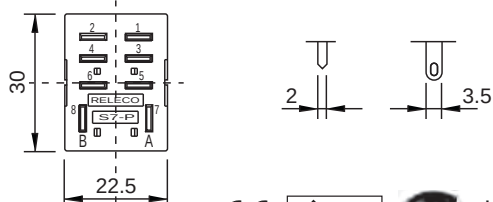


Dimensions - mm

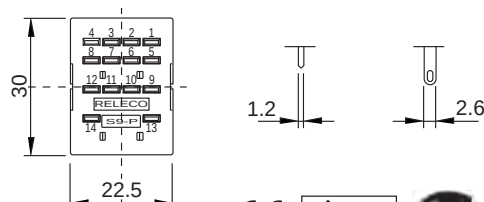
S9-PO

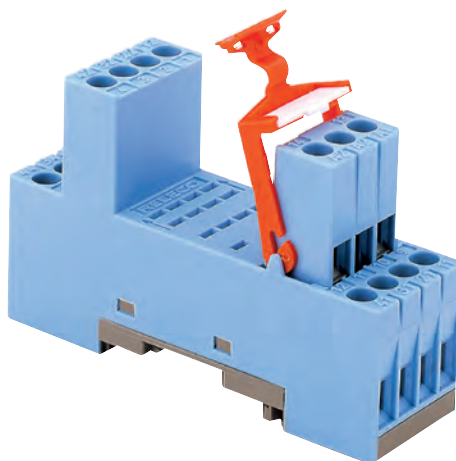


S7-P



S9-P





S9-M



Four pole, two level
Integrated clip and marking label

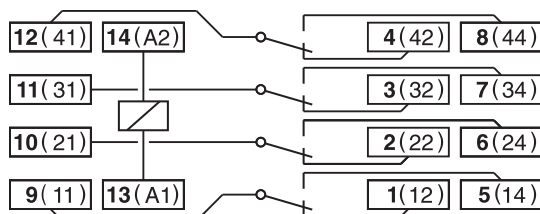
6 A 250 V

Socket for QRC, 4-Pole Plug-In Relay Types C9-A41, C9-E21, C9-R21

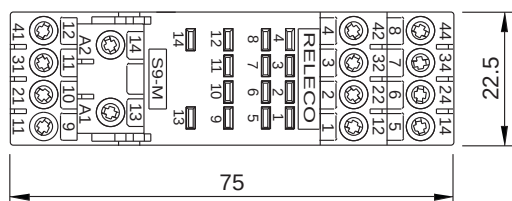
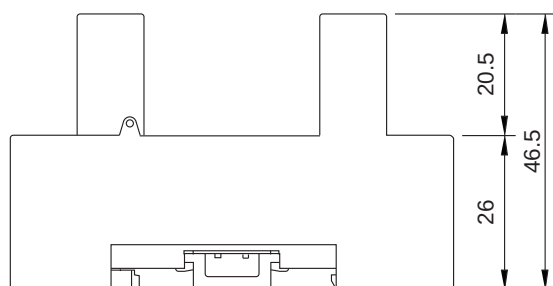
- DIN rail or panel mountable
- Removable label
- EN/DIN and sequential numbering

According to EN 60947-1 and IEC 61810-5

Wiring Diagram



Dimensions - mm



Specifications

Nominal Load: 6 A/250 V

Insulation:

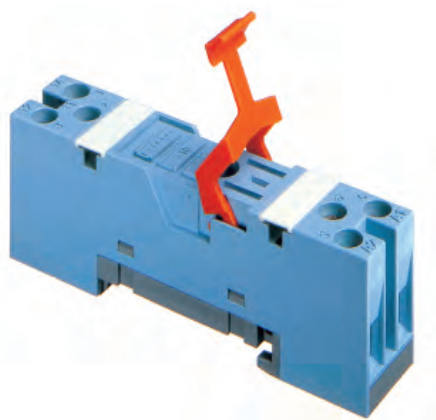
Dielectric strength, 1 minute	
Between contacts and coil	2.5 KV
Between all terminals and rail DIN	2.5 KV
Between adjacent poles	2000 V

Wire In-Lets Capacity:

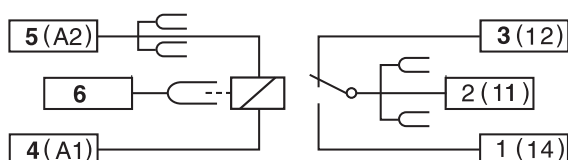
Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi-core	22-14 AWG
Ferrule tip terminals	4 mm ²
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Integrated hold-down clip	
Removable marking label	



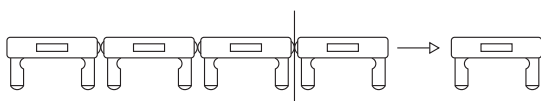
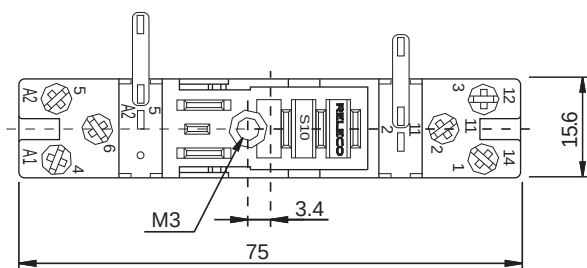
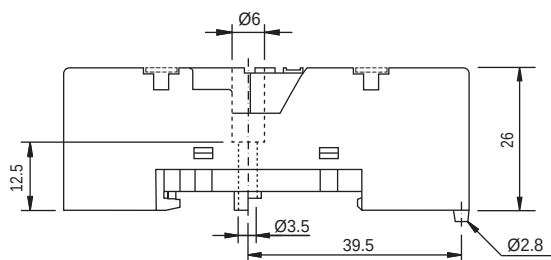
Lloyd's



Wiring Diagram



Dimensions - mm



Bridge Bus Bar S10-BB

S10



Socket for C10-C14-CSS relays
DIN rail or panel mountable

10 A 250 V

Interface I/O socket, with terminals in-line
for relays C10A, C10G, C10T, CSS

Specifications

Poles	1
Nominal load	10 A/250 V
Dielectric strength	
Coil - contacts	5 KV
Terminals - Rail	5 KV
Max. screw torque	1.2 Nm
Multi-core capacity	22-14 AWG
Solid wire capacity	4 mm ² or 2 x 2.25 mm ²
Weight average	28 g

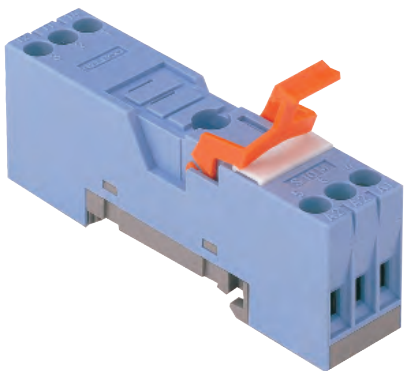
Other Aspects

- Hard brass tin-plated terminals
- Brass zinc-plated solid screws
- Integrated clip
- Removable marking label

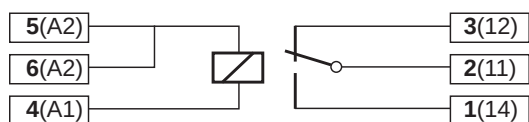
Accessories

Bridge bar for coil and movable contact (S10-BB)
Integrated clip
DIN rail or panel mounting
Maximum current through bridge 10 A
Maximum current input common cable 20 A

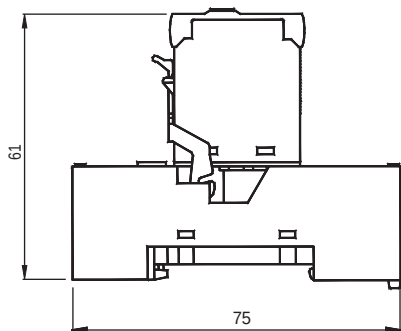
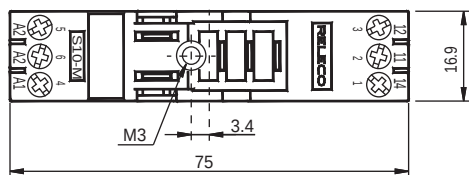
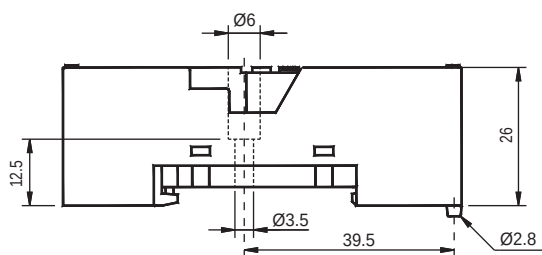




Wiring Diagram



Dimensions - mm



S10-M

New I/O socket for IRC relays one change-over contact

16 A 250 V

I/O socket, with terminals in-line for relays C10A, C10G, C10T, C14A, C14G, C16A, C16G and CSS

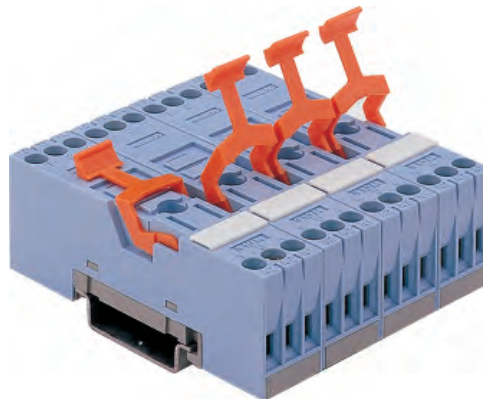
Both this socket and the S12 are designed to get a homogeneous set with identical terminal disposition, which allows the easy identification of the contacts set in each level and a simpler wiring.

Both A2 terminals allow a secure interconnection through external bridges among an unlimited number of these sockets or a mixture of S10-M and the S12.

The A2 terminal, free on both the first and last sockets, is used to connect the cable of common polarity.

Specifications

Nominal load	16 A/250 V
Insulation: Dielectric strength, 1 minute	
Between coil and contacts	5 KV
Between all terminals and rail DIN	5 KV
Max. screw torque	1.2 Nm
Screw dimensions	M3, Pozi
Wire in-lets capacity:	
Solid wire	4 mm ² or 2 x 2.25 mm ²
Multi - core	22-14 AWG
Ferrule tip terminals	4 mm ²
Integrated hold-down clip	
Removable marking label	



S10-P



Printed circuit socket for 1 pole
IRC Relays



Specifications

Nominal load	10 A/250 V
Dielectric strength, 1 min.	
Coil terminals to contacts	5KV
Hard brass tin-plated terminals	0.5 x 1 mm
Integrated hold-down clip	

S12-P

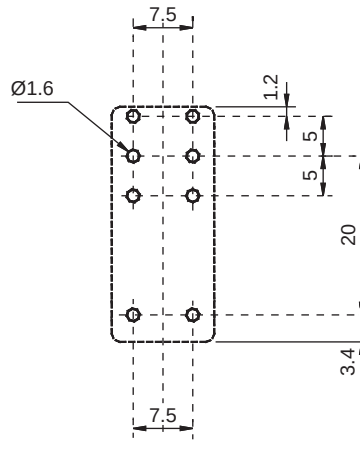
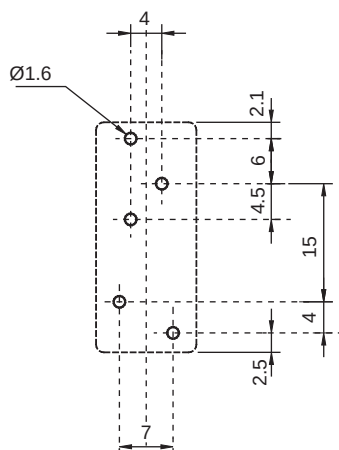
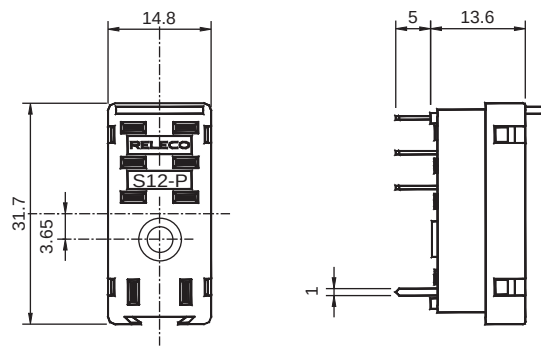
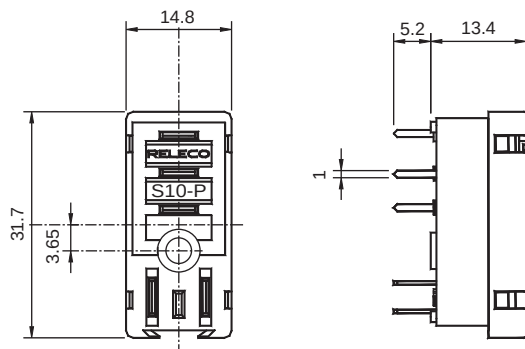


Printed circuit socket for 2-pole
IRC Relays

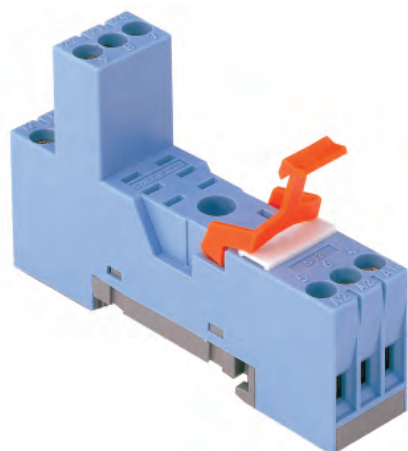


Specifications

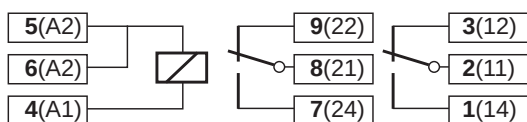
Nominal load	5 A/250 V
Dielectric strength, 1 min.	
Coil terminals to contacts	5KV
Hard brass tin-plated terminals	0.5 x 1 mm
Integrated hold-down clip	



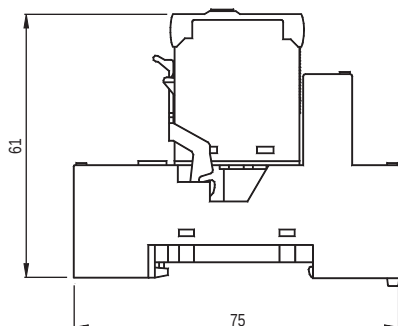
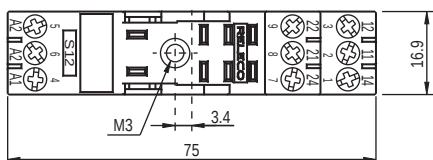
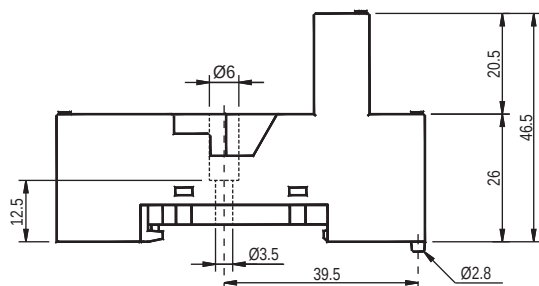
IEC 61810 EN 60947



Wiring Diagram



Dimensions - mm



S12



New I/O socket for IRC relays two pole, change-over contacts

5 A

New I/O socket with terminals in-line, for relays C12, C12G, C15 and C15G

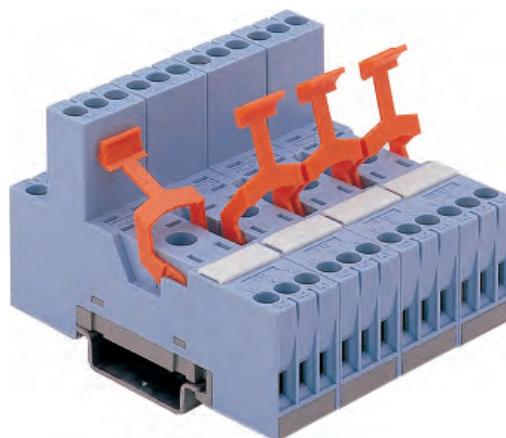
Both this socket and the S10-M are designed to get a homogeneous set with identical terminal disposition, which allows easy identification of the contacts set in each level and simpler wiring.

Both A2 terminals allow a secure interconnection through external bridges among an unlimited number of these sockets or a mixture of S12 and the S10-M.

The A2 terminal, free on both the first and last sockets, is used to connect the cable of common polarity.

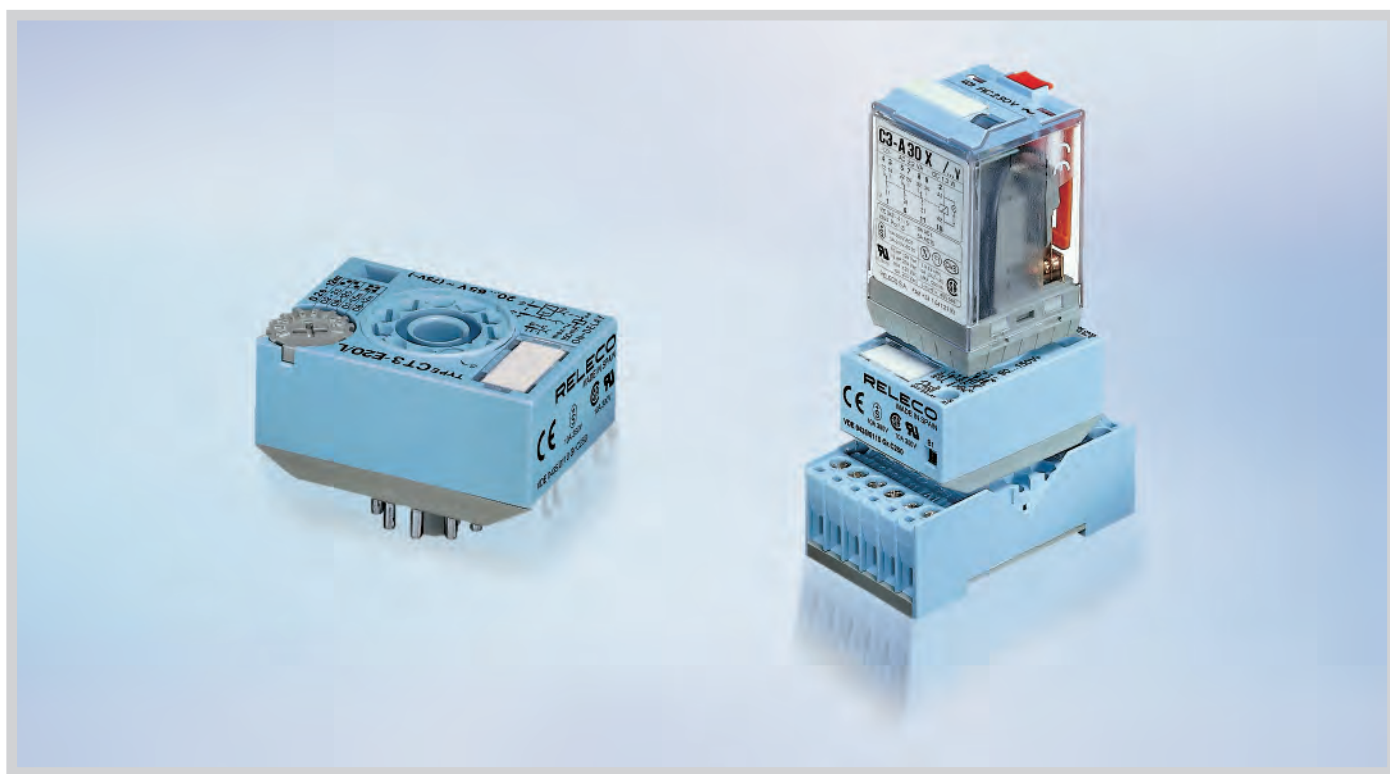
Specifications

Poles	Two change-over contacts
Nominal load	5 A/250V
Insulation:	
Between coil and contacts	5 KV
Between every terminal and DIN rail	5 KV
Between adjacent contacts	3 KV
Max. screw torque	1.2 Nm
Wire in-lets multi-core capacity	22-14 AWG
Solid wire or ferrule tips capacity	4 mm ²
Solid terminals of zinc-plated brass	
Integrated hold-down clip	
Removable marking label	



Notes:

TIMERS





The modules **CT 2** and **CT 3** are electronic timers that are designed to be inserted between a standard plug-in relay and its socket, enabling the relay to be operated as a timer relay.

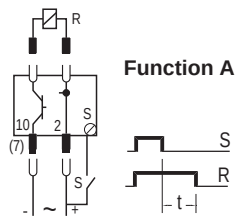
The **CT** modules are able to accept any standard 8 or 11-Pin RELECO series C2 or C3 as well as those from any other supplier.

The relay coil voltage must be in the range shown for each model.

CT 2A CT 3A

Off delay

The timing starts when S is switched off. The relay drops out at time (t).



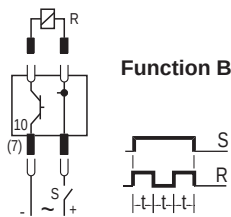
CT 2-A30/S*9.5-18 V
CT 2-A30/L20-65 V
CT 2-A30/M90-150 V
CT 2-A30/U180-265 V

CT 3-A30/S*9.5-18 V
CT 3-A30/L20-65 V
CT 3-A30/M90-150 V
CT 3-A30/U180-265 V

CT 2B CT 3B

Blinker

The relay blinks ON/OFF at time (t) when switch S is closed. First pulse, ON.



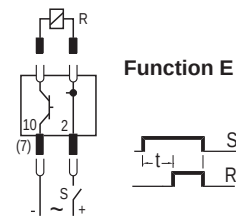
CT 2-B30/S*9.5-18 V
CT 2-B30/L20-65 V
CT 2-B30/H90-265 V

CT 3-B30/S*9.5-18 V
CT 3-B30/L20-65 V
CT 3-B30/H90-265 V

CT 2E CT 3E

On delay

The timing starts when the switch S is closed. The relay pulls in at the time (t).



CT 2-E30/S*9.5-18 V
CT 2-E30/L20-65 V
CT 2-E30/H90-265 V

CT 3-E30/S*9.5-18 V
CT 3-E30/L20-65 V
CT 3-E30/H90-265 V

*All types are for AC/DC except "S" voltage range (only DC)

CT2... (8-Pin) and CT3... (11-Pin) types with time range from 0.2 seconds to 30 minutes (range 30)

Specifications

Time accuracy

Repetition	+0.5%/20 ms
Supply voltage	1 ms / volt.
Ambient temperature	-0.25% / K
Reset time (types E, W, B)	<150 ms
Reset time (types A, K)	<200 ms
Triggering time: AC, 80 ms;	DC, 50 ms
Ambient temperature	-10°C to +60°C
Transient protection	IEC 255.4
Housing material	Noryl SE1 (UL94 V-1)
Protection class (DIN 40050)	IP 40
Weight avg.	35 g

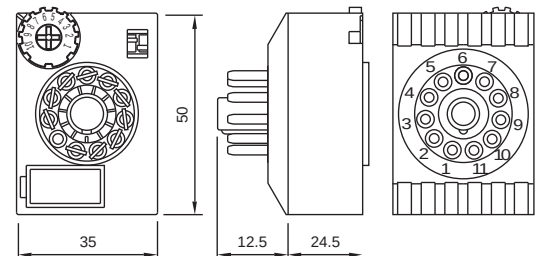
Time Range Setting

Range 30 Dip - Sw

0.2-3 s	
2-30 s	
0.2-3 min	
2-30 min	



Dimensions





The modules **CT 2** and **CT 3** are electronic timers that are designed to be inserted between a standard plug-in relay and its socket, enabling the relay to be operated as a timer relay.

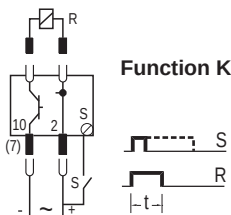
The **CT** modules are able to accept any standard 8 or 11-Pin RELECO series C2 or C3 as well as those from any other supplier.

The relay coil voltage must be in the range shown for each model.

CT 2K CT 3K

One shot, aux. pulse

The relay turns ON with a pulse on the switch S and turns OFF at the time (t).



Function K

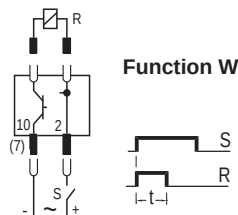
CT 2-K30/S* 9.5-18 V
CT 2-K30/L 20-65 V
CT 2-K30/M 90-150 V
CT 2-K30/U 180-265 V

CT 3-K30/S* 9.5-18 V
CT 3-K30/L 20-65 V
CT 3-K30/M 90-150 V
CT 3-K30/U 180-265 V

CT 2W CT 3W

One shot

The relay turns ON as switch S is closed and turns OFF at the time (t).



Function W

CT 2-W30/S* 9.5-18 V
CT 2-W30/L 20-65 V
CT 2-W30/H 90-265 V

CT 3-W30/S* 9.5-18 V
CT 3-W30/L 20-65 V
CT 3-W30/H 90-265 V

*All types are for AC/DC except "S" voltage range (only DC)

CT2... (8-Pin) and CT3... (11-Pin) types with time range from 0.2 seconds to 30 minutes (range 30)

Specifications

Time accuracy

Repetition	+0.5%/20 ms
Supply voltage	1 ms / volt.
Ambient temperature	-0.25% / K
Reset time (types E, W, B)	<150 ms
Reset time (types A, K)	<200 ms
Triggering time: AC, 80 ms;	DC, 50 ms
Ambient temperature	-10°C to +60°C
Transient protection	IEC 255.4
Housing material	Noryl SE1 (UL94 V-1)
Protection class (DIN 40050)	IP 40
Weight avg.	35 g

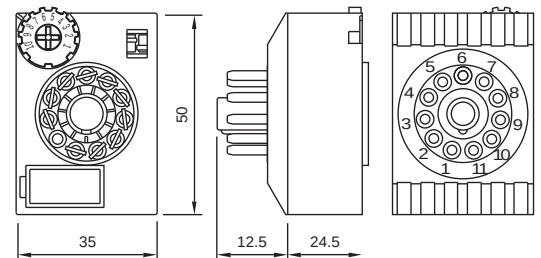
Time Range Setting

Range 30 Dip - Sw

0.2-3 s	
2-30 s	
0.2-3 min	
2-30 min	

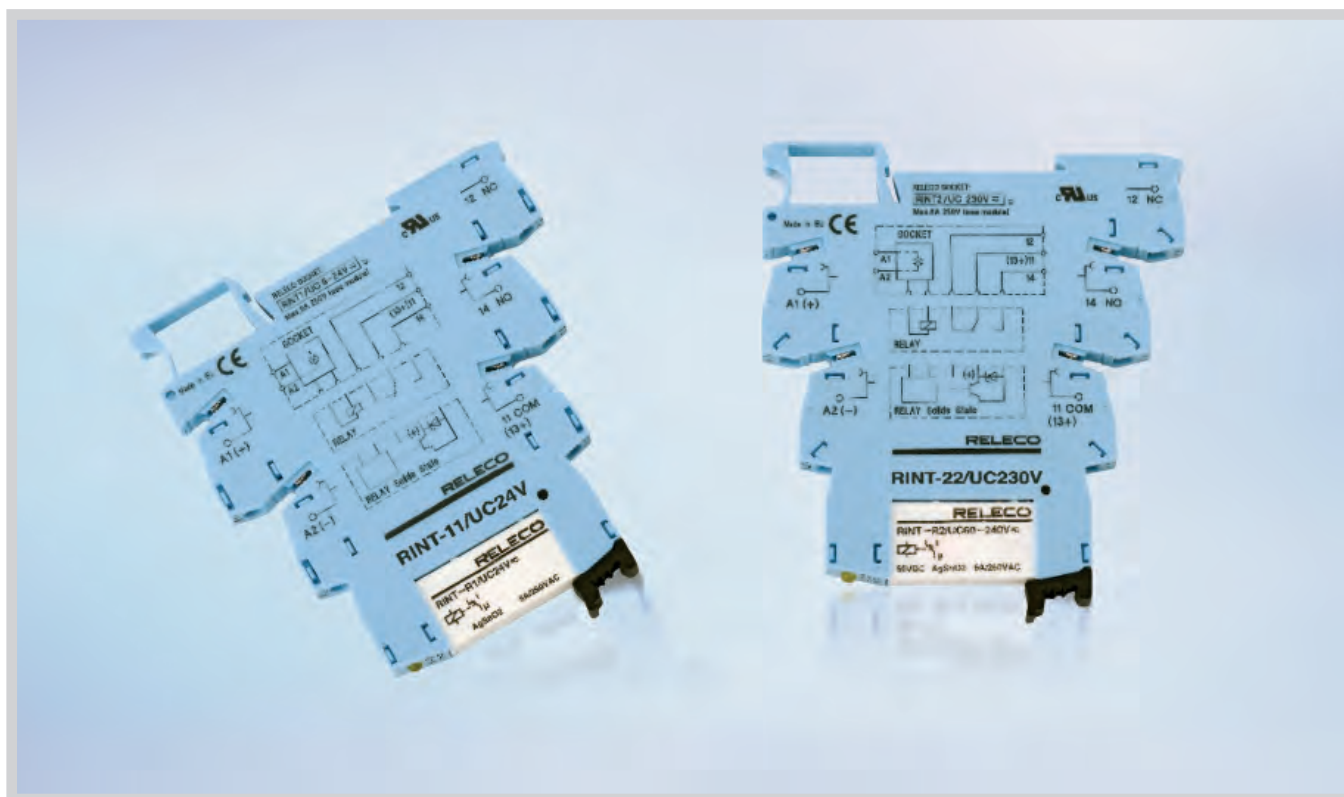


Dimensions



Notes:

RINT



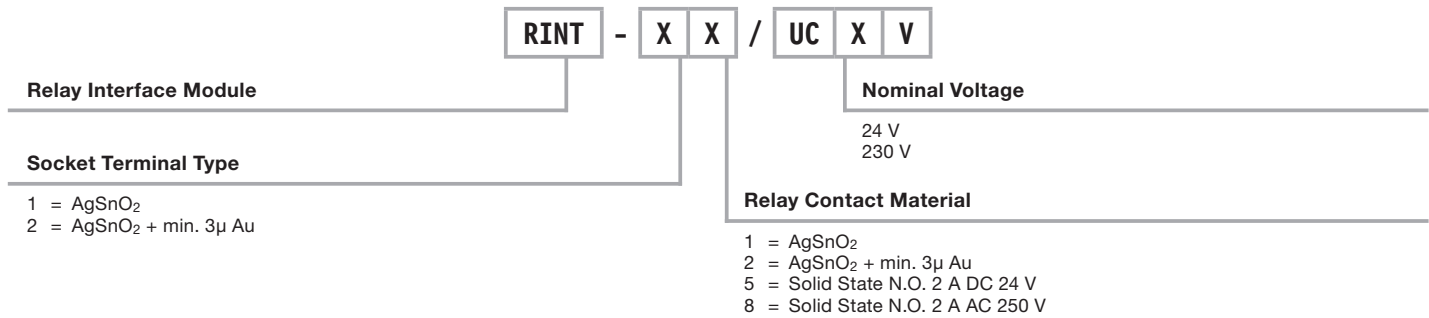
RINT Relay and Accesories Part Number Key

Part Number Keys are to assist in IDENTIFICATION ONLY. Consult factory for catalog items not identified.

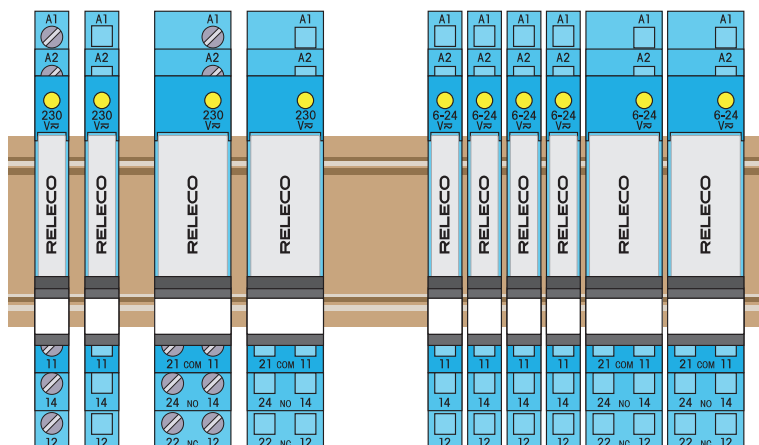
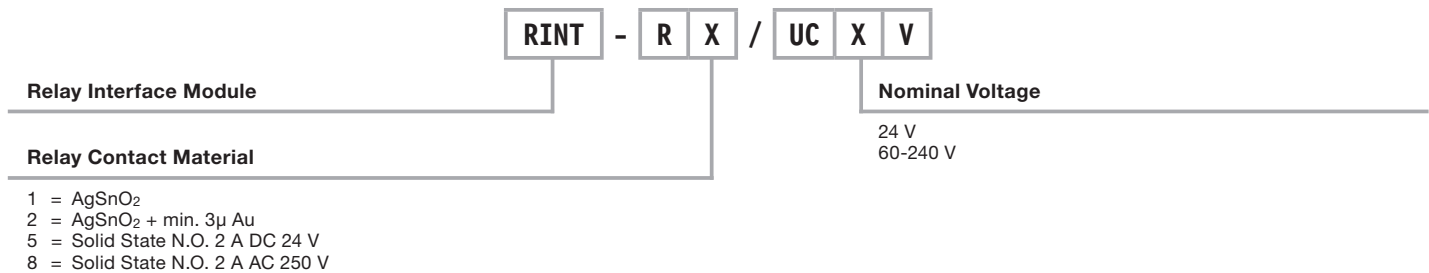
RINT interface relays consist of two components:

- Relay
- Socket

Complete Relay Module (Relay and Socket 6.2 mm) Part Number Key



Relay Part Number Key

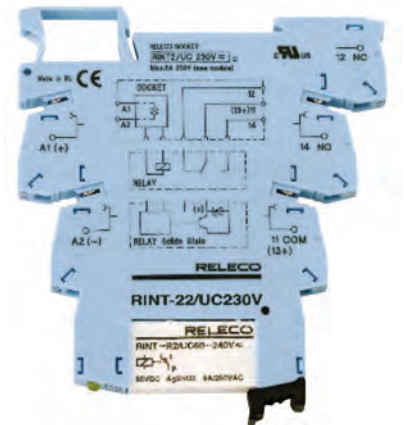


RELAY + SOCKET	DESCRIPTION
RINT-11 / UC24V	Screw terminal AgSnO ₂
RINT-21 / UC24V	Cage clamp AgSnO ₂
RINT-11 / UC230V	Screw terminal AgSnO ₂
RINT-21 / UC230V	Cage clamp AgSnO ₂
RINT-12 / UC24V	Screw terminal AgSnO ₂ +3μ Au
RINT-22 / UC24V	Cage clamp AgSnO ₂ +3μ Au
RINT-12 / UC230V	Screw terminal AgSnO ₂ +3μ Au
RINT-22 / UC230V	Cage clamp AgSnO ₂ +3μ Au
RINT-15 / UC24V	Solid State screw terminal, DC loads
RINT-25 / UC24V	Solid State cage clamp, DC loads
RINT-18 / UC24V	Solid State screw terminal, AC loads
RINT-28 / UC24V	Solid State cage clamp, AC loads

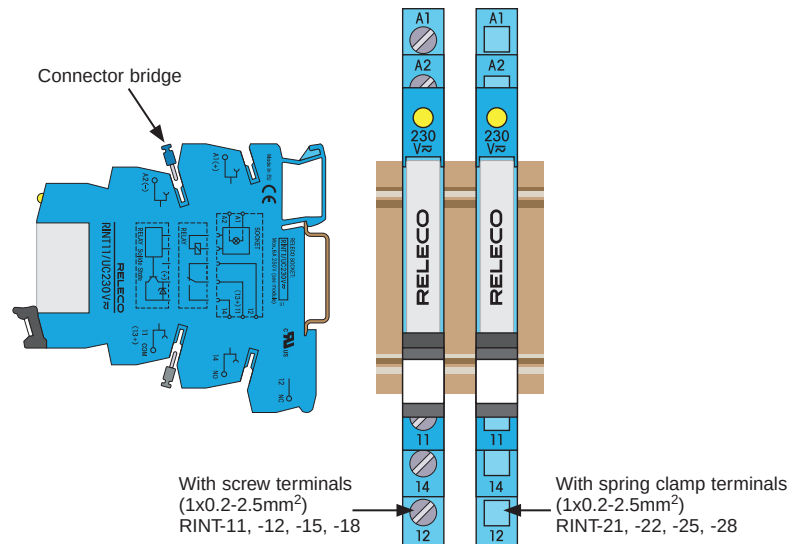
RELAY	DESCRIPTION
RINT-R1/UC24V	Relay module contacts AgSnO ₂
RINT-R1/UC60-240V	Relay module contacts AgSnO ₂ + 3μ Au
RINT-R2/UC60-240V	Relay module contacts AgSnO ₂ + 3μ Au
RINT-R5/DC24V	Solid State relay module, DC loads
RINT-R8/DC24V	Solid State relay module, AC loads

BRIDGES	ACCESORIES
RINT-BR1-500B	Blue bridges (1 unit, 500 mm)
RINT-BR1-500G	Grey bridges (1 unit, 500 mm)
RINT-BR2-06G/10	Grey bridges (10 units)
RINT-BR2-06B/10	Blue bridges (10 units)
RINT-BR2-06R/10	Red bridges (10 units)

LABELS	ACCESORIES
RINT-MA6-0/100	Labels (100 units)



- Relay module up to 6 A 250 V, different contact material
- Solid state modules DC, AC up to 2 A
- Coil UC = AC/DC, not polarised, integrated freewheeling circuit
- LED status display
- Screw terminals or spring cage terminals
- Optional coloured bridges for different connections
- Narrow mounting 6.2 mm



Interface module

Complete with integrated LED and switching module

RINT-11, RINT-21

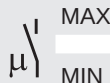
Interface module

for PLC's and process control. High power contact gSnO₂. With screw terminals (RINT-11) or spring cage terminals (RINT-21). No external freewheeling circuit required. Bridges optional.

RINT-12, RINT-22

Interface module

Specially for PLC, process controls with DC currents. Contact AgSnO₂+3μAu. With screw terminals (RINT-12) or spring cage (RINT-22). No external freewheeling circuit required. Recommended max. load 250V 6A resistive. Bridges optional.



Technical data (Tamb 20°C)

Contact type/material
Switching power AC1
Switching power DC1 24V/230V
Switching power AC15
Peak inrush current
Switching cycles: mech./elec.
Isolation EN 61810-5

Operation voltage AC50/60Hz/DC
Power consumption Pmax. 24V/230V
On delay/release time
Temp.: operating/(storage)

6 A 250 V ~

100 mA / 12 V

CO/AgSnO₂
1500 W
140 W / 40 W
NO 750 W / NC 375 W
10 A / 4 s
10x10⁶ / 10⁵
4 kV

-20 to +100%
170 / 217 mW
5 ms / 2.5 ms
-40°C to 80°C/-40°C to 85°C

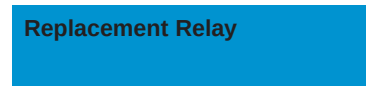
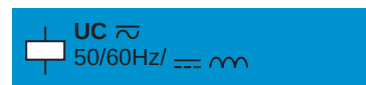
6 A 250 V ~

100 mA / 12 V

CO/AgSnO₂ + 3μAu
1500 W
140 W / 40 W
—
10 A / 4 s
10x10⁶ / 10⁵
4 kV

-20 to +100%
170 / 217 mW
5 ms / 2.5 ms
-40°C to 80°C/-40°C to 85°C

Ordering-No.

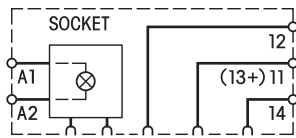


24, 230
RINT-11/UC.....V
RINT-21/UC.....V

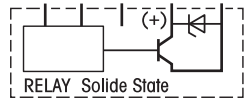
24, 230
RINT-12/UC.....V
RINT-22/UC.....V

RINT-R1/UC60-240V
RINT-R1/UC24V

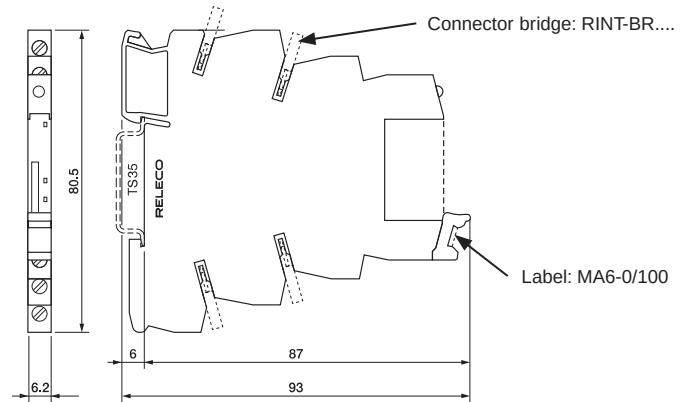
RINT-R2/UC60-240V
RINT-R2/UC24V



Relay module
RINT-R1; RINT-R2



Solid-state module
RINT-R5; RINT-R8



RINT-15, RINT-25

Solid State Interface module

for PLC's and process control. DC solid state switch, type NO. For fast and high frequently switching. With screw terminals (RINT-15) or spring cage terminals (RINT-25). Bridges optional.

2 A 24 V ~

0.05 mA / 12 V

NO / Solide-state DC

48 W

—

2.5 kV

-37 to +25%

185 mW

<60 μs / <600 μs

-30°C to 80°C/-40°C to 100°C

RINT-18, RINT-28

Interface module

for PLC's and process control. AC output interface 0 synchronous switching NO for resistive or similar load. (No transformer rec.) With screw terminals (RINT-18) or spring cage terminals (RINT-28). Bridges optional.

2 A 240V ==

25 mA / 12 V

NO / Solide-state AC (triac)

480 W

—

40 A / 20 ms

2.5 kV

-37 to +25%

185 mW

<60 μs / <600 μs

-30°C to 80°C/-40°C to 100°C

Order Example:

Interface module
RINT-21/UC24V

Connector bridge
RINT-BR2-6B/10 (packing unit: 1x10 pieces)

Replacement relay
RINT-R1/UC24V

Accessories:

Label:

RINT-MA6-0/100 (100 pieces)

Bridges:

500mm blue: RINT-BR1-500B
(1 piece)

500mm grey: RINT-BR1-500G
(1 piece)

6mm blue: RINT-BR2-6B/10
(10 pieces)

6mm grey: RINT-BR2-6G/10
(10 pieces)

6mm red: RINT-BR2-6R/10
(10 pieces)

24, 230

RINT-15/DC.....V
RINT-25/DC.....V

RINT-R5/DC24V

24, 230

RINT-18/DC.....V
RINT-28/DC.....V

RINT-R8/DC24V



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