

Automation & Control **Telemecanique** The essential guide

2006



New telemecanique.com portal



This site allows you to access all the Telemecanique products in just 2 clicks via comprehensive range data-sheets, with direct links to:

- Complete library: technical documents, catalogs, certificates, FAQs, brochures...
- Selection guides from the e-catalog
- Product discovery sites

You will also find illustrated overviews, news how to buy and get support. To live automation solutions every day!

Product page

OEM solutions

Application case histories

Service and support

E-Catalog



www.us.telemecanique.com

Access and benefits 24/7.

- Easy navigation
- Access to support and help on every page
- Google search engine
- Use pictorial or standard menu navigation

General contents

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Telemecanique,
b the Schneider
Electric brand for
Automation & Control.
b innovative
products...

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Telemecanique, the Schneider Electric brand for Automation & Control

Used together or separately, Telemecanique products can provide complete functionalities for all of your industrial, building, infrastructure, and energy automation applications.



Known for its quality and innovation for over 80 years, Telemecanique offers a wide range of products in over 130 countries around the world.

TeSys motor starters
Altivar drives
Altistart soft starters
Lexium motors and servo-drives
Advantys distributed I/O
Zelio relays and **Twido** controllers
Modicon PLCs
Unity automation hardware and software solution (NEW !)
Magelis operator terminals
Harmony control and signalling units
Osiconcept sensors
Preventa safety solutions
etc.

Simply Smart !

Leveraging ingenuity and intelligence for ease of use

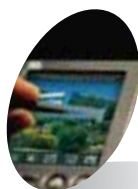


Simplicity

- ρ Cost effective "optimum" offers that make selection easy for most typical applications
- ρ Products that are easy to understand for users, electricians and automation specialists
- ρ User-friendly intuitive programming,

...for example
Zelio Logic

Easy programming directly on the smart module with either the Compact or Modular versions, or via PC using FBDs or Ladder Logic. Control of applications by simply sending an SMS...



Ingenuity

- ρ Auto-adapts to its environment, "plug & play"
- ρ Application functions, control, communication and diagnostics embedded in the products
- ρ User-friendly operation either directly on the product or remotely

...for example
Altivar 71

"Plug & drive" speed drive with functionality adapted specifically for pumps and fans, solutions with harmonics protection and PowerSuite software for pocket PCs, perfectly suited for building applications!

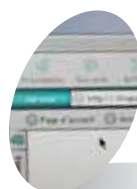


Flexibility

- ρ Interchangeable modular functions, to better meet the requirements for extensions
- ρ Software and accessories common to multiple product families

...for example
Twido

Programmable controller with "compact" or "modular" versions to better meet your needs. Its flexibility enables you to add options like a display, communication bus, more memory,....



Openness

- ρ Compliance with field bus, connection, and software standards
- ρ Enabling decentralized or remote surveillance via the web with **Transparent Ready** products

...for example
TeSys U

The first starter controller to integrate motor power and control functions, adaptable to a variety of standard buses, and permits you to transparently monitor applications via the web.



Compactness

- ρ High functionality in a minimum of space
- ρ Freedom in implementation

...for example
Magelis XBT GT

Besides the fact that it is the most compact semi-graphic display on the market, it offers a high degree of legibility, configurable keys, and multi-language management capabilities.



Telemecanique,
innovative products for all **Automation & Control** functions.

Simply Smart !



Interfaces & I/O

Connectors

Cable-ends, terminal blocs

Interfaces

Plug-in relays, analog converters, discrete interfaces
Pre-wired interfaces, IP20/IP67 distributed I/O

AS-Interface

IP20/IP67 interfaces, cables, repeaters, accessories, addressing and adjustment terminals

Machine safety

Safety monitors and controllers on AS-Interface

Software

Software to design and install AS-Interface system, safety monitors and controllers on AS-Interface programming software

Detection

Sensors

Limit switches
Proximity sensors
Photo-electric and ultrasonic sensors
Pressure switches
Rotary encoders

RFID, vision

Inductive identification
Vision system

Machine safety

Switches, light curtains, mats

Software

Safety mats
configuration software

Operator dialog

Control & signalling units

Control and signalling units, cam switches
Beacons and indicator banks

Human machine interfaces

Operator interface terminals, industrial PCs, Web servers, HMI and SCADA PC-based software

Control stations, mounting solutions

Control and pendant stations, front panels
mounting kits

AS-Interface

Control stations, keypads, beacons

Machine safety

Emergency stops, control stations, enabling switches, foot switches

Software

Operator terminal software

Systems & Architectures

Connecting Ethernet devices

Web-enabling PLCs on Ethernet

Application protocols and field buses

Mounting systems

Enclosures

Wall mounted enclosures
Floor standing enclosures, suite type cubicles
Industrial boxes

Equipment and accessories

Thermal control equipment
Power splitter blocks
Mounting accessories

Automation

Relays

Plug-in relays, electronic timers, control relays, counts
Smart relays

PLCs, PC based control, distributed I/O

Programmable controllers
PLC platforms
PC based control
Distributed I/O, I/O controllers

AS-Interface

Master modules for Modicon PLCs

Machine safety

Safety PLCs, controllers and modules

Software

PLCs and safety controllers programming software

Software tools

Global software
Generation of application systems
Application control
Collaborative development

Dedicated software
See **Software** in other functions

Power supplies

Power supplies

Power supplies
Switch mode power supplies
Filtered rectified power supplies, transformers

AS-Interface
Power supplies

Motion and Drives

Starters, drives and servo drives

Soft starters
Variable speed drives
Motion modules
Servo drives
Servo motors

Software

Software for drives and motors

Motor control

Motor starters

Contactors
Circuit breakers, fuse carriers
Thermal relays
Combinations, motor controllers

Mounting solutions

Motor starter mounting kit

AS-Interface

Motor controllers, enclosures, variable speed drives

Machine safety

Switch disconnectors, thermal-magnetic motor circuit breakers, enclosed starters

Software

Motor control programming software

Detection

A complete range of innovative and more simple to use sensors

Benefit from Telemecanique's major innovation:

Osiconcept®

Offering simplicity through innovation

A worldwide detection first for improving productivity:

- b product selection simplified
 - b product availability simplified
 - b installation and setting-up simplified
 - b maintenance simplified
 - b detection simplified using a single supplier.
- Improved simplicity for improved productivity.

Osiconcept

Improve performance by making your selection and assembly *less complicated* and *more intelligent*.

Improve service expertise with an efficient product line offering *simplified* selection and improved selling potential.

Reduce maintenance time with products that are *simpler* and unequalled in *flexibility*.



Select the sensor according to your specific requirements

"Universal" series:

Multi-purpose products providing multiple functions. Osiconcept products are included in this series.

"Optimum" series:

Designed for essential and repetitive functions.

"Application" series:

Offers functions specifically for specialist needs, thus providing the ideal solution for your more complex applications.

Contents

1

> A single product that automatically adapts to all conditions



> A single product that automatically adapts to all installation environments



> A single product that automatically learns both its detection mode and detection zone



> Simple parametering of many different resolutions on the same product



> Availability of more than 5,000 interchangeable configurations within 24 hours



> A user-friendly product at last; easy to parameter prior to installation and to modify during operation



b Osiris™ Photo-electric sensors 1/2 to 1/11

Detection without contact of objects whatever their shape or material

- > Detection from a few millimeters to several tens of meters
- > 3D adjustable fixing accessories
- > Specific products for particular applications

b Osiprox™ Inductive proximity sensors 1/12 to 1/22

Detection without contact of metal objects

- > Sensor / object distance - 60 mm
- > Generic cylindrical and flat form products
- > Specific products for particular applications

b Osiprox Capacitive proximity sensors 1/23

b Osiprox Ultrasonic sensors 1/24 to 1/33

Detection without contact of any object of any material

- > Detection from a few millimeters up to 8 meters
- > Extra large range to ensure finding the right product
- > Specific products for particular applications

b Osiswitch™ Limit switches 1/34 to 1/39

Detection by contact of rigid objects

- > Positive opening operation of electrical contacts
- > Object speed - 1.5 m/s
- > Specific products for particular applications

b Nautilus Sensors for pressure control 1/40 to 1/41

Detection by contact with fluid

- > Electronic pressure and vacuum switches
- > Analog pressure sensors
- > Electromechanical pressure and vacuum switches

1

Background

Reflector

Thru-beam accessory

Osiconcept®
Offering simplicity through innovation

A single product that automatically adapts to all conditions.

Programmable NO / NC
NO: object present = output ON
NC: no object present = output ON



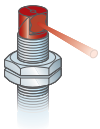
	Design 18 plastic	Design 18 metal	Miniature design	Compact design 50 x 50	Compact design	PhotoVirtu
Usable sensing distance	Diffuse	0.3 m	0.3 m	1.0 m	2 m	0.3 m
	Diffuse with background supp.	0.12 m	0.12 m	0.3 m	1.3 m	0.12 m
	Polarized retroreflective	2 m	2 m	4 m	11 m	2 m
	Thru-beam	15 m	15 m	30 m	40 m	15 m
Mounting (mm)	M18 x 1	M18 x 1	direct: centers 25.5, M3 screws	direct: centers 40 x 40, M4 screws	direct: centers 30/38 to 40/50/74, M5 screws	M18 x 1 or direct: centers 24.1, M3 screws
Case M (metal) P (plastic) / Dimensions (mm) Ø x L or W x H x D	P / M18 x 64	M / M18 x 64	P / 12 x 34 x 20	P / 18 x 50 x 50	P / 30 x 92 x 71	P / 65 x 44 x 18
Common characteristics	Adjustment of sensing distance: using teach mode / Setting-up assistance LEDs (⊗): yes / Temperature		range (°C): – 25 to + 55 / Degree of protection (conforming to IEC 60529): IP65, IP67 (XUK: IP65)			

Sensors for DC applications (solid-state output: transistor)

Connection		Pre-cabled, PvR (2 m)					
T / R 3-wire	PNP programmable NO / NC	XUB0APSNL2	XUB0BPSNL2	XUM0APSAL2	–	–	–
	NPN programmable NO / NC	XUB0ANSNL2	XUB0BNSNL2	XUM0ANSAL2	–	–	–
	PNP / NPN programmable NO / NC	–	–	–	XUX0AKSAL2	–	–
Connection		M12 connector		M8 connector	M12 connector		M12 connector
T / R 3-wire	PNP programmable NO / NC	XUB0APSNM12	XUB0BPSNM12	XUM0APSAM8	–	–	XUN0APSNM12
	NPN programmable NO / NC	XUB0ANSNM12	XUB0BNSNM12	XUM0ANSAM8	–	–	XUN0ANSNM12
	PNP / NPN programmable NO / NC	–	–	–	XUX0AKSAM12	XUX0AKSAM12	–
Connection		Screw terminals					
T / R 3-wire	PNP / NPN programmable NO / NC	–	–	–	–	XUX0AKSAT16	
Switching capacity (mA) main output / alarm output		100 / –	100 / –	100 / 50	100 / 50	100 / 100	
Common characteristics		Supply voltage limits, min/max (V) including ripple: 10 - 36 (except XUM 10 - 30) / Switching		frequency (Hz): 250 / Overload and short-circuit protection (★) / LED output state indicator (⊗): yes / power on LED (⊗): yes			
Thru-beam transmitter	pre-cabled (2 m)	XUB0AKSNL2T	XUB0BKSNL2T	XUM0AKSAL2T	XUX0AKSAL2T	–	–
	connector	XUB0AKSNM12T	XUB0BKSNM12T	XUM0AKSAM8T	XUX0AKSAM12T	XUX0AKSAM12T	–
	screw terminals, ISO 16 cable gland	–	–	–	–	XUX0AKSAT16T	–

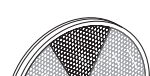
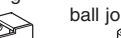
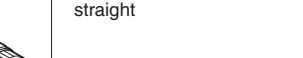
Multi-current/multi-voltage sensors for AC/DC applications 10 - 36 V DC / 20 - 264 V AC including ripple on DC (relay output, 1 C/O, 3 A)

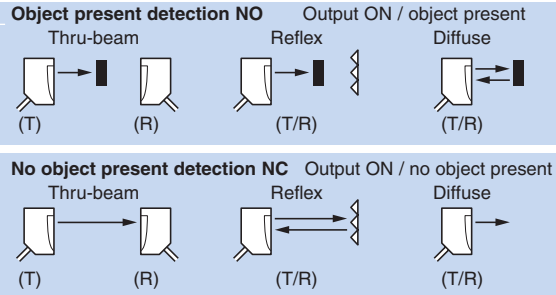
Connection		Pre-cabled, PvR (2 m)					
T / R	programmable, NO/NC with time delay	–	–	–	XUK0ARCTL2	–	–
Connection		Screw terminals					
T / R	programmable, NO/NC with time delay	–	–	–	–	XUX0ARCTT16	–
LED output state indicator (⊗) / power on LED (⊗)		–	–	–	⊗ / ⊗	⊗ / ⊗	–
Switching frequency (Hz)		–	–	–	20	20	–
Time delay(s)		–	–	–	Adjustment from 0 to 15 s, on energization, on de-energization or monostable		
Thru-beam accessory	pre-cabled, PUR (2 m)	–	–	–	XUK0ARCTL2T	–	–
	screw terminals, ISO 16 cable gland	–	–	–	–	XUX0ARCTT16T	–



90° head
All the above Osiris Design 18 sensors are available with an integral 90° head.
To order, replace the letter "N" in the reference by "W".
Example: For pre-cabled versions: XUB0APSNL2 becomes XUB0APSWL2.
For connector versions: XUB0APSNM12 becomes XUB0APSWM12.
Sensing distances: refer to www.SESensors.com

Accessories

Reflectors			3D fixings with ball joint			Simple fixings			Suitable female plug-in connectors, including pre-wired versions				
 XUZC24	 XUZC80	 XUZC50	Reflectors (mm)		 Bracket with ball joint for sensors and reflector XUZC50 for XUB... XUZB2003 XUM... XUZM2003 XUK... XUZK2003 XUX... XUZX2003	 Protective housing with ball joint for XUM... XUZM2004 XUK... XUZK2004 XUX... XUZX2004	 M12 rod for ball joint XUZ2001	 Fixing support for M12 rod XUZ2003	 Single bracket for XUB... XUZA118 (stnls. steel) XUM... XUZA50 XUK... XUZA51 XUX... XUZX2000	 with ball joint XUZA218 (plastic) — — —	 length 2 m without LED pre-wired, 90° pre-wired, straight		
			Ø 21	XUZC21									
			24 x 21	XUZC24									
			Ø 31	XUZC31									
			Ø 39	XUZC39									
			Ø 80	XUZC80									
			50 x 50	XUZC50									
			100 x 100	XUZC100									
		</											



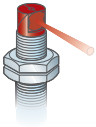
		Design 18 plastic	Design 18 metal
Usable sensing distance	Diffuse	0.6 m	0.6 m
	Polarized reflex	2 m	2 m
	Reflex	4 m	4 m
	Thru-beam	15 m	15 m
Mounting (mm)		M18 x 1	M18 x 1
Case M (metal) P (plastic) / Dimensions (mm) Ø x L or W x H x D		P / M18 x 46	M / M18 x 46
Setting-up assistance LEDs ☉		–	–
Common characteristics		Temperature range (°C): – 25 to + 55 / Degree of protection (conforming to IEC 60529): IP65, IP67 (XUK: IP65)	

Sensors for DC applications (solid-state output: transistor)

Connection	Pre-cabled, PvR, L = 2 m		M12 connector	Pre-cabled, PvR, L = 2 m	M12 connector
Transmitter	XUB2AKSNL2T		XUB2AKSNM12T	XUB2BKSNL2T	XUB2BKSNM12T
Receiver or T/R, 3-wire PNP (1)	Diffuse, adjustable (2)	NO	XUB5APANL2	XUB5APANM12	XUB5BPANL2
		NC	XUB5APBNL2	XUB5APBNM12	XUB5BPBNL2
	Polarized reflex	NO	XUB9APANL2	XUB9APANM12	XUB9BPANL2
		NC	XUB9APBNL2	XUB9APBNM12	XUB9BPBNL2
	Reflex	NO	XUB1APANL2	XUB1APANM12	XUB1BPANL2
		NC	XUB1APBNL2	XUB1APBNM12	XUB1BPBNL2
	Thru-beam receiver	NO	XUB2APANL2R	XUB2APANM12R	XUB2BPANL2R
		NC	XUB2APBNL2R	XUB2APBNM12R	XUB2BPBNL2R
Supply voltage limits, min/max (V) including ripple	10 - 36		10 - 36	10 - 36	10 - 36
Switching frequency (Hz)	500		500	500	500
Common characteristics for DC versions	Switching capacity, max (mA): 100		Overload and short-circuit protection (★) / LED output state		

Multi-current/multi-voltage sensors for AC/DC applications 10 - 36 V DC / 20 - 264 V AC including ripple on DC (relay output, 1 C/O, 3 A)

Connection	–		–	–	Also available in Design 18 metal, 2-wire type multi-current/multi-voltage AC/DC version. Please refer to www.SESensors.com
Transmitter	–		–	–	
Receiver or T/R	Diffuse	NO + NC	–	–	
		Polarized reflex	NO + NC	–	
		Reflex	NO + NC	–	
		Thru-beam	NO + NC	–	
Switching frequency (Hz)	–		–	–	
LED output state indicator (☉) / power on LED (☉)	–		–	–	



90° head
All the above Osiris Design 18 sensors are available with an integral 90° head.
To order, replace the letter “N” in the reference by “W”.
Example: For pre-cabled versions: XUB5APSNL2 becomes XUB5APSWL2.
For connector versions: XUB5APSNM12 becomes XUB5APSWM12.
Sensing distances: refer to www.SESensors.com

Accessories

Reflectors			3D fixings with ball joint		
XUZC24	XUZC80	XUZC50			XUZ2001

Reflectors (mm)	
Ø 21	XUZC21
24 x 21	XUZC24
Ø 31	XUZC31
Ø 39	XUZC39
Ø 80	XUZC80
50 x 50	XUZC50
100 x 100	XUZC100

Bracket with ball joint for sensors and reflector XUZC50	
for	
XUB...	XUZB2003
XUM...	XUZM2003
XUK...	XUZK2003
XUX...	XUZX2003

Protective housing with ball joint	
for	
XUM...	XUZM2004
XUK...	XUZK2004
XUX...	XUZX2004



For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemecanique.com



	Miniature design	Compact design 50 x 50	Compact design	PhotoVirtu
	0.4 m	1 m DC or AC	2.1 m	0.1 m / 0.6 m
	2 m	5 m DC or 4 m AC	11 m	2 m
	4 m	9 m DC or 17 m AC	14 m	–
	8 m	30 m DC or 20 m AC	40 m	15 m
	direct: fixing centers 25.5, M3 screws	direct: fixing centers 40 x 40, M4 screws	direct: fixing centers 30/38 to 40/50/74, M5 screws	M18 x 1 or direct: centers 24.1, M3 screws
	P / 12 x 34 x 27	P / 18 x 50 x 50	P / 30 x 92 x 71	P / 65 x 44 x 18
	☉	☉	☉	–
/ LED output state indicator and power on LED (☉): yes				

	Pre-cabled, PvR, L = 2 m	M8 connector	Pre-cabled, PvR, L = 2 m	M12 connector	Screw trmls., ISO 16 cbl.gland	M12 connector	M12 connector
	XUM2AKSNL2T	XUM2AKSNM8T	XUK2AKSNL2T	XUK2AKSNM12T	XUX0AKSAT16T	XUX0AKSAM12T	XUN0AK5NM12T
	XUM5APANL2	XUM5APANM8	XUK5APANL2	XUK5APANM12	XUX5APANT16	XUX5APANM12	XUN4APANM12 (3)
	XUM5APBNL2	XUM5APBNM8	XUK5APBNL2	XUK5APBNM12	XUX5APBNT16	XUX5APBNM12	XUN4APBNM12 (3)
	XUM9APANL2	XUM9APANM8	XUK9APANL2	XUK9APANM12	XUX9APANT16	XUX9APANM12	XUN9APANM12
	XUM9APBNL2	XUM9APBNM8	XUK9APBNL2	XUK9APBNM12	XUX9APBNT16	XUX9APBNM12	XUN9APBNM12
	XUM1APANL2	XUM1APANM8	XUK1APANL2	XUK1APANM12	XUX1APANT16	XUX1APANM12	–
	XUM1APBNL2	XUM1APBNM8	XUK1APBNL2	XUK1APBNM12	XUX1APBNT16	XUX1APBNM12	–
	XUM2APANL2R	XUM2APANM8R	XUK2APANL2R	XUK2APANM12R	XUX2APANT16R	XUX2APANM12R	–
	XUM2APBNL2R	XUM2APBNM8R	XUK2APBNL2R	XUK2APBNM12R	XUX2APBNT16R	XUX2APBNM12R	–
	10 - 30	10 - 30	10 - 30	10 - 30	10 - 36	10 - 36	10 - 36
	500	500	500	500	500	500	500
indicator (☉): yes / power on LED (☉): yes							

	–	–	Pre-cabled, L = 2 m	–	Screw trmls., ISO 16 cbl.gland	–	–
	–	–	XUK2ARCNL2T	–	XUX0ARCTT16T	–	–
	–	–	XUK5ARCNL2	–	XUX5ARCNT16	–	–
	–	–	XUK9ARCNL2	–	XUX9ARCNT16	–	–
	–	–	XUK1ARCNL2	–	XUX1ARCNT16	–	–
	–	–	XUK2ARCNL2R	–	XUX2ARCNT16R	–	–
	–	–	20	–	20	–	–
	–	–	☉ / ☉	–	☉ / ☉	–	–

- (1) For versions with NPN output, replace “P” by “N”. Example: XUB1APANL2 becomes XUB1ANANL2
(2) XUN model is not adjustable
(3) For versions with 0.6 m (2') sensing distance, replace “4” by “5”. Example: XUN4APANM12 becomes XUN5APANM12

Simple fixings

Fixing support for M12 rod	Single bracket	
XUZ2003	for	
	XUB...	XUZA118 (stnls. steel)
	XUM...	XUZA50
	XUK...	XUZA51
	XUX...	XUZX2000
		–

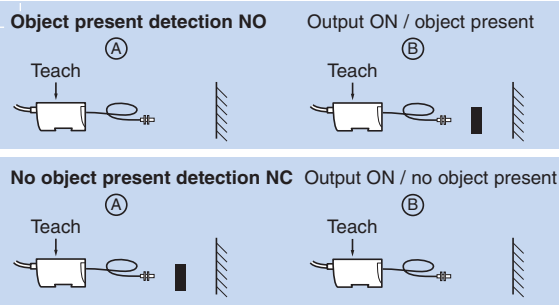
Suitable female plug-in connectors, including pre-wired versions

length 2 m without LED	pre-wired, 90°	pre-wired, straight
M8	XSZCS151	XSZCS141
M12	XSZCD111Y	XSZCD101Y



For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemecanique.com

Photo-electric sensors, fiber optic
Amplifier



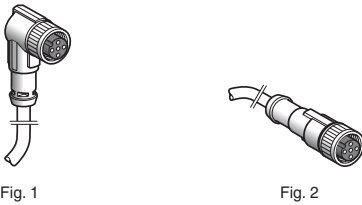
	Optimum	Universal
System	For plastic fibers	
Max / usable sensing distance (mm)	Depending on fiber	
Mounting (mm)	DIN rail or direct: fixing centers 25, M3 screws	
Dimensions (mm) H x W x D	40 x 10 x 65	
Case: P (plastic)	P	
Sensitivity adjustment	Using teach mode	
Setting-up assistance LEDs ☉	☉	☉ and 4-digit display
Temperature range (°C)	- 10 to + 55	
Degree of protection (conforming to IEC 60529)	IP65 with Ø 1 fiber / IP64 with Ø 0.5 fiber	

Sensors for DC applications (solid-state output: transistor)

Connection						Pre-cabled, PVC (2 m)	
References	3-wire PNP	programmable	NO / NC			XUDA1PSML2	XUDA2PSML2
Amplifier	3-wire NPN	programmable	NO / NC			XUDA1NSML2	XUDA2NSML2
Connection						M8 connector	
References	3-wire PNP	programmable	NO / NC			XUDA1PSMM8	XUDA2PSMM8
Amplifier	3-wire NPN	programmable	NO / NC			XUDA1NSMM8	XUDA2NSMM8
Supply voltage limits, min/max (V) including ripple	10.8 - 26.4						
Switching capacity (mA) main output	100						
Alarm output (switching capacity mA)	—					50	
Overload and short-circuit protection (★)	★					★	
LED output state indicator (☉)	☉					☉	
Switching frequency (Hz)	1000					1000 (standard mode) 5000 (fast mode). Sensing distance halved in fast mode	
Programmable timer	—					40 ms on beam break	
Anti-interference	—					in standard mode	

Accessories

Suitable female pre-wired plug-in connectors for use with amplifier XUD - M8



length 2 m	
90° Elbowed, fig. 1	XSZCS151
Straight, fig. 2	XSZCS141

For thru-beam system plastic fiber optics

Lenses	For increasing sensing distance (pair)	XUFZ01
	With 90° mirror (pair)	XUFZ02
Fixing clamp with lens (set of 2)	Front screw fixing for fiber optics XUFZ920	XUFZ04

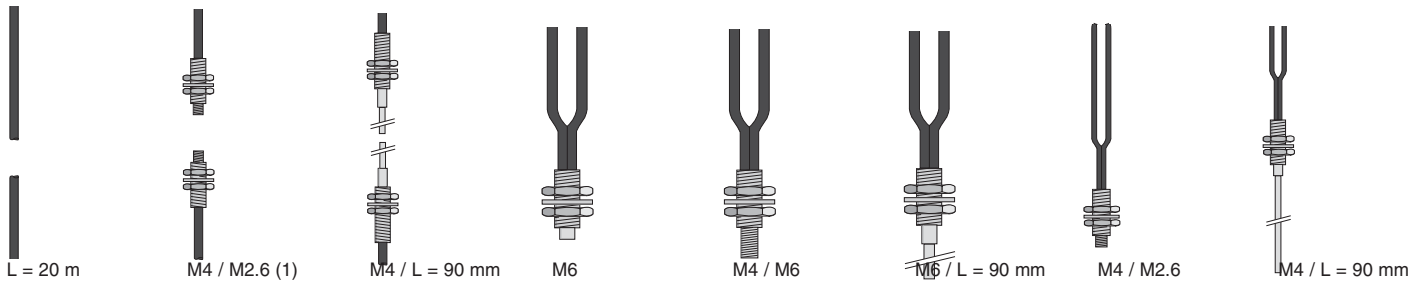
For all system plastic fiber optics

Fiber trimmer	For trimming fibers to length (included with all fiber optics)	XUFZ11
Protective metal tubing	Length 1 m, for plastic fibers with threaded end fittings	
	For M4 thread	XUFZ210
	For M6 thread	XUFZ310

(1) Suitable for use with XUFZ01 and XUFZ02

System
Sensing distance (mm)
Fiber cross-section
Fiber Ø (mm)
Sheath Ø
Temperature range (°C)
References
Mounting

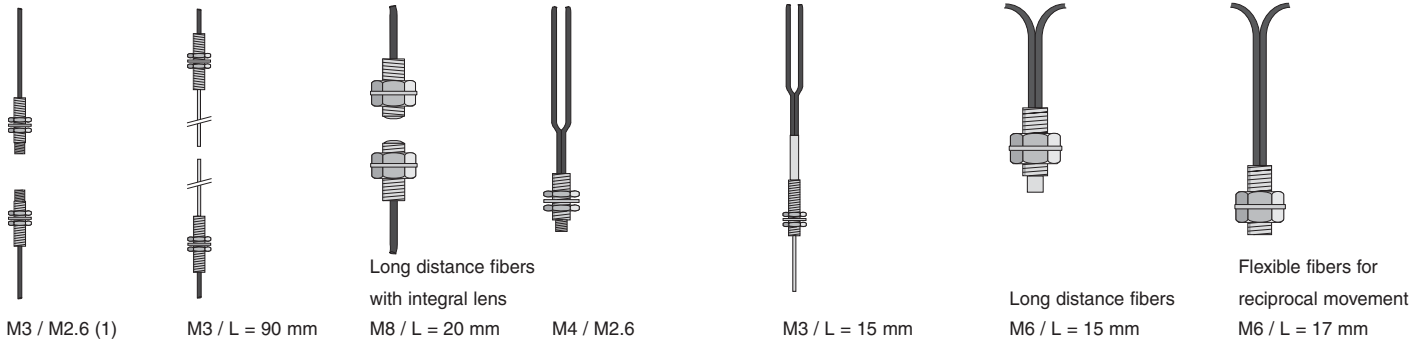
Plastic fiber optic light guides (length 2 m)



(1) Suitable for use with XUFZ01 and XUFZ02

System
Sensing distance (mm)
Fiber cross-section
Fiber Ø (mm)
Sheath Ø
Temperature range (°C)
References
Mounting

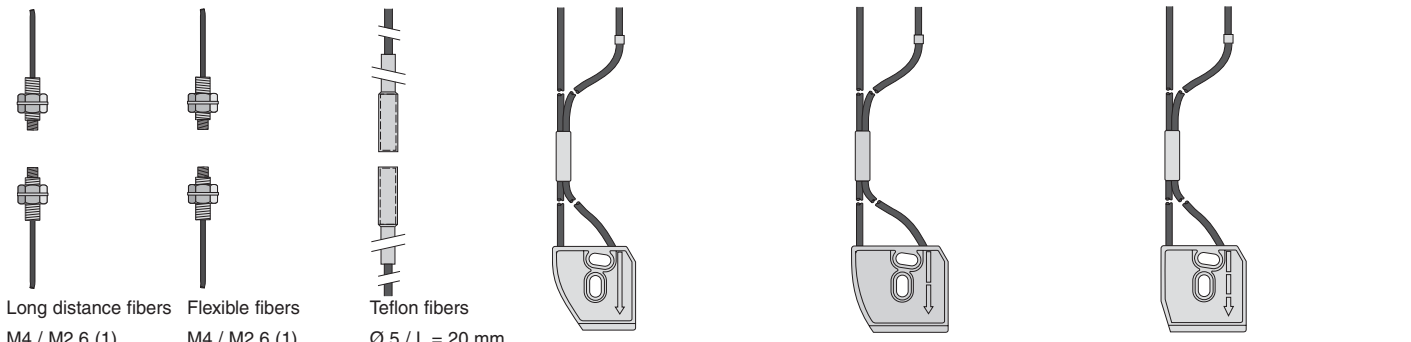
(2) With XUFZ04 fixing clamp with lens
(3) Depending on length and lens fixing clamps



(1) Suitable for use with XUFZ01 and XUFZ02

System
Sensing distance (mm)
Fiber cross-section
Fiber Ø (mm)
Sheath Ø
Temperature range (°C)
References
Mounting

System
Sensing distance (mm)
Fiber cross-section
Fiber Ø (mm)
Sheath Ø
Temperature range (°C)
References
Mounting



(1) Suitable for use with XUFZ01 and XUFZ02

System
Sensing distance (mm)
Fiber cross-section
Fiber Ø (mm)
Sheath Ø
Temperature range (°C)
References
Mounting

Thru-beam	Diffuse focused for full color sensor XURC4
300 or 2000 (1)	10
100 or 750 (1)	20
1000	30
Sensing distance (mm)	
Fiber cross-section	
Fiber Ø (mm)	
Sheath Ø	
Temperature range (°C)	
References	
Mounting	

Photo-electric sensors - Application
Packaging series



	Contrast sensors - color mark			Luminescence sensors		Color sensors			Forked, for detection of opaque labels	Detection of aqueous liquids
	Diffuse	Diffuse (manual)	Diffuse (with teach mode)	Diffuse (manual)	Diffuse (with teach mode, analog output)	Diffuse	Diffuse (with integral amplifier)	Thru-beam or diffuse (4)	Thru-beam infrared	Thru-beam water detector
Usable sensing distance	0.019 m	0.009 m (1)	0.009 m (1)	0.02 m	0.009 m (1)	0.02 m	0.040 - 0.060 m	0.005 - 0.25 m (4)	0.002 m	0.2 m (5)
Mounting (mm)	direct: ctrs. 40 x 40	direct: 21 x 28, M5 screws	direct: 21 x 28, M5 screws	M18 x 1	direct: ctrs. 28, M5 screws	direct: centers 40 x 40	direct: ctrs. 68x42,M5 screws	on rail, centers 16	direct: centers 18	direct: centers 20
Sensitivity adjustment potentiometer	with teach mode button		with teach mode button		with teach mode button	with teach mode button	with teach mode button	with teach mode button	with teach mode button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	P / ☉	M / ☉	M / ☉	M / ☉	M / ☉	P / ☉	M / ☉	M / ☉	M / ☉	P / ☉
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 10 to + 55 / IP65	- 10 to + 55 / IP67	- 10 to + 55 / IP67	- 25 to + 55 / IP67	- 10 to + 55 / IP67	- 10 to + 55 / IP65	- 10 to + 55 / IP67	- 10 to + 55 / IP65	0 to + 55 / IP65	0 to + 40 / IP65
Dimensions (mm) Ø x L or H x W x D	50 x 15 x 50	100 x 30 x 62.5	96 x 31 x 64	Ø18 x 95	96 x 31 x 64	50 x 25 x 50	80 x 30 x 57	82 x 25 x 44	97 x 20 x 26	47 x 13 x 33

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector	M12 connector	M12 connector	M12 connector	M12 connector	M12 connector	Pre-cabled (2 m)	Pre-cabled (2 m)	M8 connector	Pre-cabled (2 m)
Transmitter / Receiver 3-wire PNP NO function	XURK1PSMM12	–	–	XU5M18U1D	–	XUKC1PSMM12	XURC3PPML2	XURC4PPML2	–	–
3-wire NPN NO function	XURK1NSMM12	–	–	–	–	XUKC1NSMM12	XURC3NPML2	XURC4NPML2	–	–
3-wire PNP / NPN programmable NO / NC	–	XURK0955D	XURK1KSMM12	–	XURU1KSMM12	–	–	–	XUVK0252S	XUMW1KSNL2
Supply voltage limits, min/max (V) including ripple	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10.8 - 26.4
Switching capacity, max (mA) / Switching frequency (Hz)	100 / 5000	200 / 10000	200 / 10000	100 / 1000	200 / 2000	100 / 1500	100 / 1200	100 / 1200	100 / 10000	100 / 1000
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉

(1) 0.007 m with XURZ02; 0.018 m with XURZ01

(4) Depending on fibers selected, see table below

(5) Nominal sensing distance 10 m. Use between 10 and 20 cm depending on application

Packaging series (continued)



	Detection of transparent materials		Objects on conveyor	Optical frames for detection of passage of objects	Forked with integral amplifier for indexing	Analog output Position control	Very long sensing distance or accurate sensing	High excess gain for resistance to accumulated dirt	Stainless steel version for resistance to harsh agents	
	Reflex (reflector not included)	Reflex (with teach mode) (50 x 50 reflector included)	Diffuse with adjustable b/ground suppression	Thru-beam 200 x 120 mm passageway (3)	Thru-beam	Diffuse	Thru-beam laser	Thru-beam	Polarised reflex	Diffuse
Usable sensing distance	0.8 m (2)	1.5 m	1 m	0.12 m	0.03 m	0.20 - 0.80 m	100 m	50 m	2 m	0.10 m
Mounting (mm)	M18 x 1	direct: ctrs. 40 x 40	direct: ctrs. 40 x 40	direct: 222.5, M5 screws	centers 47	ctrs: 30 - 11P cable gland	M18 x 1	M18 x 1	M18 x 1	M18 x 1
Sensitivity adjustment potentiometer		with teach mode button			–	–			–	–
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	P / –	P / ☉	P / ☉	M / ☉	P / –	P / ☉	P / ☉	M / ☉	M (stainless steel) / –	M (stainless steel) / –
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	+ 10 to + 55 / IP67	- 25 to + 55 / IP65	- 25 to + 55 / IP65	0 to + 60 / IP65	- 5 to + 55 / IP54	- 25 to + 60 / IP67	- 10 to + 45 / IP67	- 25 to + 55 / IP67	- 25 to + 55 / IP67	- 25 to + 55 / IP67
Dimensions (mm) Ø x L or H x W x L	Ø18 x 55	50 x 18 x 80	50 x 18 x 50	205 x 25 x 230	–	86 x 27 x 83	Ø18 x 76	M18 x 95	–	–

Sensors for DC applications (solid-state output: transistor)

Connection	Pre-cabled, PVC (2 m)	Pre-cabled, PVC (2 m)	Pre-cabled, PVC (2 m)	–	Pre-cabled, PvR (2 m)	Screw terminals	–	–	Pre-cabled (2 m)	Pre-cabled (2 m)
Transmitter / Receiver 3-wire PNP NO function	–	–	–	–	XUVH0312	–	–	–	–	–
3-wire NPN NO function	–	–	–	–	XUVJ0312	–	–	–	–	–
3-wire PNP programmable NO / NC	XUBH01353	–	–	–	–	–	–	–	XU9N18PP341	XU5N18PP341
3-wire NPN programmable NO / NC	XUBJ01353	–	–	–	–	–	–	–	XU9N18NP341	XU5N18NP341
3-wire PNP / NPN programmable NO / NC	–	XUKT1KSML2	XUK8AKSNL2	–	–	XUJK803538 (2)	–	–	–	–
Connection	M12 connector	M12 connector	M12 connector	M12 connector	–	–	M12 connector	M12 connector	M12 connector	M12 connector
3-wire PNP programmable NO / NC	XUBH01353D	–	–	–	–	–	XU2P18PP340DL	XU2M18AP20D (7)	XU9N18PP341D	XU5N18PP341D
3-wire NPN programmable NO / NC	XUBJ01353D	–	–	–	–	–	XU2P18NP340DL	–	XU9N18NP341D	XU5N18NP341D
3-wire PNP / NPN programmable NO / NC	–	XUKT1KSMM12	XUK8AKSNM12	XUVF120M12	–	–	–	–	–	–
Supply voltage limits, min/max (V) including ripple	10 - 30	10 - 30	10 - 30	18 - 30	19 - 38	20 - 30	10 - 30	10 - 30	10 - 30	10 - 30
Switching capacity, max (mA) / Switching frequency (Hz)	100 / 500	100 / 1500	100 / 250	400 / 500	150 / 1000	max: 20, min: 4 / 10000	100 / 500	100 / 30	100 / 500	100 / 500
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉

(2) With 50 x 50 mm reflector; 0.6 m with 24 x 21 mm reflector

(3) Different passageway sizes; 200 x 180: XUVF180M12, 200 x 250: XUVF250M12 and "U" form models available.

(6) Thru-beam system also available

(7) With 4 - 20 mA analog output

Accessories

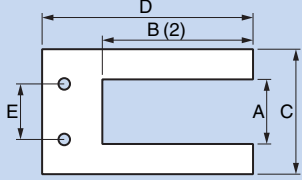
Suitable female plug-in connectors, including pre-wired versions			Lenses for color mark or luminescence detection	
length 2 m without LED	pre-wired, 90°	pre-wired, straight	Lens for doubling sensing distance	Ring for fixed focusing
M8 (or S)	XSZCS101	XSZCS111		
M12 (or D)	XSZD111Y	XSZCD101Y		
U20 (or K)	XSZK101Y	XSZCK111Y		
			XURZ01	XURZ02

Fiber optic light guides for use with full color sensor XURC4...									
	Fiber type	System	Reference	Sensing dist.	Fiber type	System	Reference	Sensing dist.	
	Focused	Diffuse	XUFN5L01L2	10 mm	Standard	Diffuse	XUFN05321	5 mm	
			XUFN5L02L2	20 mm			Thru-beam (color detection by transparency)	XUFN12301 + XUFZ01	250 m
			XUFN5L03L2	30 mm					

Photo-electric sensors - Application
High performance series

   				    						
	Forks			Amplifier for fiber optics						
	Thru-beam	Thru-beam	Thru-beam laser	Diffuse or Thru-beam depending on fibers for plastic fibers or plastic or glass fibers				Glass fiber optics Length = 0.6 m (4)		
Usable sensing distance	2 - 120 mm	2 - 120 mm	2 - 120 mm	dpg. on fibers (80 mm for diffuse, 200 mm for thru-beam, up to 4 m using end fitting accessories)				Sensing distance	Thru-beam	Diffuse
Mounting (mm)	(see column E below)			DIN rail				Fiber Ø	1.2 mm	1.2 mm
Sensitivity adjustment	potentiometer, 25 turn	teach button		potentiometer	potentiometer, numerical +/-	pot. num. + teach	LCD display	Temperature	PVC sheath: - 25 to + 60°C	
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	M / ☉			P / ☉			P / ☉ using selector/setting knob		spiroid metal tube: - 25 to + 120°C	
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25 to + 60 / IP65			0 to + 60	0 to + 60 / IP65	0 to + 60 / IP65 & IP67	0 to + 60 / IP40		flexible stainless steel: - 25 to + 200°C	
Dimensions (mm) L x H	(see columns C and D below)			30 x 80	13 x 60	30 x 80	45 x 100	with straight end fitting (5)		

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector (1)	M8 connector	M8 connector	Screw terminals	M8 connector (1)	M8 connector (1)	Screw terminals	2 x M8 connectors	flexible stnls. steel	XUYFVERTD61	XUYFVPTD61	
Type of output	3-wire PNP/NPN programmable NO / NC			Output relay, 1 C/O	3-wire PNP/NPN programmable NO / NC		Output relay, 1 C/O	PNP (3) or analog	(4) Other lengths available (1 m, 1.5 m, 2 m), consult factory			
Dimensions (mm) 3 choices of depth B (2)								Nmbr. Analog	(5) Other end fittings (side, elongated, pliable), consult factory			
Transmitter / Receiver				30 x 80	13 x 60	13 x 60	30 x 80	45 x 100	Note: Glass fibers are not suitable for use with amplifier XUYAF400A			
	XUYF953002COS	2 40 40 60 14	XUYFANEP40002	2 42 32 57 14	XUYFALNEP40002	2 42 41 57 14	–	XUYAFVCO966S (glass fiber)	XUYAFVCO946S (glass fiber)	XUYAFV954R (glass fiber)	XUYAFCLARY4ANSP	4 1
	XUYF954002COS	2 40 37 60 14	XUYFANEP40005	5 42 35 57 14	XUYFALNEP40005	5 42 44 57 14					XUYAFCLARY3ANSP	3 1
	XUYF954015COS	15 40 50 60 27	XUYFANEP40015	15 42 45 57 27	XUYFALNEP40015	15 42 54 57 27					XUYAFCLARY2ANSP	2 1
	XUYF954030COS	30 40 65 60 42	XUYFANEP40030	30 42 60 57 42	XUYFALNEP40030	30 42 69 57 42					XUYAFCLARY4STSP	4 0
	XUYF954050COS	50 57 85 77 40	XUYFANEP40050	50 42 80 57 40	XUYFALNEP40050	50 42 89 57 40	XUYAF400A (plastic fiber)	XUYAFPCO966S (plastic fiber)	XUYAFPCO946S (plastic fiber)	XUYAFP954R (plastic fiber)	XUYAFCLARY3STSP	3 0
	XUYF954080COS	80 57 115 77 70	XUYFANEP40080	80 42 110 57 70	XUYFALNEP40080	80 42 119 57 70					XUYAFCLARY2STSP	2 0
	XUYF954120COS	120 57 155 77 110	XUYFANEP40120	120 42 150 57 110	XUYFALNEP40120	120 42 159 57 110						
Supply voltage limits, min/max (V) including ripple	10 - 30		10 - 30		10 - 30		115/230 V AC	10 - 30	10 - 30	20 - 250 V AC/DC	10 - 30	
Switching capacity, max (mA) / Switching frequency (Hz)	100/500 Hz (10 kHz for XUYF953002COS)			100/10 kHz	100/10 kHz		3A/250 V / 25 Hz	100/1 kHz	100/1 kHz time delay	3A / 25 Hz time delay	100/1.1 kHz	
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉			★ / ☉	★ / ☉		–	★ / ☉	★ / ☉	– / ☉	★ / ☉	

Plastic fiber optics Length = 2 m	
see the complete XUFN offer on page 7	
Plastic fiber optics for use with end fittings	
Ø 1 mm fiber	L = 20 mm
End fitting (single)	sensing dist. 70 mm
End fittings (pair)	sensing dist. 200 mm
	sensing dist. 800 mm
	sensing dist. 4 m

XUFZ920
XUYA110
XUYA210
XUYA211
XUYA213

(1) For pre-cabled (L = 2 m) version, delete CO from the reference. Ex: XUYF953002COS becomes XUYF953002S

(2) For B = 59 mm, replace the first number 4 in the reference by 6

For B = 95 mm, replace the first number 4 in the reference by 10

Ex: for B = 59 mm: XUYFANEP40002 becomes XUYFANEP60002

(3) For NPN version, replace the last letter of the reference (P) by N

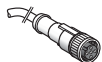
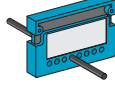
(2) For B = 59 mm, replace the first number 4 in the reference by 6 For B = 95 mm, replace the first number 4 in the reference by 10 Ex: for B = 59 mm: XUYFANEP40002 becomes XUYFANEP60002				letter of the reference (P) by N					
 Sensors with plastic fiber optics				 Miniature series sensors					
	Light sensor	Color sensor, 1 or 4 colors	Contrast sensor	Polarised reflex 50 x 50 reflector included	Thru-beam	Background suppression	Background suppress- ion with 2 channels	Background suppression, LASER	Diffuse with sensing face on side
Usable sensing distance	dpg. on fiber & end fitting	2 - 60 mm	18 mm	1 - 1.5 m	4 m	15 - 80 mm	50 - 600 mm	50 - 300 mm	adjustable - 450 mm
Mounting (mm)	DIN rail	51 x 115	DIN rail	2 x Ø 3 holes / centers 9.5	3 x Ø 3 holes / centers 9.5	2 x Ø 3 holes / centers 14.5	2 x Ø 4 holes / centers 54	2 x Ø 4 holes / centers 54	DIN rail
Sensitivity adjustment	potentiometer, numerical +/-	teach button	teach button	potentiometer	potentiometer	potentiometer	potentiometer	potentiometer	using + / - buttons
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	P / ☉	P / ☉	P / ☉	P / ☉	P / ☉	P / ☉	P / ☉	P / ☉	P / ☉
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0 to + 60 / IP65	0 to + 40 / IP65	0 to + 40 / IP65	0 to + 50 / IP65 & IP67	0 to + 50 / IP65 & IP67	0 to + 50 / IP65 & IP67	-25 to + 60 / IP67	0 to + 50 / IP65	0 to + 60 / IP65
Dimensions (mm) L x H	13 x 60	61 x 125	13 x 60	10 x 40	10 x 40	20 x 32	18 x 60	18 x 60	30 x 78

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector	2 x M12 connectors (included)	M8 connector	M8 connector (6)	M8 connector (6)	M8 connector (6)	M8 connector (6)	M8 connector	M8 connector (6)
Type of output	PNP	NO function	–	–	XUYBCO989SP	XUYRCO989SP (receiver)	XUYPSCO989SP	–	–
	NPN	NO function	–	–	XUYBCO989SN	XUYRCO989SN (receiver)	XUYPSCO989SN	–	–
	PNP/NPN	Programmable NO / NC	XUYAFLCO966S	XUYLC2001 (1 color)	–	–	–	XUYPS2CO945S	XUYPS1LCO965S
			XUYLC2004 (4 colors)	–	–	XUYECO989 (transmitter)	–	–	–
Supply voltage limits, min/max (V) including ripple	10 - 30	22 - 26	10 - 30	10 - 30					
Switching capacity, max (mA) / Switching frequency (Hz)	100 / 5	100 / 500	100 / 20k	100 / 500	100 / 500	100 / 500	100 / 370	100 / 5k	100 / 1k
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉	★ / ☉	★ / ☉	★ / ☉					
Suitable plastic fiber optics, to be ordered separately	Usable Ø 1 mm	Sensing distance							
	L = 10 m XUFZ910	18 mm L = 0.6 m XUYFPCF61	L = 0.6 m XUYFPDC61						
	L = 20 m XUFZ920	60 mm L = 0.6 m XUYFPCP61	L = 1 m XUYFPDC101						
	L = 50 m XUYA00550	18 mm L = 1 m XUYFPCF101	L = 0.6 m / M8 XUYFPDCM861						
		60 mm L = 1 m XUYFPCP101	L = 1 m / M8 XUYFPDCM8101						

(6) For pre-cabled (L = 2 m) version, delete CO from the reference. Ex: XUYPSCO989SP becomes XUYPS989SP

Accessories

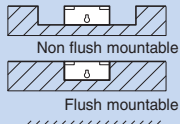
Suitable female pre-wired plug-in connectors				For plastic fiber optics			
2 m		M8 straight XSZCS141	M12 straight XSZCD101Y		M8 90° XSZCS151	M12 90° XSZCD111Y	 XUFZ11

Fiber trimmer (for trimming fibers to length)

Osiprox™

Inductive proximity sensors
Universal

Osiprox



Osiconcept®
Offering simplicity through innovation

A single product that automatically adapts to all installation environments.

Accurate position detection using teach mode.



	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80	M12	M18	M30	M8	M12	M18	M30
Nominal sensing distance Sn	15 mm	25 mm	60 mm	5 mm	9 mm	18 mm	2.5 mm	4 mm	8 mm	15 mm
Usable sensing distance S (mm) flush mountable / non flush mountable	0 - 8 / 0 - 12	0 - 12 / 0 - 20	0 - 32 / 0 - 48	0 - 2.7 / 0 - 4	0 - 4.8 / 0 - 7.2	0 - 8.8 / 0 - 14.4	0 - 2	0 - 3.2	0 - 6.4	0 - 12
Fine adjustment zone (mm) flush mountable / non flush mountable	5 - 10 / 5 - 15	8 - 15 / 8 - 25	20 - 40 / 20 - 60	1.7 - 3.4 / 1.7 - 5	3 - 6 / 3 - 9	6 - 11 / 6 - 18	–	–	–	–
Suitability for flush mounting (metal environment)	flush mountable or non flush mountable via Osiconcept teach mode				flush or non flush mountable via Osiconcept teach mode		flush mountable	flush mountable	flush mountable	flush mountable
Case M (metal) P (plastic)	P	P	P	P	M	M	M	M	M	M
Temperature range (°C)	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70
Degree of protection (conforming to IEC 60529)	pre-cabled: IP68 (with connector: IP67)				IP67		IP67	pre-cabled: IP68 (with connector: IP67)		

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)									
Dimensions (mm) Ø x L or W x H x D			26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M12 x 54	M18 x 67	M30 x 71	M8 x 50	M12 x 50	M18 x 60	M30 x 60
3-wire	PNP	NO function	XS8E1A1PAL2	XS8C1A1PAL2	XS8D1A1PAL2	–	–	–	XS608B1PAL2	XS612B1PAL2	XS618B1PAL2	XS630B1PAL2
		NC function	XS8E1A1PBL2	XS8C1A1PBL2	XS8D1A1PBL2	–	–	–	XS608B1PBL2	XS612B1PBL2	XS618B1PBL2	XS630B1PBL2
	NPN	NO function	XS8E1A1NAL2	XS8C1A1NAL2	XS8D1A1NAL2	–	–	–	XS608B1NAL2	XS612B1NAL2	XS618B1NAL2	XS630B1NAL2
		NC function	XS8E1A1NBL2	XS8C1A1NBL2	XS8D1A1NBL2	–	–	–	XS608B1NBL2	XS612B1NBL2	XS618B1NBL2	XS630B1NBL2
Connection			M8 connector (1)		M12 connector							
3-wire	PNP	NO function	XS8E1A1PAM8	XS8C1A1PAM8	XS8D1A1PAM12	XS612B2PAL01M12 (2)	XS618B2PAL01M12 (2)	XS630B2PAL01M12 (2)	XS608B1PAM12	XS612B1PAM12	XS618B1PAM12	XS630B1PAM12
		NC function	XS8E1A1PBM8	XS8C1A1PBM8	XS8D1A1PBM12	XS612B2PBL01M12 (2)	XS618B2PBL01M12 (2)	XS630B2PBL01M12 (2)	XS608B1PBM12	XS612B1PBM12	XS618B1PBM12	XS630B1PBM12
	NPN	NO function	XS8E1A1NAM8	XS8C1A1NAM8	XS8D1A1NAM12	XS612B2NAL01M12 (2)	XS618B2NAL01M12 (2)	XS630B2NAL01M12 (2)	XS608B1NAM12	XS612B1NAM12	XS618B1NAM12	XS630B1NAM12
		NC function	XS8E1A1NBM8	XS8C1A1NBM8	XS8D1A1NBM12	XS612B2NBL01M12 (2)	XS618B2NBL01M12 (2)	XS630B2NBL01M12 (2)	XS608B1NBM12	XS612B1NBM12	XS618B1NBM12	XS630B1NBM12
Supply voltage limits, min/max (V) including ripple			10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 58	10 - 58	10 - 58	10 - 58
Switching capacity, max (mA)			100	200	200	100	100	100	200	200	200	200
Overload and short-circuit protection (★)			★	★	★	★	★	★	★	★	★	★
LED output state indicator (⊗) and power on LED (⊗)			⊗ / ⊗	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗	⊗ / –	⊗ / –	⊗ / –	⊗ / –
Voltage drop, closed state (V) at I nominal			2	2	2	2	2	2	2	2	2	2
Switching frequency (Hz)			2000	1000	150	1000	1000	1000	2500	2500	1000	500

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Pre-cabled, PvR (2 m)									
Dimensions (mm) Ø x L or W x H x D			26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	–	–	–	–	M12 x 50	M18 x 60	M30 x 60
2-wire	AC/DC	NO function	XS8E1A1MAL2	XS8C1A1MAL2	XS8D1A1MAL2	–	–	–	–	XS612B1MAL2	XS618B1MAL2	XS630B1MAL2
		not short-circuit protected (3)	NC function	XS8E1A1MBL2	XS8C1A1MBL2	XS8D1A1MBL2	–	–	–	–	XS612B1MBL2	XS618B1MBL2
Connection			1/2" 20 UNF connector									
2-wire	AC/DC	NO function	XS8E1A1MAL01U20	XS8C1A1MAL01U20	XS8D1A1MAU20	–	–	–	–	XS612B1MAU20	XS618B1MAU20	XS630B1MAU20
		not short-circuit protected (3)	NC function	XS8E1A1MBL01U20	XS8C1A1MBL01U20	XS8D1A1MBU20	–	–	–	–	XS612B1MBU20	XS618B1MBU20
Supply voltage limits, min/max (V) including ripple			20 - 264	20 - 264	20 - 264	–	–	–	–	20 - 264	20 - 264	20 - 264
Switching capacity, max (mA)			200 AC or DC	300 AC / 200 DC	300 AC / 200 DC	–	–	–	–	200	300 AC / 200 DC	300 AC / 200 DC
LED output state indicator (⊗) / power on LED (⊗)			⊗ / ⊗	⊗ / ⊗	⊗ / ⊗	–	–	–	–	⊗ / –	⊗ / –	⊗ / –
Residual current, open state (mA)			1.5	1.5	1.5	–	–	–	–	1.5	1.5	1.5
Voltage drop, closed state (V) at I nominal			5.5	5.5	5.5	–	–	–	–	5.5	5.5	5.5
Switching frequency (Hz)			2000	1000	150	–	–	–	–	25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 500 DC

(1) Also available with M12 connector on 152 mm (6") pigtail. Substitute M12 for M8 in part number

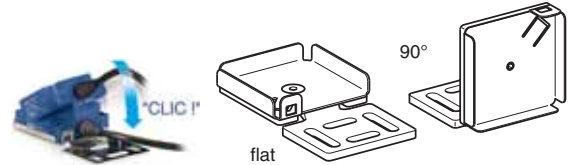
(2) Flying lead (L = 0.15 m) with end mounted remote control incorporating M12 connector

(3) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load

Accessories

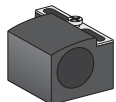
Fixing

For flat sensors, forms E, C and D



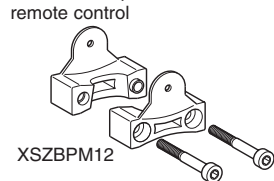
	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	–	–	XSZBD10

Fixing clamp with indexing pin for
cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

For Osiconcept XS6
remote control



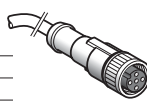
Suitable female plug-in connectors, including pre-wired versions

length 2 m without LED	pre-wired, 90°
M8	XSZCS151
M12	XSZCD111Y
U20	XSZCK101Y



pre-wired,
straight

XSZCS141
XSZCD101Y
XSZCK111Y



For other versions, please consult with your local Schneider Electric/

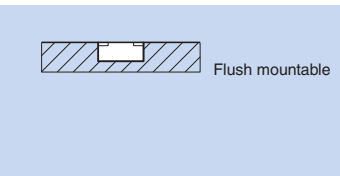
Square D sales office: visit www.us.telemecanique.com



For other versions, please consult with your local Schneider Electric/

Square D sales office: visit www.us.telemecanique.com





	Form J 8 x 22	Form F 15 x 32	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80	M8	M12	M18	M30
Nominal sensing distance Sn	2.5 mm	5 mm	10 mm	15 mm	40 mm	1.5 mm	2 mm	5 mm	10 mm
Operating zone (mm)	0 - 2	0 - 4	0 - 8	0 - 12	0 - 32	0 - 1.2	0 - 1.6	0 - 4	0 - 8
Suitability for flush mounting (metal environment)	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable
Case M (metal) P (plastic)	P	P	P	P	P	M	M	M	M
Temperature range (°C)	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70
Degree of protection (conforming to IEC 60529)	pre-cabled: IP68 (with connector: IP67)				pre-cabled: IP68 (with connector: IP67)	IP67	pre-cabled: IP68 (with connector: IP67)		

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)									
Dimensions (mm) Ø x L or W x H x D			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15		80 x 80 x 26	M8 x 33	M12 x 33	M18 x 36.5	M30 x 40.6
3-wire	PNP	NO function	XS7J1A1PAL2	XS7F1A1PAL2	XS7E1A1PAL2	XS7C1A1PAL2		XS7D1A1PAL2	XS508B1PAL2	XS512B1PAL2	XS518B1PAL2	XS530B1PAL2
		NC function	XS7J1A1PBL2	XS7F1A1PBL2	XS7E1A1PBL2	XS7C1A1PBL2		XS7D1A1PBL2	XS508B1PBL2	XS512B1PBL2	XS518B1PBL2	XS530B1PBL2
	NPN	NO function	XS7J1A1NAL2	XS7F1A1NAL2	XS7E1A1NAL2	XS7C1A1NAL2		XS7D1A1NAL2	XS508B1NAL2	XS512B1NAL2	XS518B1NAL2	XS530B1NAL2
		NC function	XS7J1A1NBL2	XS7F1A1NBL2	XS7E1A1NBL2	XS7C1A1NBL2		XS7D1A1NBL2	XS508B1NBL2	XS512B1NBL2	XS518B1NBL2	XS530B1NBL2
Connection			M8 connector					M12 connector	M8 connector	M12 connector		
3-wire	PNP	NO function	XS7J1A1PAL01M8 (1)	XS7F1A1PAL01M8 (1)	XS7E1A1PAM8	XS7C1A1PAM8		XS7D1A1PAM12	XS508B1PAM8	XS512B1PAM12	XS518B1PAM12	XS530B1PAM12
		NC function	XS7J1A1PBL01M8 (1)	XS7F1A1PBL01M8 (1)	XS7E1A1PBM8	XS7C1A1PBM8		XS7D1A1PBM12	XS508B1PBM8	XS512B1PBM12	XS518B1PBM12	XS530B1PBM12
	NPN	NO function	XS7J1A1NAL01M8 (1)	XS7F1A1NAL01M8 (1)	XS7E1A1NAM8	XS7C1A1NAM8		XS7D1A1NAM12	XS508B1NAM8	XS512B1NAM12	XS518B1NAM12	XS530B1NAM12
		NC function	XS7J1A1NBL01M8 (1)	XS7F1A1NBL01M8 (1)	XS7E1A1NBM8	XS7C1A1NBM8		XS7D1A1NBM12	XS508B1NBM8	XS512B1NBM12	XS518B1NBM12	XS530B1NBM12
Supply voltage limits, min/max (V) including ripple			10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 36
Switching capacity, max (mA)			100	100	100	100	100	200	200	200	200	200
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal			2	2	2	2	2	2	2	2	2	2
Switching frequency (Hz)			2000	2000	1000	1000	100	5000	5000	2000	1000	1000

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)									
Dimensions (mm) Ø x L or W x H x D			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M8 x 50	M12 x 50	M18 x 52.5	M30 x 50	
2-wire	non polarized	NO function	XS7J1A1DAL2	XS7F1A1DAL2	XS7E1A1DAL2	XS7C1A1DAL2	XS7D1A1DAL2	XS508B1DAL2	XS512B1DAL2	XS518B1DAL2	XS530B1DAL2	
		NC function	XS7J1A1DBL2	XS7F1A1DBL2	XS7E1A1DBL2	XS7C1A1DBL2	XS7D1A1DBL2	XS508B1DBL2	XS512B1DBL2	XS518B1DBL2	XS530B1DBL2	
Connection			M8 connector				M12 connector					
2-wire	non polarized	NO function	XS7J1A1DAL01M8 (1)	XS7F1A1DAL01M8 (1)	XS7E1A1DAM8	XS7C1A1DAM8	XS7D1A1DAM12	XS508B1DAM12	XS512B1DAM12	XS518B1DAM12	XS530B1DAM12	
		NC function	XS7J1A1DBL01M8 (1)	XS7F1A1DBL01M8 (1)	XS7E1A1DBM8	XS7C1A1DBM8	XS7D1A1DBM12	XS508B1DBM12	XS512B1DBM12	XS518B1DBM12	XS530B1DBM12	
Supply voltage limits, min/max (V) including ripple			10 - 36	10 - 36	10 - 36	10 - 36	10 - 36	10 - 58	10 - 58	10 - 58	10 - 58	
Switching capacity, max (mA)			100	100	100	100	100	100	100	100	100	
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	
Residual current, open state (mA)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Voltage drop, closed state (V) at I nominal			4	4	4	4	4	4	4	4	4	
Switching frequency (Hz)			4000	5000	1000	1000	100	4000	4000	3000	2000	

(1) Flying lead (L = 0.15 m) with M8 end connector

Accessories

Fixing

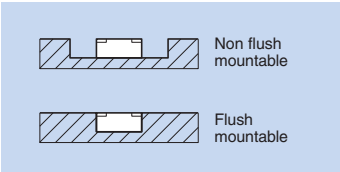
For flat sensors, forms E, C and D

	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	—	—	XSZBD10

Fixing clamp with indexing pin for
cylindrical sensors

M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors, including pre-wired versions			
length 2 m without LED	pre-wired, 90°		pre-wired, straight
M8 (or S)	XSZCS151		XSZCS141
M12 (or D)	XSZCD111Y		XSZCD101Y
U20 (or K)	XSZCK101Y		XSZCK111Y



	M8	M12	M18	M30	Ø 4	M5	Ø 6.5	Form C			
Nominal sensing distance Sn	2.5 mm	4 mm	8 mm	15 mm	1 mm	1 mm	1.5 mm	15 mm	20 mm increased sensing dist.	20 mm	40 mm increased sensing dist.
Operating zone (mm)	0 - 2	0 - 3.2	0 - 6.4	0 - 12	0 - 0.8	0 - 0.8	0 - 1.2	0 - 12	0 - 16	0 - 16	0 - 32
Suitability for flush mounting (metal environment)	non flush mountable				flush mountable			flush mountable		non flush mountable	
Case M (metal) P (plastic)	P				M			P			
Temperature range (°C)	- 25 to + 70				- 25 to + 70			- 25 to + 70			
Degree of protection (conforming to IEC 60529)	IP67	pre-cabled: IP68 (with connector: IP67)			IP67			IP67			

Sensors for DC applications

Connection				Pre-cabled, PvR (2 m)				Pre-cabled, PvR (2 m)			Screw terminals (3)			
Dimensions (mm) Ø x L or W x H x D				M8 x 33	M12 x 33	M18 x 33.5	M30 x 40.5	Ø 4 x 29	M5 x 29	M6.5 x 33	40 x 40 x 117			
2-wire (non polarized)		NO or NC	programmable	–	–	–	–	–	–	–	XS7C40DP210	–	XS8C40DP210	–
4-wire	PNP	NO + NC	complementary outputs	–	–	–	–	–	–	–	XS7C40PC440	XS7C40PC449	XS8C40PC440	XS8C40PC449
	NPN	NO + NC	complementary outputs	–	–	–	–	–	–	–	XS7C40NC440	XS7C40NC449	XS8C40NC440	XS8C40NC449
3-wire	PNP	NO function	XS4P08PA340	XS4P12PA340	XS4P18PA340	XS4P30PA340	XS1L04PA310	XS1N05PA310	XS1L06PA340	–	–	–	–	
		NC function	XS4P08PB340	XS4P12PB340	XS4P18PB340	XS4P30PB340	–	–	–	–	–	–	–	
	NPN	NO function	XS4P08NA340	XS4P12NA340	XS4P18NA340	XS4P30NA340	XS1L04NA310	XS1N05NA310	XS1L06NA340	–	–	–	–	
		NC function	XS4P08NB340	XS4P12NB340	XS4P18NB340	XS4P30NB340	–	–	–	–	–	–	–	
Connection				M8 connector	M12 connector			M8 connector						
3-wire	PNP	NO function	XS4P08PA340S	XS4P12PA340D	XS4P18PA340D	XS4P30PA340D	XS1L04PA310S	XS1N05PA311S (2)	XS1L06PA340S	–	–	–	–	
		NC function	XS4P08PB340S	XS4P12PB340D	XS4P18PB340D	XS4P30PB340D	–	–	–	–	–	–	–	
	NPN	NO function	XS4P08NA340S	XS4P12NA340D	XS4P18NA340D	XS4P30NA340D	XS1L04NA310S	XS1N05NA311S (2)	XS1L06NA340S	–	–	–	–	
		NC function	XS4P08NB340S	XS4P12NB340D	XS4P18NB340D	XS4P30NB340D	–	–	–	–	–	–	–	
Supply voltage limits, min/max (V) including ripple				10 - 38	10 - 38	10 - 38	10 - 38	5 - 30	5 - 30	10 - 38	12 - 48			
Switching capacity, max (mA)				200	200	200	200	100	100	200	4-wire version = 200 – 2-wire version = 1.5 - 100			
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)				★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	4-wire version = ★ / ⊗ / ⊗ – 2-wire version = ★ / ⊗ / –			
Voltage drop, closed state (V) at I nominal				2	2	2	2	2	2	2	4-wire version = 2 – 2-wire version = 4			
Switching frequency (Hz)				5000	5000	2000	1000	5000	5000	2500	2-wire = 1500 / 4-wire = 1000 2-wire = 800 / 4-wire = 1000 (20 mm) 500 (40 mm)			

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Pre-cabled, PvR (2 m)								Screw terminals (3)			
Dimensions (mm) Ø x L or W x D x H				M8 x 50	M12 x 50	M18 x 60	M30 x 60	–	–	–	40 x 40 x 117			
2-wire	AC/DC	NO function	XS4P08MA230	XS4P12MA230	XS4P18MA230	XS4P30MA230	–	–	–	–	–	–	–	
		NC function	XS4P08MB230	XS4P12MB230	XS4P18MB230	XS4P30MB230	–	–	–	–	–	–	–	
	not short-circuit protected (1)	AC	NO or NC programmable	–	–	–	–	–	–	–	XS7C40FP260	–	XS8C40FP260	–
		AC/DC	NO or NC programmable	–	–	–	–	–	–	–	XS7C40MP230	–	XS8C40MP230	–
Connection			U20 connector											
2-wire	AC/DC	NO function	XS4P08MA230K	XS4P12MA230K	XS4P18MA230K	XS4P30MA230K	–	–	–	–	–	–	–	
		NC function	XS4P08MB230K	XS4P12MB230K	XS4P18MB230K	XS4P30MB230K	–	–	–	–	–	–	–	
not short-circuit protected (1)							–	–	–	–	–	–	–	
Supply voltage limits, min/max (V) including ripple			20 - 264	20 - 264	20 - 264	20 - 264	–	–	–	20 - 264				
Switching capacity, max (mA)			100	200	300 AC / 200 DC	300 AC / 200 DC	–	–	–	AC version = 500 – AC/DC version = 300 / 200				
LED output state indicator (⊗)			⊗	⊗	⊗	⊗	–	–	–	⊗				
Residual current, open state (mA)			0.6	0.6	0.6	0.6	–	–	–	AC version = 1.5 – AC/DC version = 0.8 / 1.5				
Voltage drop, closed state (V) at I nominal			5.5	5.5	5.5	5.5	–	–	–	5.5				
Switching frequency (Hz)			25 AC / 3000 DC	25 AC / 3000 DC	25 AC / 2000 DC	25 AC / 1000 DC	–	–	–	25 AC / 50 DC				

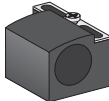
(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load

(2) Stainless steel sensors, Sn = 0.8 mm

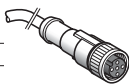
(3) Sensors supplied without cable gland. Suitable cable gland: 13P

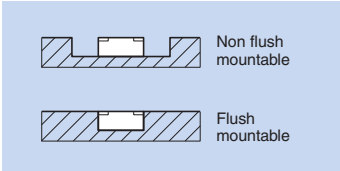
Accessories

Fixing clamps			
Fixing clamp with indexing pin for cylindrical sensors	M4	XSZB104	M12 XSZB112
	M5	XSZB105	M18 XSZB118
	M6.5	XSZB165	M30 XSZB130
	M8	XSZB108	



Suitable female plug-in connectors, including pre-wired versions			
length 2 m without LED	pre-wired, 90°		pre-wired, straight
M8 (or S)	XSZCS114		XSZCD104
M12 (or D)	XSZCD114Y		XSZCD104Y
U20 (or K)	XSZCK111Y		XSZCK101Y





Inductive proximity sensors - Application

Rotation control

Ferrous/non-ferrous with fixed sensing distance

Analog (Position control)



	Form E 26 x 26	Form C 40 x 40	M30	M18	M30	Form F 8 x 32	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80	M12	M18	M30
Nominal sensing distance Sn	10 mm	15 mm	10 mm	5 mm	10 mm	5 mm	10 mm	15 mm	40 mm	M: 2 mm / P: 4 mm	M: 5 mm / P: 8 mm	M: 10 mm / P: 15 mm
Operating zone (mm)	0 - 8	0 - 12	0 - 8	0 - 4	0 - 8	1 - 4	1 - 10	2 - 15	5 - 40	M: 0.2 - 2 / P: 0.4 - 4	M: 0.5 - 5 / P: 0.8 - 8	M: 1 - 10 / P: 1.5 - 15
Suitability for flush mounting (metal environment)	flush mountable			flush mountable		flush mountable	flush mountable	flush mountable	flush mountable	flush / non flush mountable	flush / non flush mountable	flush / non flush mountable
Case M (metal) P (plastic)	P	P	M	M	M	P	P	P	P	M or P	M or P	M or P
Temperature range (°C)	- 25 to + 70			0 to + 50		- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70	- 25 to + 70
Degree of protection (conforming to IEC 60529)	IP67			pre-cabled: IP68 (with connector: IP67)		pre-cabled: IP68 (with connector: IP67)				IP67		
Dimensions (mm) Ø x L or W x H x D	26 x 26 x 13	40 x 40 x 15	M30 x 81	M18 x 70	M30 x 60	15 x 8 x 32	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	Ø 12 x 50	Ø 18 x 50	Ø 30 x 52.5
Maximum speed of passing object (impulses/min)	48000	48000	6000 - 48000 (1)	–	–	–	–	–	–	–	–	–
Adjustable frequency range (impulses/min)	60 - 6000	60 - 6000	6 - 150 / 120 - 3000 (1)	–	–	–	–	–	–	–	–	–

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)																		
4-wire	PNP/NPN NO/NC		programmable	–	–	–	XS1M18KPM40	XS1M30KPM40	–	–	–	–	–	–	–						
3-wire	PNP	NC function	slow version	–	–	XSAV11373	–	–	–	–	–	–	–	–	–						
			fast version	–	–	XSAV12373	–	–	–	–	–	–	–	–							
	0 - 10 V output		plastic	–	–	–	–	–	XS9F111A1L2	XS9E111A1L2	XS9C111A1L2	XS9D111A1L2	XS4P12AB110	XS4P18AB110	XS4P30AB110						
	4 - 20 mA output		metal, flush mountable	–	–	–	–	–	–	–	–	–	XS1M12AB120	XS1M18AB120	XS1M30AB120						
			plastic, flush mountable	–	–	–	–	–	–	XS9F111A2L2	XS9E111A2L2	XS9C111A2L2	XS9D111A2L2	–	–	–					
			plastic, non flush mountable	–	–	–	–	–	–	–	–	–	XS4P12AB120	XS4P18AB120	XS4P30AB120						
Connection			M8 or M12 connector					Flying lead (L = 0.8 m) with M12 connector	M8 or M12 connector												
4-wire	PNP/NPN NO/NC		programmable	–	–	–	XS1M18KPM40D	XS1M30KPM40LD	–	–	–	–	–	–	–						
3-wire	PNP	NC function		XS9E11RPBL01M12 (3)	XS9C11RPBL01M12 (3)	–	–	–	–	–	–	–	–	–	–						
			0 - 10 V output		–	–	–	–	–	XS9F111A1L01M8 (4)	XS9E111A1L01M12 (4)	XS9C111A1L01M12 (4)	XS9D111A1M12	–	–	–					
			4 - 20 mA output		–	–	–	–	–	XS9F111A2L01M8 (4)	XS9E111A2L01M12 (4)	XS9C111A2L01M12 (4)	XS9D111A2M12	–	–	–					
Supply voltage limits, min/max (V) including ripple			10 - 36	10 - 36	10 - 58	10 - 38	10 - 36									10 - 36	10 - 36	10 - 36	10 - 38	10 - 38	10 - 38
Switching capacity, max (mA)			200	200	200	200	–									–	–	–	–	–	–
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)			(⊗)	★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / –	★ / ⊗ / –	–									–	–	–	–	–
Linearity error			–	–	–	–	± 1 V for 0 - 10 V version / ± 2 mA for 4 - 20 mA version														
Voltage drop, closed state (V) at I nominal			2	2	2	2.6	–									–	–	–	–	–	
Switching frequency (Hz)			–	–	–	1000	–									–	–	–	–	–	
Operating frequency (Hz)			–	–	–	–	2000									1000	1000	100	1500	500	300

Multi-current/multi-voltage sensors for AC/DC applications

Connection				Pre-cabled, PvR (2 m)		
2-wire	AC/DC	NC function		XS9E11RMBL01U20 (5)	XS9C11RMBL01U20 (5)	–
not short-circuit protected (2)	NC function	slow version		–	–	XSAV11801
			fast version	–	–	XSAV12801
Supply voltage limits, min/max (V) 50–60 Hz			20 - 264	20 - 264	20 - 264	
Switching capacity, max (mA)			200	300 AC / 200 DC	350 AC / 200 DC	
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / ⊗	⊗ / ⊗	⊗ / –	
Residual current, open state (mA)			1.5	1.5	1.5	
Voltage drop, closed state (V) at I nominal			5.5	5.5	5.7	
Switching frequency (Hz)			–	–	–	

- (1) 6 - 150 and 6000 impulses/min for XSAV11373 and XSAV11801 (slow version); 120 - 3000 and 48000 impulses/min for XSAV12373 and XSAV12801 (fast version)
- (2) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load
- (3) Flying lead (L = 0.15 m) with end mounted remote control incorporating M12 connector
- (4) Flying lead (L = 0.15 m) with end connector
- (5) Flying lead (L = 0.15 m) with end mounted remote control incorporating 1/2–20 UNF connector

Accessories

Fixing

For flat sensors, forms E, C and D

	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	–	–	XSZBD10

M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors, including pre-wired versions

length 2 m without LED	pre-wired, 90°	pre-wired, straight
M8	XSZCS114	XSZCD104
M12 (or D)	XSZCD114Y	XSZCD104Y
U20	XSZCK111Y	XSZCK101Y



		M8	M12	M18	M30		M8	M12	M18	M30	M12	M18	M30	
Nominal sensing distance Sn	flush mountable	2.5 mm	4 mm	10 mm	20 mm		1.5 mm	2 mm	5 mm	10 mm	2 mm	5 mm	10 mm	
	non flush mountable	–	–	–	–		2.5 mm	4 mm	8 mm	15 mm	4 mm	8 mm	15 mm	
Operating zone (mm)	flush mountable	0 - 2	0 - 3.2	0 - 8	0 - 16		0 - 1.2	0 - 1.6	0 - 4	0 - 8	0 - 1.6	0 - 4	0 - 8	
	non flush mountable	–	–	–	–		0 - 2	0 - 3.2	0 - 6.4	0 - 12	0 - 3.2	0 - 6.4	0 - 12	
Suitability for flush mounting (metal environment)		Flush mountable					Flush mountable or non flush mountable depending on model				Flush mountable or non flush mountable depending on model			
Case M (metal) P (plastic)		M					M				M or P depending on model			
Temperature range (°C)		- 25 to + 50					- 25 to + 80		- 25 to + 70		- 25 to + 70			
Degree of protection (conforming to IEC 60529)		IP67		IP68 (with connector: IP67)			IP67		IP68 (with connector: IP67)		IP68 (with connector: IP67)			
Dimensions (mm) Ø x L		M8 x 33		M12 x 33	M18 x 33.5	M30 x 40.6	M8 x 50		M12 x 33	M18 x 36.5	M30 x 40.5	M12 x 50	M18 x 60	M30 x 60

Sensors for DC applications

Connection				Pre-cabled, PvR (2 m)				Pre-cabled, PvR (2 m)				Pre-cabled, PvR (2 m)		
3-wire	PNP	NO function		XS1N08PA349	XS1N12PA349	XS1N18PA349	XS1N30PA349	–	–	–	–	–	–	–
		NC function		XS1N08PB349	XS1N12PB349	XS1N18PB349	XS1N30PB349	–	–	–	–	–	–	
	NPN	NO function		XS1N08NA349	XS1N12NA349	XS1N18NA349	XS1N30NA349	–	–	–	–	–	–	
		NC function		XS1N08NB349	XS1N12NB349	XS1N18NB349	XS1N30NB349	–	–	–	–	–	–	
4-wire	PNP	NO + NC	flush mountable	–	–	–	–	XS1M08PC410	XS1N12PC410	XS1N18PC410	XS1N30PC410	–	–	–
			non flush mountable	–	–	–	–	XS2M08PC410	XS2N12PC410	XS2N18PC410	XS2N30PC410	–	–	–
	NPN	NO + NC	flush mountable	–	–	–	–	XS1NM08NC410	XS1N12NC410	XS1N18NC410	XS1N30NC410	–	–	–
			non flush mountable	–	–	–	–	XS2M08NC410	XS2N12NC410	XS2N18NC410	XS2N30NC410	–	–	–
	PNP+NPN	NO/NC programmable	flush mountable (metal)	–	–	–	–	–	–	–	–	XS1M12KP340	XS1M18KP340	XS1M30KP340
			non flush mountable (metal)	–	–	–	–	–	–	–	–	XS2M12KP340	XS2M18KP340	XS2M30KP340
			non flush mountable (plastic)	–	–	–	–	–	–	–	–	XS4P12KP340	XS4P18KP340	XS4P30KP340
Connection				M8 connector		M12 connector		M12 connector				M12 connector		
3-wire	PNP	NO function		XS1N08PA349S (1)	XS1N12PA349D	XS1N18PA349D	XS1N30PA349D	–	–	–	–	–	–	–
		NC function		XS1N08PB349S (1)	XS1N12PB349D	XS1N18PB349D	XS1N30PB349D	–	–	–	–	–	–	
	NPN	NO function		XS1N08NA349S (1)	XS1N12NA349D	XS1N18NA349D	XS1N30NA349D	–	–	–	–	–	–	
		NC function		XS1N08NB349S (1)	XS1N12NB349D	XS1N18NB349D	XS1N30NB349D	–	–	–	–	–	–	
4-wire	PNP	NO + NC	flush mountable	–	–	–	–	XS1M08PC410D	XS1N12PC410D	XS1N18PC410D	XS1N30PC410D	–	–	–
			non flush mountable	–	–	–	–	XS2M08PC410D	XS2N12PC410D	XS2N18PC410D	XS2N30PC410D	–	–	–
	NPN	NO + NC	flush mountable	–	–	–	–	XS1M08NC410D	XS1N12NC410D	XS1N18NC410D	XS1N30NC410D	–	–	–
			non flush mountable	–	–	–	–	XS2M08NC410D	XS2N12NC410D	XS2N18NC410D	XS2N30NC410D	–	–	–
	PNP+NPN	NO/NC programmable	flush mountable (metal)	–	–	–	–	–	–	–	–	XS1M12KP340D	XS1M18KP340D	XS1M30KP340D
			non flush mountable (metal)	–	–	–	–	–	–	–	–	XS2M12KP340D	XS2M18KP340D	XS2M30KP340D
			non flush mountable (plastic)	–	–	–	–	–	–	–	–	XS4P12KP340D	XS4P18KP340D	XS4P30KP340D
Supply voltage limits, min/max (V) including ripple				10 - 38				10 - 38				10 - 38		
Switching capacity, max (mA)				200				200				200		
Short-circuit protection (★) / LED output state indicator (⊗)				★ / –				★ / ⊗				★ / –		
Voltage drop, closed state (V) at I nominal				2.6				2				2.6		
Switching frequency (Hz)				2500	2500	1000	500	5000	5000	2000	1000	5000	2000	1000

(1) For versions with M12 connector, replace “S” with “D”. Example: XS1N08PA349S becomes XS1N08PA349D

Accessories

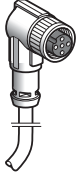
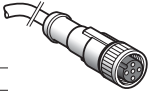
Fixing clamps

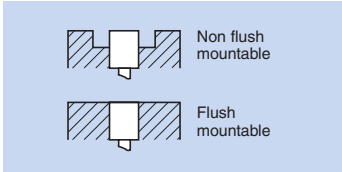
Fixing clamp with indexing pin for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Suitable female plug-in connectors, including pre-wired versions

length 2 m without LED	pre-wired, 90°		pre-wired, straight	
M8 (or S)	XSZCS151		XSZCS141	
M12 (or D)	XSZCD114		XSZCD104Y	



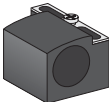
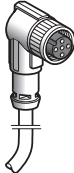
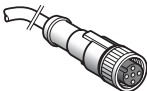
		M12	M18	M30
Nominal sensing distance Sn	flush mountable	2 mm	5 mm	10 mm
	non flush mountable	4 mm	8 mm	15 mm
Operating zone (mm)	flush mountable	0 - 1.6	0 - 4	0 - 8
	non flush mountable	0 - 3.2	0 - 6.4	0 - 12
Suitability for flush mounting (metal environment)		Flush mountable or non flush mountable depending on model		
Case M (metal) P (plastic)		M		
Temperature range (°C)		- 25 to + 70		
Degree of protection (conforming to IEC 60529)		IP68 (with connector: IP67)		
Dimensions (mm) Ø x L		M12 x 50	M18 x 60	M30 x 60

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Pre-cabled, PvR (2 m)		
2-wire AC/DC	NO function	flush mountable	XS1M12MA250	XS1M18MA250	XS1M30MA250
		non flush mountable	XS2M12MA250	XS2M18MA250	XS2M30MA250
	NC function	flush mountable	XS1M12MB250	XS1M18MB250	XS1M30MB250
		non flush mountable	XS2M12MB250	XS2M18MB250	XS2M30MB250
Connection			1/2" 20 Micro style AC		
2-wire AC/DC	NO function	flush mountable	XS1M12MA250K	XS1M18MA250K	XS1M30MA250K
		non flush mountable	XS2M12MA250K	XS2M18MA250K	XS2M30MA250K
	NC function	flush mountable	XS1M12MB250K	XS1M18MB250K	XS1M30MB250K
		non flush mountable	XS2M12MB250K	XS2M18MB250K	XS2M30MB250K
Supply voltage limits, min/max (VAC) 50-60 Hz including ripple			20 - 264		
Switching capacity, max (mA)			200		
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / ⊗		
Residual current, open state (mA)			1.5		
Voltage drop, closed state (V) at I nominal			5.5		
Switching frequency (Hz)			25 AC, 4000 DC		
			25 AC, 2000 DC		25 AC, 2000 DC (1)

(1) 25 AC, 1000 DC for non flush mountable Ø 30 mm

Accessories

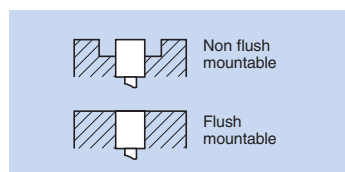
Fixing clamps		Suitable female plug-in connectors, including pre-wired versions		
Fixing clamp with indexing pin for cylindrical sensors		length 2 m without LED	pre-wired, 90°	pre-wired, straight
	M12	XSZB112		
	M18	XSZB118		
	M30	XSZB130		
		U20 (or K)	XSZCK101Y	XSZCK111Y

Capacity proximity sensors

Detection of insulating materials (flush mountable) or conductive materials (non flush materials)

Osiprox

1



	Suitability for flush mtg. (metal environment)	M12	M18	M30	Ø 32	40 x 40
Nominal sensing distance Sn	flush mountable	2.0 mm	5 mm	10 mm	15 mm	15 mm
	non flush mountable	–	8 mm	15 mm	20 mm	–
Operating zone (mm)	flush mountable	0 - 1.44	0 - 3.6	0 - 7.2	0 - 10.8	0 - 10.8
	non flush mountable	–	0 - 5.8	0 - 10.8	0 - 14.4	–
Case M (metal) P (plastic)	flush mountable	M	M	M	M	P
	non flush mountable	–	P	P	P	–
Temperature range (°C)		- 25 to + 70				
Degree of protection (conforming to IEC 60529)		IP67			IP63	IP67
Dimensions (mm) Ø x L		M12 x 60	M18 x 60	M30 x 60	M32 x 80	40 x 40 x 117

Sensors for DC applications

Connection				Pre-cabled, PVC (2 m)				
3-wire	PNP	NO function	flush mountable	XT1M12PA372	XT1M18PA372	XT1M30PA372	–	–
			non flush mountable	–	XT4P18PA372	XT4P30PA372	–	–
		NC function	flush mountable	XT1M12PB372	XT1M18PB372	XT1M30PB372	–	–
			non flush mountable	–	–	–	–	–
	NPN	NO function	flush mountable	XT1M12NA372	XT1M18NA372	XT1M30NA372	–	–
			non flush mountable	–	XT4P18NA372	XT4P30NA372	–	–
Connection				Screw terminals				
3-wire	PNP	NO + NC functions	flush mountable	–	–	–	–	XT7C40PC440
	NPN	NO + NC functions	flush mountable	–	–	–	–	XT7C40NC440
Supply voltage limits, min/max (V) including ripple				10 - 38				10 - 38
Switching capacity, max (mA)				300				200
Short circuit-protection (★) / LED output state indicator (⊗)				★ / ⊗				★ / ⊗
Voltage drop, closed state (V) at I nominal				2				2
Switching frequency (Hz)				100				100

Multi-current / multi-voltage for AC applications

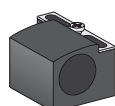
Connection			Pre-cabled, PVC (2 m)				
2-wire AC not short-circuit protected (1)	NO function	flush mountable	–	XT1M18FA262	XT1M30FA262	XT1L32FA262	–
		non flush mountable	–	XT4P18FA262	XT4P30FA262	XT4L32FA262	–
	NC function	flush mountable	–	XT1M18FB262	XT1M30FB262	XT1L32FB262	–
		non flush mountable	–	–	XT4P30FB262	XT4L32FB262	–
Connection			Screw terminals				
2-wire AC	NO or NC programmable flush mountable		–	–	–	–	XT7C40FP262
Supply voltage limits, min/max (V) 50-60 Hz			20 - 264	20 - 264	90 - 250	20 - 264	
Switching capacity, max (mA)			–	300	300	250	350
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / –				
Residual current, open state (mA)			–	1.5 @ 120 V	1.5 @ 120 V	7	1.5 @ 120 V
Voltage drop, closed state (V) at I nominal			–	5.5	5.5	9	5.5
Switching frequency (Hz)			–	25	25	10	25

(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load

Accessories

Fixing clamps

Fixing clamp with indexing pin for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
Ø 32	XSZB32

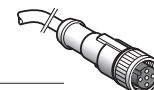
Suitable female plug-in connectors, including pre-wired versions

length 2 m
without LED

pre-wired,
90°



pre-wired,
straight



M8	XSZCS151
M12	XSZCD114Y

XSZCS141
XSZCD104Y

Virtu™ Series

Ultrasonic Sensors
Dual Mount & 18 mm



Model Number*					
Characteristic					
Housing Style		18 mm Barrel Style (1)		Dual Mount Style	
Housing Material		PBT		VALOX®	
Supply Voltage		12-24 VDC		12-24 VDC	
Range	Window	Cable	Quick Disconnect	Cable	Quick Disconnect
508 mm	Teachable				
NPN Sinking		NO	VM18-NNQ-Q	VM1-NNQ	VM1-NNQ-Q
		NC	VM18-NNC-Q	VM1-NNC	VM1-NNC-Q
PNP SOURCING		NO	VM18-PNQ-Q	VM1-PNQ	VM1-PNQ-Q
		NC	VM18-PNC-Q	VM1-PNC	VM1-PNC-Q

(*) All possible sensor configurations are not listed here
(1) VM18 are not available in cable style

PB100 In-line accessory pushbutton for teaching window limits (for Virtu™ series sensors)



Virtu™ Analog



Model Number*					
Characteristic					
Housing Style		18 mm Barrel Style (1)		Dual Mount Style	
Housing Material		PBT		VALOX®	
Supply Voltage		15-24 VDC		15-24 VDC	
Range	Window	Cable	Quick Disconnect	Cable	Quick Disconnect
508 mm	Teachable				
Voltage					
	Auto Slope		VM18-VA-Q	VM1-VA	VM1-VA-Q
	Inverse Slope		VM18-VI-Q	VM1-VI	VM1-VI-Q
	Direct Slope		VM18-VD-Q	VM1-VD	VM1-VD-Q
Current					
	Auto Slope		VM18-CA-Q	VM1-CA	VM1-CA-Q
	inverse Slope		VM18-CI-Q	VM1-CI	VM1-CI-Q
	Direct Slope		VM18-CD-Q	VM1-CD	VM1-CD-Q

(*) All possible sensor configurations are not listed here
(1) VM18 are not available in cable style

Accessories					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2m	XSCD111Y	M12 connector	2 m
PB100 In-line accessory push-button for teaching window limits (for Virtu™ series sensors)					

Ultrasonic Sensors Dual Mount & 18 mm

SM300 Series

1



12 mm ULTEM®



Flat-profile ULTEM®

Model Number*						
Characteristics						
Housing Style/Material			12 mm ULTEM®	Flat-profile ULTEM®	12 mm ULTEM®	Flat-profile ULTEM®
Supply Voltage			12-24 VDC	12-24 VDC	12-24 VDC	12-24 VDC
Connection Type			3 m Cable		M12 Connector	
Range	Window					
50.8 mm	44.5 mm					
		NO	SM300A-228-00	SM300A-228-00FP	SM350A-228-00	SM350A-228-00FP M8
						SM380A-228-00FP M12
		NC	SM300A-228-10	SM300A-228-10FP	SM350A-228-10	SM350A-228-10FP M8
101.6 mm	25.4 mm					
		NO	SM300A-416-00			SM350A-416-00FP M8
101.6 mm	95.3 mm					
		NO	SM300A-460-00	SM300A-460-00FP		SM330A-460-00FP M8 (1)
						SM340A-460-00FP M8 (2)
						SM350A-460-00FP M8
						SM380A-228-00FP M12
		NC	SM300A-460-10			SM350A-460-10FP M8

(1) PNP output only – 3 pin

(2) NPN output only – 3 pin

(*) All possible sensor configurations are not listed here

SM302 Dual-level Sensing



12 mm ULTEM®



Flat-profile ULTEM®

Model Number*						
Characteristics						
Housing Style/Material			12 mm ULTEM®	Flat-profile ULTEM®	12 mm ULTEM®	Flat-profile ULTEM®
Supply Voltage			12-24 VDC	12-24 VDC	12-24 VDC	12-24 VDC
Connection Type			3 m Cable		M12 Connector	
Range	Window					
50.8 mm	19.05					
		Pump-in	SM302A-212-10	SM302-212-10FP	SM382A-212-10	SM382-212-10FP M12
		Pump-out	SM302A-212-00	SM302A-212-00FP	SM382A-212-00	SM382A-212-00FP M12
72.6 mm	25.4 mm					
		Pump-in	SM302A-316-10	SM302-316-10FP	SM352A-316-10	SM352-316-10FP M8
		Pump-out	SM302A-316-00	SM302A-316-00FP	SM352A-316-00	SM352A-316-00FP M8
101.6 mm	25.4 mm					
		Pump-in	SM302A-416-10	SM302-416-10FP	SM382A-416-10	SM382-416-10FP M12
		Pump-out	SM302A-416-00	SM302A-416-00FP	SM382A-416-00	SM382A-416-00FP M12
101.6 mm	50.8 mm					
		Pump-in	SM302A-432-10	SM302-432-10FP	SM352A-432-10	SM352-432-10FP M8
		Pump-out	SM302A-432-00	SM302A-432-00FP	SM352A-432-00	SM352A-432-00FP M8

(*) All possible sensor configurations are not listed here

Accessories for SM300 and SM302 series

Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
XSCS101	M8 connector	2 m	XSCS111	M8 connector	2 m

Additional cable lengths are available

SM600 Series

Ultrasonic Sensors 18 mm & Flat-profile



18 mm ULTEM®



18 mm Stainless



Flat-profile ULTEM®

Model Number*

Characteristics

Housing Style/Material		18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®	18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®	
Connection Type		3 m Cable			M12 Connector			
Supply Voltage		12-24 VDC			12-24 VDC			
Range	Window							
51 mm	1.6 mm							
	NO	SM600A-201-00	SM600A-201-00S	SM600A-201-00FP	SM650A-201-00	SM650A-201-00S	SM650A-201-00FP	
		NC	SM600A-201-10	SM600A-201-10S	SM600A-201-10FP	SM650A-201-10	SM650A-201-10S	SM650A-201-10FP
	13 mm							
		NO	SM600A-208-00	SM600A-208-00S	SM600A-208-00FP	SM650A-208-00	SM650A-208-00S	SM650A-208-00FP
	NC	SM600A-208-10	SM600A-208-10S	SM600A-208-10FP	SM650A-208-10	SM650A-208-10S	SM650A-208-10FP	
	19 mm							
		NO	SM600A-212-00	SM600A-212-00S	SM600A-212-00FP	SM650A-212-00	SM650A-212-00S	SM650A-212-00FP
	NC	SM600A-212-10	SM600A-212-10S	SM600A-212-10FP	SM650A-212-10	SM650A-212-10S	SM650A-212-10FP	
	25 mm							
		NO	SM600A-216-00	SM600A-216-00S	SM600A-216-00FP	SM650A-216-00	SM650A-216-00S	SM650A-216-00FP
	NC	SM600A-216-10	SM600A-216-10S	SM600A-216-10FP	SM650A-216-10	SM650A-216-10S	SM650A-216-10FP	
	77 mm	1.6 mm						
		NO	SM600A-301-00	SM600A-301-00S	SM600A-301-00FP	SM650A-301-00	SM650A-301-00S	SM650A-301-00FP
			NC	SM600A-301-10	SM600A-301-10S	SM600A-301-10FP	SM650A-301-10	SM650A-301-10S
		13 mm						
			NO	SM600A-308-00	SM600A-308-00S	SM600A-308-00FP	SM650A-308-00	SM650A-308-00S
NC		SM600A-308-10	SM600A-308-10S	SM600A-308-10FP	SM650A-308-10	SM650A-308-10S	SM650A-308-10FP	
19 mm								
		NO	SM600A-312-00	SM600A-312-00S	SM600A-312-00FP	SM650A-312-00	SM650A-312-00S	SM650A-312-00FP
NC		SM600A-312-10	SM600A-312-10S	SM600A-312-10FP	SM650A-312-10	SM650A-312-10S	SM650A-312-10FP	
25 mm								
		NO	SM600A-316-00	SM600A-316-00S	SM600A-316-00FP	SM650A-316-00	SM650A-316-00S	SM650A-316-00FP
NC		SM600A-316-10	SM600A-316-10S	SM600A-316-10FP	SM650A-316-10	SM650A-316-10S	SM650A-316-10FP	
51 mm								
		NO	SM600A-332-00	SM600A-332-00S	SM600A-332-00FP	SM650A-332-00	SM650A-332-00S	SM650A-332-00FP
NC		SM600A-332-10	SM600A-332-10S	SM600A-332-10FP	SM650A-332-10	SM650A-332-10S	SM650A-332-10FP	
102 mm		1.6 mm						
		NO	SM600A-401-00	SM600A-401-00S	SM600A-401-00FP	SM650A-401-00	SM650A-401-00S	SM650A-401-00FP
	NC		SM600A-401-10	SM600A-401-10S	SM600A-401-10FP	SM650A-401-10	SM650A-401-10S	SM650A-401-10FP
	13 mm							
		NO	SM600A-408-00	SM600A-408-00S	SM600A-408-00FP	SM650A-408-00	SM650A-408-00S	SM650A-408-00FP
	NC	SM600A-408-10	SM600A-408-10S	SM600A-408-10FP	SM650A-408-10	SM650A-408-10S	SM650A-408-10FP	
	19 mm							
		NO	SM600A-412-00	SM600A-412-00S	SM600A-412-00FP	SM650A-412-00	SM650A-412-00S	SM650A-412-00FP
	NC	SM600A-412-10	SM600A-412-10S	SM600A-412-10FP	SM650A-412-10	SM650A-412-10S	SM650A-412-10FP	
	25 mm							
		NO	SM600A-416-00	SM600A-416-00S	SM600A-416-00FP	SM650A-416-00	SM650A-416-00S	SM650A-416-00FP
	NC	SM600A-416-10	SM600A-416-10S	SM600A-416-10FP	SM650A-416-10	SM650A-416-10S	SM650A-416-10FP	
	51 mm							
		NO	SM600A-432-00	SM600A-432-00S	SM600A-432-00FP	SM650A-432-00	SM650A-432-00S	SM650A-432-00FP
	NC	SM600A-432-10	SM600A-432-10S	SM600A-432-10FP	SM650A-432-10	SM650A-432-10S	SM650A-432-10FP	
	77 mm							
		NO	SM600A-448-00	SM600A-448-00S	SM600A-448-00FP	SM650A-448-00	SM650A-448-00S	SM650A-448-00FP
NC	SM600A-448-10	SM600A-448-10S	SM600A-448-10FP	SM650A-448-10	SM650A-448-10S	SM650A-448-10FP		

(*) All possible sensor configurations are not listed here

Accessories for SM600 series

Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

Ultrasonic Sensors SM600 Series

18 mm & Flat-profile (continued)

1



18 mm ULTEM®



18 mm Stainless



Flat-profile ULTEM®

Model Number*									
Characteristics									
Housing Style/Material		18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®	18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®		
Connection Type		3 m (10') Cable			M12 Connector				
Supply Voltage		12-24 VDC			12-24 VDC				
Range	Window								
127 mm	1.6 mm								
		NO	SM600A-501-00	SM600A-501-00S	SM600A-501-00FP	SM650A-501-00	SM650A-501-00S	SM650A-501-00FP	
		NC	SM600A-501-10	SM600A-501-10S	SM600A-501-10FP	SM650A-501-10	SM650A-501-10S	SM650A-501-10FP	
	13 mm								
		NO	SM600A-508-00	SM600A-508-00S	SM600A-508-00FP	SM650A-508-00	SM650A-508-00S	SM650A-508-00FP	
	NC	SM600A-508-10	SM600A-508-10S	SM600A-508-10FP	SM650A-508-10	SM650A-508-10S	SM650A-508-10FP		
	19 mm								
		NO	SM600A-512-00	SM600A-512-00S	SM600A-512-00FP	SM650A-512-00	SM650A-512-00S	SM650A-512-00FP	
	NC	SM600A-512-10	SM600A-512-10S	SM600A-512-10FP	SM650A-512-10	SM650A-512-10S	SM650A-512-10FP		
	25 mm								
		NO	SM600A-516-00	SM600A-516-00S	SM600A-516-00FP	SM650A-516-00	SM650A-516-00S	SM650A-516-00FP	
	NC	SM600A-516-10	SM600A-516-10S	SM600A-516-10FP	SM650A-516-10	SM650A-516-10S	SM650A-516-10FP		
	51 mm								
		NO	SM600A-532-00	SM600A-532-00S	SM600A-532-00FP	SM650A-532-00	SM650A-532-00S	SM650A-532-00FP	
	NC	SM600A-532-10	SM600A-532-10S	SM600A-532-10FP	SM650A-532-10	SM650A-532-10S	SM650A-532-10FP		
	77 mm								
		NO	SM600A-548-00	SM600A-548-00S	SM600A-548-00FP	SM650A-548-00	SM650A-548-00S	SM650A-548-00FP	
	NC	SM600A-548-10	SM600A-548-10S	SM600A-548-10FP	SM650A-548-10	SM650A-548-10S	SM650A-548-10FP		
	152 mm	1.6 mm							
			NO	SM600A-601-00	SM600A-601-00S	SM600A-601-00FP	SM650A-601-00	SM650A-601-00S	SM650A-601-00FP
			NC	SM600A-601-10	SM600A-601-10S	SM600A-601-10FP	SM650A-601-10	SM650A-601-10S	SM650A-601-10FP
		13 mm							
			NO	SM600A-608-00	SM600A-608-00S	SM600A-608-00FP	SM650A-608-00	SM650A-608-00S	SM650A-608-00FP
		NC	SM600A-608-10	SM600A-608-10S	SM600A-608-10FP	SM650A-608-10	SM650A-608-10S	SM650A-608-10FP	
		19 mm							
NO			SM600A-612-00	SM600A-612-00S	SM600A-612-00FP	SM650A-612-00	SM650A-612-00S	SM650A-612-00FP	
NC		SM600A-612-10	SM600A-612-10S	SM600A-612-10FP	SM650A-612-10	SM650A-612-10S	SM650A-612-10FP		
25 mm									
		NO	SM600A-616-00	SM600A-616-00S	SM600A-616-00FP	SM650A-616-00	SM650A-616-00S	SM650A-616-00FP	
NC		SM600A-616-10	SM600A-616-10S	SM600A-616-10FP	SM650A-616-10	SM650A-616-10S	SM650A-616-10FP		
51 mm									
		NO	SM600A-632-00	SM600A-632-00S	SM600A-632-00FP	SM650A-632-00	SM650A-632-00S	SM650A-632-00FP	
NC		SM600A-632-10	SM600A-632-10S	SM600A-632-10FP	SM650A-632-10	SM650A-632-10S	SM650A-632-10FP		
77 mm									
		NO	SM600A-648-00	SM600A-648-00S	SM600A-648-00FP	SM650A-648-00	SM650A-648-00S	SM650A-648-00FP	
NC		SM600A-648-10	SM600A-648-10S	SM600A-648-10FP	SM650A-648-10	SM650A-648-10S	SM650A-648-00FP		
127 mm									
		NO	SM600A-680-00	SM600A-680-00S	SM600A-680-00FP	SM650A-680-00	SM650A-680-00S	SM650A-680-00FP	
NC		SM600A-680-10	SM600A-680-10S	SM600A-680-10FP	SM650A-680-10	SM650A-680-10S	SM650A-680-10FP		

(*) All possible sensor configurations are not listed here

Accessories for SM600 series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

SM600 Series

Ultrasonic Sensors

18 mm & Flat-profile (continued)

1

(continued)

Model Number*								
Characteristics								
Housing Style/Material		18 mm ULTEM®		Stainless Steel	Flat-profile ULTEM®	18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®
Connection Type		3 m Cable				Connector		
Supply Voltage		12-24 VDC				12-24 VDC		
Range	Window							
178 mm	1.6 mm	NO	SM600A-701-00	SM600A-701-00S	SM600A-701-00FP	SM650A-701-00	SM650A-701-00S	SM650A-701-00FP
		NC	SM600A-701-10	SM600A-701-10S	SM600A-701-10FP	SM650A-701-10	SM650A-701-10S	SM650A-701-10FP
	13 mm							
		NO	SM600A-708-00	SM600A-708-00S	SM600A-708-00FP	SM650A-708-00	SM650A-708-00S	SM650A-708-00FP
	9 mm	NC	SM600A-708-10	SM600A-708-10S	SM600A-708-10FP	SM650A-708-10	SM650A-708-10S	SM650A-708-10FP
		NO	SM600A-712-00	SM600A-712-00S	SM600A-712-00FP	SM650A-712-00	SM650A-712-00S	SM650A-712-00FP
		NC	SM600A-712-10	SM600A-712-10S	SM600A-712-10FP	SM650A-712-10	SM650A-712-10S	SM650A-712-10FP
	25 mm							
		NO	SM600A-716-00	SM600A-716-00S	SM600A-716-00FP	SM650A-716-00	SM650A-716-00S	SM650A-716-00FP
		NC	SM600A-716-10	SM600A-716-10S	SM600A-716-10FP	SM650A-716-10	SM650A-716-10S	SM650A-716-10FP
	51 mm							
		NO	SM600A-732-00	SM600A-732-00S	SM600A-732-00FP	SM650A-732-00	SM650A-732-00S	SM650A-732-00FP
		NC	SM600A-732-10	SM600A-732-10S	SM600A-732-10FP	SM650A-732-10	SM650A-732-10S	SM650A-732-10FP
	77 mm							
		NO	SM600A-748-00	SM600A-748-00S	SM600A-748-00FP	SM650A-748-00	SM650A-748-00S	SM650A-748-00FP
		NC	SM600A-748-10	SM600A-748-10S	SM600A-748-10FP	SM650A-748-10	SM650A-748-10S	SM650A-748-10FP
	127 mm							
		NO	SM600A-780-00	SM600A-780-00S	SM600A-780-00FP	SM650A-780-00	SM650A-780-00S	SM650A-780-00FP
		NC	SM600A-780-10	SM600A-780-10S	SM600A-780-10FP	SM650A-780-10	SM650A-780-10S	SM650A-780-10FP

(*) All possible sensor configurations are not listed here

Accessories for SM602 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

SM600 Series

SM602 Dual-level

1

Model Number*							
Characteristics							
Housing Style/Material		18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®	18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®
Connection Type		3 m Cable			M12 Connector		
Supply Voltage		12-24 VDC			12-24 VDC		
Near Limit/Alarm	Far Limit/Alarm						
95.3 mm	102 mm						
76.2 mm		Pump-out	SM602A-404-00	SM602A-404-00S	SM602A-404-00FP	SM652A-404-00	SM652A-404-00S
		Pump-in		SM602A-404-10		SM652A-404-10	
	127 mm	Pump-out	SM602A-520-00			SM652A-520-00	
		Pump-in	SM602A-520-10			SM652A-520-10	
	102 mm	Pump-out	SM602A-416-00	SM602A-416-00S	SM602A-416-00FP	SM652A-416-00	SM652A-416-00S
		Pump-in	SM602A-416-10			SM652A-416-10	
	127 mm	Pump-out	SM602A-532-00			SM652A-532-00	
		Pump-in	SM602A-532-10			SM652A-532-10	
	102 mm	Pump-out	SM602A-432-00	SM602A-432-00S	SM602A-432-00FP	SM652A-432-00	SM652A-432-00S
		Pump-in	SM602A-432-10	SM652A-432-10			
76.2 mm	127 mm	Pump-out		SM602A-532-00		SM652A-532-00	
		Pump-in		SM602A-532-10		SM652A-532-10	
102 mm	152 mm						
Dual Alarm Normally Open		SM602A-632-20			SM652A-632-20		

(*) All possible sensor configurations are not listed here

Accessories for SM602 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

1

SM606 Series

Ultrasonic Sensors

Analog

Model Number*							
Characteristics							
Housing Style/Material		18 mm ULTEM®	18 mm Stainless	Flat-profile ULTEM®	18 mm ULTEM®	18 mm Stainless	Flat-profile ULTEM®
Connection Type		3 m Cable			M12 Connector		
Supply Voltage		15-24 VDC			15-24 VDC		
Range	Window						
102 mm	70 mm						
	Inv. 0-10V 2.5ms cycle	SM606A-444-00	SM606A-444-00S	SM606A-444-00FP	SM656A-444-00	SM656A-444-00S	SM656A-444-00FP
	Dir. 0-10 V 2.5 ms cycle	SM606A-444-01	SM606A-444-01S	SM606A-444-01FP	SM656A-444-01	SM656A-444-01S	SM656A-444-01FP
	Inv. 0-10V 1.5 ms cycle	SM606A-444-02	SM606A-444-02S	SM606A-444-02FP	SM656A-444-02	SM656A-444-02S	SM656A-444-02FP
	Inv. 0-10V 2.5 ms cycle(1)	SM606A-444-03	SM606A-444-03S	SM606A-444-03FP	SM656A-444-03	SM656A-444-03S	SM656A-444-03FP
	Dir. 0-10V 1.5 ms cycle	SM606A-444-04	SM606A-444-04S	SM606A-444-04FP	SM656A-444-04	SM656A-444-04S	SM656A-444-04FP
152 mm	117 mm						
	Inv. 0-10V 2.5ms cycle	SM606A-674-00	SM606A-674-00S	SM606A-674-00FP	SM656A-674-00	SM656A-674-00S	SM656A-674-00FP
	Dir. 0-10 V 2.5 ms cycle	SM606A-674-01	SM606A-674-01S	SM606A-674-01FP	SM656A-674-01	SM656A-674-01S	SM656A-674-01FP
	Inv. 0-10V 1.5 ms cycle	SM606A-674-02	SM606A-674-02S	SM606A-674-02FP	SM656A-674-02	SM656A-674-02S	SM656A-674-02FP
	Inv. 0-10V 2.5 ms cycle(1)	SM606A-674-03	SM606A-674-03S	SM606A-674-03FP	SM656A-674-03	SM656A-674-03S	SM656A-674-03FP
	Dir. 0-10V 1.5 ms cycle	SM606A-674-04	SM606A-674-04S	SM606A-674-04FP	SM656A-674-04	SM656A-674-04S	SM656A-674-04FP

(1) Loss of echo on signal hold
(*) All possible sensor configurations are not listed here

SM606S
All the above 0-10 V version sensors are available with a 4-20 mA output in the flat profile housing only.
To order, replace the number "0" in the reference by "1".
Example: For pre-cabled versions: SM606A-444-00FP becomes SM606A-444-10FP.
For connector versions: SM656A-444-00FP becomes SM656A-444-10FP.
Sensing distances: refer to www.SESensors.com

Accessories for SM606 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Other cable lengths are available					

SM607 Small Target Sensing

Model Number*							
Characteristics							
Housing Style/Material		18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®	18 mm ULTEM®	Stainless Steel	Flat-profile ULTEM®
Connection Type		3 m Cable			M12 Connector		
Supply Voltage		12-24 VDC			12-24 VDC		
Range	Window						
38.1 mm	12.7 mm						
	Straight label edge NO	SM607A-A08-01	SM607A-A08-01S	SM607A-A08-01FP	SM657A-A08-01	SM657A-A08-01S	SM657A-A08-01FP
	Circular label edge NO	SM607A-A08-02	SM607A-A08-02S	SM607A-A08-02FP	SM657A-A08-02	SM657A-A08-02	SM657A-A08-02FP
51 mm	3 mm						
		SM607A-202-00	SM607A-202-00S	SM607A-202-00FP	SM657A-202-00	SM657A-202-00S	SM657A-202-00FP
	6 mm						
		SM607A-204-00	SM607A-204-00S	SM607A-204-00FP	SM657A-204-00	SM657A-204-00S	SM657A-204-00FP
	13 mm						
		SM607A-208-00	SM607A-208-00S	SM607A-208-00FP	SM657A-208-00	SM657A-208-00S	SM657A-208-00FP

(*) All possible sensor configurations are not listed here

Accessories for SM607 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

Ultrasonic Sensors

Proximity Sensors

SM900 Series

1



30 mm ULTEM®(1 & 2 m)



30 mm Stainless (1 & 2 m)



30 mm ULTEM®(8 m)

Model Number*					
Characteristics					
Housing Style/Material		30 mm ULTEM®	30 mm Stainless	30 mm ULTEM®	30 mm Stainless
Connection Type		3 m Cable		M12 Connector	
Supply Voltage		12-24 VDC		12-24 VDC	
Sensing Range					
51 mm - 1 m					
	NO NPN & PNP	SM900A-100000	SM900A-100000S	SM950A-100000	SM950A-100000S
	NC NPN & PNP	SM900A-110000	SM900A-110000S	SM950A-110000	SM950A-110000S
	Complementary NPN	SM900A-120000	SM900A-120000S	SM950A-120000	SM950A-120000S
	Complementary PNP	SM900A-130000	SM900A-130000S	SM950A-130000	SM950A-130000S
	Object Proximity	SM900A-100000OB	SM900A-100000OBS	SM950A-100000OB	SM950A-100000OBS
120 mm - 2 m					
	NO NPN & PNP	SM900A-400000	SM900A-400000S	SM950A-400000	SM950A-400000S
	NC NPN & PNP	SM900A-410000	SM900A-410000S	SM950A-410000	SM950A-410000S
	Complementary NPN	SM900A-420000	SM900A-420000S	SM950A-420000	SM950A-420000S
	Object Proximity	SM900A-400000OB	SM900A-400000OBS	SM950A-400000OB	SM950A-400000OBS
120 mm - 1 m					
	NO NPN & PNP Stainless Steel Transducer		SM9000A-700000STS		SM9500A-700000STS
203 mm - 8 m					
	NO NPN & PNP	SM9000A-800000		SM9500A-800000	

(*) All possible sensor configurations are not listed here

Accessories for SM900 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

SM902 Series

Ultrasonic Sensors Dual-level Sensors

1



30 mm ULTEM® (1 & 2 m)



30 mm Stainless (1 & 2 m)



30 mm ULTEM® (8 m)

Model Number*

Model Number*				
Characteristics				
Housing Style/Material	30 mm ULTEM®	30 mm Stainless	30 mm ULTEM®	30 mm Stainless
Connection Type	3 m Cable		M12 Connector	
Supply Voltage	12-24 VDC		12-24 VDC	
Sensing Range				
51 m - 1 m				
Pump-out latch	SM902A-100000	SM902A-100000S	SM952A-100000	SM952A-100000S
w/ Loss of Echo Hold	SM902A-100000LE	SM902A-100000LES	SM952A-100000LE	SM952A-100000LES
Pump-in latch	SM902A-110000	SM902A-110000S	SM952A-110000	SM952A-110000S
w/ Loss of Echo Hold	SM902A-110000LE	SM902A-110000LES	SM952A-110000LE	SM952A-110000LES
Dual Setpoint (NPN)	SM902A-124000	SM902A-124000S	SM952A-124000	SM952A-124000S
Pump-in latch, w/alarm (NPN)	SM902A-144100	SM902A-144100S	SM952A-144100	SM952A-144100S
Pump-in latch w/setpoint (NPN)	SM902A-164000	SM902A-164000S	SM952A-164000	SM952A-164000S
120 mm - 2 m				
Pump-out latch	SM902A-400000	SM902A-400000S	SM952A-400000	SM952A-400000S
w/ Loss of Echo Hold	SM902A-400000LE	SM902A-400000LES	SM952A-400000LE	SM952A-400000LES
Pump-in latch	SM902A-410000	SM902A-410000S	SM952A-410000	SM952A-410000S
w/ Loss of Echo Hold	SM902A-410000LE	SM902A-410000LES	SM952A-410000LE	SM952A-410000LES
Dual Setpoint (NPN)	SM902A-424000	SM902A-424000S	SM952A-424000	SM952A-424000S
Pump-in latch, w/alarm (NPN)	SM902A-444000	SM902A-444000S	SM952A-444000	SM952A-444000S
Pump-out latch, w/alarm (PNP)	SM902A-4560000	SM902A-4560000S	SM952A-4560000	SM956A-4560000
Pump-in latch w/setpoint (NPN)	SM902A-464000	SM902A-464000S	SM952A-464000	SM952A-464000S
120 mm - 1 m				
Pump-out latch Stainless Steel Transducer		SM902A-700000STS		SM952A-700000STS
Pump-in latch Stainless Steel Transducer		SM902A-710000STS		SM952A-710000STS
Dual Setpoint (NPN) Stainless Steel Transducer		SM902A-724000STS		SM952A-724000STS
203 mm - 8 m				
Pump-in latch	SM902A-810000		SM952A-810000	
Dual Setpoint (NPN)	SM902A-824000		SM952A-824000	

(*) All possible sensor configurations are not listed here

Accessories for SM902 Series

Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

Ultrasonic Sensors Analog

SM906 Series

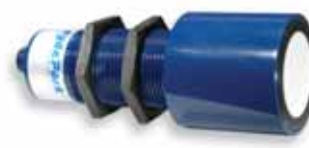
1



30 mm ULTEM® (1 & 2 m)



30 mm Stainless (1 & 2 m)



30 mm ULTEM® (8 m)

Model Number*					
Characteristics					
Housing Style/Material	30 mm ULTEM®		30 mm Stainless		
Connection Type	3 m Cable			M12 Connector	
Supply Voltage	12-24 VDC			12-24 VDC	
Sensing Range					
51 mm - 1 m					
Inverse 0-10V					
Min output state on loss of echo	SM906A-100000	SM906A-100000S	SM956A-100000	SM956A-100000S	
Hold on loss of echo min. power up	SM906A-102000	SM906A-102000S	SM956A-102000	SM956A-102000S	
Hold on loss of echo max. power up	SM906A-103000	SM906A-103000S	SM956A-103000	SM956A-103000S	
Direct 0-10V					
Max output state on loss of echo	SM906A-111000	SM906A-111000S	SM956A-111000	SM956A-111000S	
Inverse 4-20 mA					
Min output state on loss of echo	SM906A-120000	SM906A-120000S	SM956A-120000	SM956A-120000S	
Hold on loss of echo min. power up	SM906A-122000	SM906A-122000S	SM956A-122000	SM956A-122000S	
Direct 4-20 mA					
Hold on loss of echo min. power up	SM906A-132000	SM906A-132000S	SM956A-132000	SM956A-132000S	
120 mm - 2 m					
Inverse 0-10V					
Min output state on loss of echo	SM906A-400000	SM906A-400000S	SM956A-400000	SM956A-400000S	
Hold on loss of echo min. power up	SM906A-402000	SM906A-402000S	SM956A-402000	SM956A-402000S	
Hold on loss of echo max. power up	SM906A-403000	SM906A-403000S	SM956A-403000	SM956A-403000S	
Direct 0-10V					
Max output state on loss of echo	SM906A-411000	SM906A-411000S	SM956A-411000	SM956A-411000S	
Inverse 4-20 mA					
Min output state on loss of echo	SM906A-420000	SM906A-420000S	SM956A-420000	SM956A-420000S	
Hold on loss of echo min. power up	SM906A-422000	SM906A-422000S	SM956A-422000	SM956A-422000S	
Direct 4-20 mA					
Hold on loss of echo min. power up	SM906A-432000	SM906A-432000S	SM956A-432000	SM956A-432000S	
120 mm - 1 m					
Inverse 4-20 mA					
Max output state on loss of echo Stainless Steel Transducer			SM906A-72100STS		SM956A-72100STS
Hold on loss of echo max power up Stainless Steel Transducer			SM906A-723000STS		SM956A-723000STS
203 mm - 8 m					
Inverse 0-10V					
Min output state on loss of echo	SM906A-800000		SM956A-800000		
Inverse 4-20 mA					
Min output state on loss of echo	SM906A-820000		SM956A-820000		
Direct 4-20 mA					
Hold on loss of echo min. power up	SM906A-832000		SM956A-832000		

(*) All possible sensor configurations are not listed here

Accessories for SM900 Series					
Straight	Connection type	Length	90°	Connection type	Length
XSCD101Y	M12 connector	2 m	XSCD111Y	M12 connector	2 m
Additional cable lengths are available					

Osiswitch™

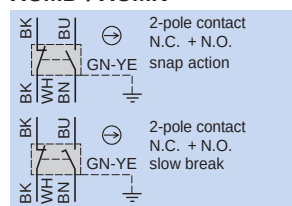
Osiconcept®
Offering simplicity through innovation

Limit switches

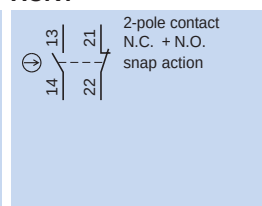
Universal, complete switches

1

XCMD / XCMN



XCKT

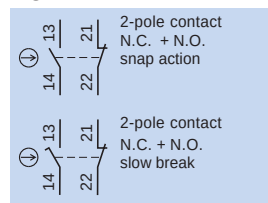


Miniature type XCMD metal, pre-cabled

Type of operator	Metal end plunger	Steel roller plunger	Plastic roller lever	Variable length plastic roller lever	M12 head metal end plunger
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	0.5
Switches conforming to standard IEC 60947-5-1 section 3	⊕	⊕	⊕	⊕	⊕
Degree of protection conforming to IEC 60529	IP66 and IP67				
Rated operational characteristics	AC 15; B 300 (Ue = 240 V, Ie = 1.5 A) / DC 13; R 300 (Ue = 250 V, Ie = 0.1 A)				
Cable entry	Pre-cabled, adjustable direction, length = 1 m (2 m and 5 m lengths available)				
Mounting holes dia. or head mounting dia.	20 mm				20 mm or M12 x 1
Body dimensions W x D x H	30 x 16 x 50 mm				
Complete switch (2-pole N.C. + N.O. snap action)	XCMD2110L1	XCMD2102L1	XCMD2115L1	XCMD2145L1	XCMD21F0L1
(2-pole N.C. + N.O. break before make, slow break)	XCMD2510L1	XCMD2502L1	XCMD2515L1	XCMD2545L1	XCMD25F0L1

⊕ Positive opening operation

XCKP



Compact type XCKD metal and XCKP plastic conforming to standard EN 50047

Type of operator	Metal end plunger	Steel roller plunger	Plastic roller lever, horizontal actuation	M18 head metal end plunger	M18 head steel roller plunger
Actuation speed (in m/s)	0.5	0.5	1	0.5	0.5
Switches conforming to standard IEC 60947-5-1 section 3 					
Degree of protection conforming to IEC 60529	IP66 and IP67				
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry	1 tapped entry for 1/2 in. NPT cable gland				
Mounting holes dia. or head mounting dia.	20 mm	20 mm	20 mm	20mm or M18 x 1	20 mm or M18 x 1
Body dimensions W x D x H	31 x 30 x 65 mm				
Metal switches					
Complete switch (2-pole N.C. + N.O. snap action)	XCKD2110N12	XCKD2102N12	XCKD2121N12	XCKD21H0N12	XCKD21H2N12
(2-pole N.C. + N.O. break before make, slow break)	XCKD2510N12	XCKD2502N12	XCKD2521N12	XCKD25H0N12	XCKD25H2N12
Plastic, double insulated switches					
Complete switch (2-pole N.C. + N.O. snap action)	XCKP2110N12	XCKP2102N12	XCKP2121N12	XCKP21H0N12	XCKP21H2N12
(2-pole N.C. + N.O. break before make, slow break)	XCKP2510N12	XCKP2502N12	XCKP2521N12	XCKP25H0N12	XCKP25H2N12

⊕ Positive opening operation



				Compact XCKT, plastic, 2 cable entries				
M12 head steel roller plunger	Cat whisker			Metal end plunger	Metal roller plunger	Plastic roller lever	Plastic roller lever, horizontal actuation	Cat whisker
0.1	1			0.5	0.5	1.5	1	1
⊕	–			⊕	⊕	⊕	⊕	–
				IP66 and IP67				
				AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
				2 tapped entries for 1/2 in. NPT cable gland				
M12	20 mm			20 or 40 mm				
				58 x 30 x 51 mm				
XCMD21F2L1	XCMD2106L1			XCKT2110N12	XCKT2102N12	XCKT2118N12	XCKT2121N12	XCKT2106N12
XCMD25F2L1	XCMD2506L1			–	–	–	–	–



				XCPR and XCDR with manual reset				
Plastic roller lever	Variable length plastic roller lever	Plastic roller lever Ø 50 mm	Cat whisker	Metal end plunger	Steel roller lever	Plastic roller lever plunger, horizontal actuation	Plastic roller lever plunger, vertical actuation	Plastic roller lever
1.5	1.5	1.5	1	0.5	0.5	1	1	1.5
⊕	⊕	⊕	–	⊕	⊕	⊕	⊕	⊕
				IP66 and IP67				
				AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
				1 tapped entry for 1/2 in. NPT cable gland				
20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
				31 x 30 x 95 mm				
XCKD2118N12	XCKD2145N12	XCKD2139N12	XCKD2106N12	XCDR2110N12	XCDR2102N12	XCDR2121N12	XCDR2127N12	XCDR2118N12
XCKD2518N12	XCKD2545N12	XCKD2539N12	XCKD2506N12	XCDR2510N12	XCDR2502N12	XCDR2521N12	XCDR2527N12	XCDR2518N12
XCKP2118N12	XCKP2145N12	XCKP2139N12	XCKP2106N12	XCPR2110N12	XCPR2102N12	XCPR2121N12	XCPR2127N12	XCPR2118N12
XCKP2518N12	XCKP2545N12	XCKP2539N12	XCKP2506N12	XCPR2510N12	XCPR2502N12	XCPR2521N12	XCPR2527N12	XCPR2518N12

Osiswitch

Osiconcept®
Offering simplicity through innovation

Limit switches For customized assembly of miniature

Heads - common to miniature and compact bodies

Metal plungers and multi-directional heads

Description	Metal end plunger	Metal end plunger with elastomer boot	Steel roller plunger	Retractable steel roller lever plunger	Plastic roller lever, horizontal actuation
					
	ZCE10	ZCE11	ZCE02	ZCE24 (2)	ZCE21

Metal rotary heads and levers

Description	Rotary head without lever, spring return, for actuation from LH or RH side	Plastic roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Plastic roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)
					
	ZCE01	ZCY15 (2)	ZCY16 (2)	ZCY25 (2)	ZCY26 (2)

Bodies, metal

	Miniature					
						
Type of contact	 2-pole N.C. + N.O. Snap action	 3-pole N.C.+N.C.+N.O. Snap action	 2-pole N.C. + N.O. Slow break	 3-pole NC.+NC.+NO Slow break	 2-pole N.C. + N.O. Snap action M12 5-pin connector	 1 single-pole Snap action M12 4-pin connector
	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD21C12	ZCMD21M12

Cable connection for miniature bodies

Specific pre-cabled connection components					Option: pre-wired M12 connector, L = 2 m	
	for ZCMD21	for ZCMD39	for ZCMD25	for ZCMD37	5-pin	4-pin
L1 = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1		
L2 = 2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2		
L3 = 5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	XSZCD1501Y	XSZCD101Y

⊕ Positive opening operation

and compact switches

1

Plastic roller lever, vertical actuation



ZCE27

M12 head metal plunger



ZCEF0 (2)

M18 head metal plunger



ZCEH0 (1)

M12 head steel roller plunger



ZCEF2 (2)

M18 head steel roller plunger



ZCEH2 (1)

Spring lever



ZCE08

Spring lever with plastic tip



ZCE07

Cat whisker



ZCE06

Plastic roller lever, track:
20/36 mm (ZCMD)
24/40 mm (ZCD/P/T)



ZCY18 (1)

Steel roller lever, track:
20/36 mm (ZCMD)
24/40 mm (ZCD/P/T)



ZCY19 (1)

Ceramic roller lever



ZCY22

Variable length plastic roller lever



ZCY45

Round, glass fiber rod lever
Ø 3 mm
L = 125 mm



ZCY55

Metal spring lever



ZCY91

Plastic roller lever
Ø 50 mm



ZCY39

Adjustable plastic roller lever
Ø 50 mm



ZCY49

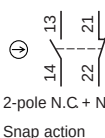
(1) Recommended for use with body: ZCD.../ ZCP.../ ZCT...

(2) Recommended for use with body: ZCMD...

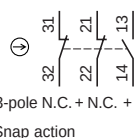
Compact



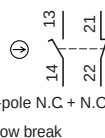
Type of contact



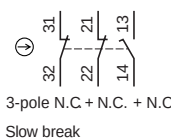
2-pole N.C. + N.O.
Snap action



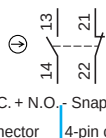
3-pole N.C. + N.C. + N.O.
Snap action



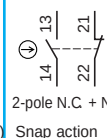
2-pole N.C. + N.O.
Slow break



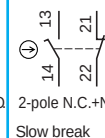
3-pole N.C. + N.C. + N.O.
Slow break



2-pole N.C. + N.O. - Snap action
5-pin connector



2-pole N.C. + N.O.
Snap action



2-pole N.C. + N.O.
Slow break

Metal body

ZCD21

ZCD39

ZCD25

ZCD37

ZCD21M12

—

—

—

Plastic body

ZCP21

ZCP39

ZCP25

ZCP37

—

ZCP21M12

ZCT21N12

ZCT25N12

Connection of compact bodies

Removable cable gland (3)



Option: pre-wired M12 connector,
L = 2 m
5-pin



Description

For ISO M16 cable gland

For ISO M20 cable gland

For Pg 11 cable gland

For Pg 13.5 cable gland

For 1/2" NPT cable gland

For PF 1/2 (G12) cable gland

Metal

ZCDEP16

ZCDEP20

ZCDEG11

ZCDEG13

ZCDEN12

ZCDEF12

Plastic

ZCPEP16

ZCPEP20

ZCPEG11

ZCPEG13

ZCPEN12

ZCPEF12

XSZCD1501Y

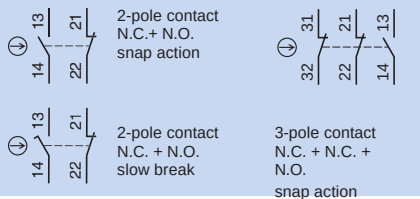
XSZCD101Y

Osiswitch

Limit switches Classic - XCKJ, complete switches

1

XCKJ, XCKM



Type XCKJ metal, fixed body, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Plastic roller lever	Variable length plastic roller lever	Polyamide, Ø 6 mm rod lever L = 200 mm	
Actuation speed (in m/s)	0.5	1	1.5	1.5	1.5	
Degree of protection conforming to IEC 60529	IP66					
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)					
Cable entry (1)	1 tapped entry for 1/2 in. NPT cable gland					
Mounting holes (mm)	30 x 60					
Body dimensions (mm) W x D x H	40 x 44 x 77					
Complete switch	(2-pole N.C. + N.O. snap action)	⊖ XCKJ161	⊖ XCKJ167	⊖ XCKJ10511	XCKJ10541	XCKJ10559
	(2-pole N.C. + N.O. break before make, slow break)	⊖ XCKJ561	⊖ XCKJ567	⊖ XCKJ50511	XCKJ50541	XCKJ50559

Customized assembly of Classic XCKJ switches body/contact sub-assemblies



Type XCKJ metal, body only

Type of contact	2-pole N.C. + N.O. Snap action	2-pole N.C. + N.O. Slow break	3-pole N.C. + N.C. + N.O. Snap action	3-pole N.C. + N.C. + N.O. Slow break	2-pole N.C. + N.O. Snap action
Cable entry	1 tapped entry for ISO M20 X 1.5 cable gland				
Body with contact block	⊖ XCKJ1	⊖ XCKJ5	⊖ XCKJD39	⊖ XCKJD37	⊖ XCKJ1D
Contact block only	⊖ XE2SP2151	⊖ XE2NP2151	⊖ XE3SP2141	⊖ XE3NP2141	⊖ XE2SP2151

Customized assembly of Classic XCKJ switches

Operating heads, complete or for customer assembly

Osiswitch

1



Plunger or multi-directional heads

with reinforced steel roller end plunger with metal end plunger with thermoplastic roller lever plunger, 1 direct. or actuation with steel roller lever plunger, 1 direct. of actuation with steel roller end plunger with steel ball bearing end plunger



Catalog number ↻ ZCKE67 ↻ ZCKE61 ↻ ZCKE21 ↻ ZCKE23 ↻ ZCKE62 ↻ ZCKE66

with metal side plunger with steel roller side plunger with spring rod with Cat whisker



Catalog number ↻ ZCKE63 ↻ ZCKE64 ↻ ZCKE08 ↻ ZCKE06

Separate rotary heads and levers

spring return for actuation from left AND right or left OR right lever with thermoplastic roller (1) lever with steel roller variable length lever with thermoplastic variable length lever with steel roller (1) rod, Ø 6 mm thermoplastic L = 200 mm (1) spring-metal rod lever (2)



Catalog number ↻ ZCKE05 ↻ ZCKY11 ↻ ZCKY13 ↻ ZCKY41 ↻ ZCKY43 ↻ ZCKY59 ↻ ZCKY91

stay put for actuation from left AND right forked arm lever with thermoplastic rollers, 1 track (1) forked arm lever with thermoplastic rollers, 2 track (1)



Catalog number ↻ ZCKE09 ↻ ZCKY71 ↻ ZCKY61

(1) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

Nautilus

1

Sensors for pressure control

Electronic sensors XMLE

Electrical connection by M12 connector

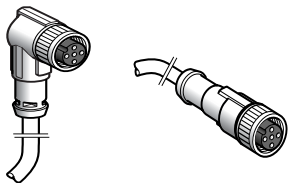


Setting range (psi) (1)		-14.5 to 0	0 to 145	0 to 1450	0 to 3625	0 to 8702
Fluids controlled		Hydraulic oils, air, fresh water, sea water, corrosive fluids from -13 to +176 °C				
Ambient air temperature		-15 to +80 °C				
Degree of protection (conforming to IEC 60529)		IP65				
Voltage limits		24 VDC (17–33 VDC)				
Dimensions (mm) Ø x L		Ø 40 x 90 (not including connector)				
Fluid connection (1)		1/4" NPT male				
Electrical connection (2)		DIN 43650 connector				
Type of output (3)	Transmitter	4–20 mA, 2-wire				
	Pressure switch	PNP or NPN, normally closed (N.C.)				
Analog output 4–20 mA		XMLE010U1C2	XMLE100U1C2	XMLE250U1C2	XMLE600U1C2	
NPN output		XMLE010U1C3	XMLE100U1C3			

- (1) Other fluid connctions, please consult us.
(2) Other types of connection, please consult us.
(3) Other types of output; 0–5 V, 0–10 V, etc., please consult us.

Suitable female plug-in connectors

Pre-wired conectors L = 5 m (without LED)



	elbowed	straight
M12	XZCP1241L5	XZCP1141L5

Other Connectors



screw terminal	Snap-C	DIN 43650A
XZCC12FCM40B	XZCC12FDM40V	XZCC43FCP40B

Sensors for pressure control

Electronic sensors XMLF

Nautilus

1



Setting range (psi) (1)	lower limit (PB) : vacuum switches upper limit (PH) : pressure switches	-1.16 to -14.5	1.16 to 14.5	2.90 to 36	11.6 to 145	46 to 580
Ambient air temperature		-25 to +80 °C				
Degree of protection (conforming to IEC 60529)		IP67				
Voltage limits (V)		24 VDC (17 to 33 VDC)				
Dimensions (mm) H x W x D		113 x 46 x 58				
Fluid connection		1/4" NPT female (2)				
Electrical connection		M12 connector				
Configurable with digital display, connection by M12 connector (3)						
Analog and	4 to 20 mA	XMLFM01D2026	XMLF001D2026	XMLF002D2026	XMLF010D2026	XMLF040D2026
solid-state output 200 mA	0 to 10 V	XMLFM01D2126	XMLF001D2126	XMLF002D2126	XMLF010D2126	XMLF040D2126
Dual stage pressure switches, solid-state output 200 mA		XMLFM01D2036	XMLF001D2036	XMLF002D2036	XMLF010D2036	XMLF040D2036
Analog sensors	4 to 20 mA	XMLFM01D2016	XMLF001D2016	XMLF002D2016	XMLF010D2016	XMLF040D2016
	0 to 10 V	XMLFM01D2116	XMLF001D2116	XMLF002D2116	XMLF010D2116	XMLF040D2116
Permissible differential (psi) (pressure switches)	Min at low setting	0.44	0.44	1.09	4.4	17.4
	Min at high setting	0.44	0.44	1.09	4.4	17.4
	Max at high setting	13.8	13.8	34.5	138	551



Setting range (psi) ⁽¹⁾	upper limit (PH) : pressure switches	116 to 1450	186 to 2320	290 to 3625	464 to 5800	696 to 8700
Ambient air temperature		-25 to +80 °C				
Degree of protection (conforming to IEC 60529)		IP67				
Voltage limits (V)		24 VDC (17 to 33 VDC)				
Dimensions (mm) H x W x D		113 x 46 x 58				
Fluid connection		1/4" NPT female				
Electrical connection		M12 connector				
Configurable with digital display, connection by M12 connector ⁽¹⁾						
Analog and	4 to 20 mA	XMLF100D2026	XMLF160D2026	XMLF250D2026	XMLF400D2026	XMLF600D2026
solid-state output 200 mA	0 to 10 V	XMLF100D2126	XMLF160D2126	XMLF250D2126	XMLF400D2126	XMLF600D2126
Dual stage pressure switches, solid-state output 200 mA		XMLF100D2036	XMLF160D2036	XMLF250D2036	XMLF400D2036	XMLF600D2036
Analog sensors	4 to 20 mA	XMLF100D2016	XMLF160D2016	XMLF250D2016	XMLF400D2016	XMLF600D2016
	0 to 10 V	XMLF100D2116	XMLF160D2116	XMLF250D2116	XMLF400D2116	XMLF600D2116
Permissible differential (psi) (pressure switches)	Min at low setting	44	70	109	174	261
	Min at high setting	44	70	109	174	261
	Max at high setting	1378	2204	3444	5510	8265

(1) Also available in 120 VAC version with 2.5 A relay output and SAE 7/8-16 UN connector.

Operator dialog

A wide range of Human/Machine interfaces to meet your needs!

Harmony

Optimize the creation of your dialog solutions!

Telemecanique, the world leader for control and signalling components, offers you its ranges of: push buttons, switches and pilot lights, beacons and indicator banks (including audible units) and components for hoisting applications.



Unequalled and of high quality, it is the largest offer on the market.

b *Simplicity*: the clip together components ensure simple and secure assembly.

b *Ingenuity*: LED technology for all signalling functions.

b *Flexibility*: of modular construction, the products evolve with the automation system.

b *Robustness*: mechanical performance much higher than standard requirements.

b *Compactness*: the overall dimensions are the smallest on the market.

Magelis®

HMI at the touch of a finger and the blink of an eye.

In order to improve the performance of your production equipment, Telemecanique offers you a complete range of hardware and software specifically for Human/Machine dialogue.



b *Compact*, the range of Magelis display units, terminals and industrial PCs is characterised by its ease of implementation.

b *Ingenious*, the software range simplifies the design of your HMI (Human/Machine Interface) applications.

The new Magelis range, comprising display units, terminals, graphic terminals with keypad or touchscreen and i PC industrial PCs, offers improved robustness for ensuring availability of your installation.



b Take advantage of these new Telemecanique offers that are **open** to the new information and communication technologies.

The essential guide

A selection of the most popular selling products enabling you to quickly locate the most appropriate solution for your application... from push buttons to the industrial PC.

Contents

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XB4, XB5 2/2
- b Common operators, push buttons Ø 30 mm
Class 9001 2/3 to 2/5
- b Compact pilot lights Ø 8, 12 and 17.5 mm
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- b Push buttons, switches and pilot lights Ø 16 mm
with plastic bezel, **XB6** 2/8 to 2/11
- b Push buttons, switches and pilot lights Ø 22 mm
with metal bezel, **XB4** 2/12 to 2/15
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with plastic bezel, **XB5** 2/16 to 2/19
- b Push buttons, switches and pilot lights Ø 30 mm
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To benefit from
perfect
interoperability
select
Telemecanique
software.



- b XBTL1001/L1003
- b Vijeo Designer
- b Vijeo Citect
- b The FactoryCast
HMI Web server



Human/Machine Interfaces

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Harmony®

XB4, XB5

Push buttons, Ø 22 mm

Common operators, complete with contact blocks

2

BLACK start push buttons

Operator Style	XB4 Die Cast Chrome	XB5 Doubled Insulated
		
Contact Block	1 N.O. 	1 N.O. 
Catalog number	XB4BA21	XB5AA21
Legend Plate	ZBY2303	ZBY2303

RED stop push buttons

Operator Style	XB4 Die Cast Chrome	XB5 Double Insulated
		
Contact Block	1 N.C. 	1 N.C. 
Catalog number	XB4BL42	XB5AL42
Legend Plate	ZBY2304	ZBY2304

BLACK Off-On selector switch

Operator Style	XB4 Die Cast Chrome	XB5 Doubled Insulated
		
Contact Block	1 N.O. 	1 N.O. 
Catalog number	XB4BD21	XB5AD21
Legend Plate	ZBY2367	ZBY2367

Hand-Off-Auto selector switch

Operator Style	XB4 Die Cast Chrome	XB5 Double Insulated
		
Contact Block	2 N.O. 	2 N.O. 
Catalog number	XB4BD33	XB5AD33
Legend Plate	ZBY2387	ZBY2387

RED 120 VAC LED On pilot light

Operator Style	XB4 Die Cast Chrome	XB5 Doubled Insulated
		
Light Module	120 VAC Red LED	120 VAC Red LED
Catalog number	XB4BVG4	XB5AVG4
Legend Plate	ZBY2311	ZBY2311

GREEN 120 VAC LED Off pilot light

Operator Style	XB4 Die Cast Chrome	XB5 Double Insulated
		
Light Module	120 VAC Green LED	120 VAC Green LED
Catalog number	XB4BVG3	XB5AVG3
Legend Plate	ZBY2312	ZBY2312

RED 40 mm mushroom emergency stop (push-pull)

Operator Style	XB4 Die Cast Chrome	XB5 Doubled Insulated
		
Contact Block	1 N.C. 	1 N.C. 
Catalog number	XB4BA21	XB5AA21
Legend Plate	ZBY2303	ZBY2303

RED 40 mm mushroom emergency stop (turn-to-release)

Operator Style	XB4 Die Cast Chrome	XB5 Double Insulated
		
Contact Block	1 N.C. 	1 N.C. 
Catalog number	XB4BL42	XB5AL42
Legend Plate	ZBY2304	ZBY2304

Push buttons, Ø 30 mm

Common operators, complete with contact blocks

Harmony
Class 9001
Type K, SK

2

BLACK start push buttons

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Contact Block		

Catalog number	KR1BH13	SKR1BH13

Legend Plate	KN201	KN101SP

RED stop push buttons

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Contact Block		

Catalog number	KR1RH13	SKR1RH13

Legend Plate	KN202	KN102RP

BLACK Off-On selector switch

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Contact Block		

Catalog number	KS11BH13	SKS11BH13

Legend Plate	KN244	KN144P

Black Hand-Off-Auto selector switch

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Contact Block		

Catalog number	KS43BH13	SKS43BH13

Legend Plate	KN260	KN160SP

RED 120 VAC On pilot light

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Catalog number	KP1R31	SKP1R31

Legend Plate	KN203	KN103SP

GREEN 120 VAC Off pilot light

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Catalog number	KP1G31	SKP1G31

Legend Plate	KN204	KN104SP

RED 120 VAC On push-to-test pilot light

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Catalog number	KT1R31	SKT1R31

Legend Plate	KN203	KN103SP

Green 120 VAC Off push-to-test pilot light

Operator Style	30 mm Industrial (metal)	30 mm Corrosion Resistant (Non-Metallic)



Catalog number	KT1G31	SKT1G31

Legend Plate	KN204	KN104RP

Harmony
Class 9001
Type KX

Push buttons, Ø 30 mm
Square multifunction operators

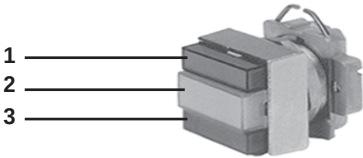
2

Single Illuminated and Non-Illuminated Push Buttons

Description	Button color	Legend marking	Contacts	Catalog number
	Non-Illuminated			
	Green	Start		KXRA101
	Red	Stop		KXRA102
	Green	Start		KXRA133
	Red	Stop		KXRA134
	Red Mushroom	Emergency Stop		KXRN105
	Red Mushroom	Emergency Stop		KXRN135
	Illuminated 110–120 V, 50–60 Hz, Transformer			
	Green	Start		KXRB103
	Red	Stop		KXRB104
	Red Mushroom	Emergency Stop		KXRP106

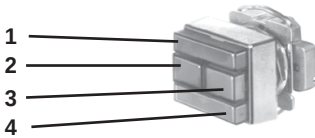
Dual Push Buttons

	Top Button (#1)	Bottom Button (#2)	Contacts	Catalog number
	Start (Green-Mom.)	Stop (Red-Mom.)		KXRC111
	Start (Green-Mom.)	Stop (Red-Mom.)		KXRC136
	Up (Green-Mom.) (1)	Down (Green-Mom.) (1)		KXRD112
	Open (Green-Mom.) (1)	Close (Green-Mom.) (1)		KXRD113
	Forward (Green-Mom.) (1)	Reverse (Green-Mom.) (1)		KXRD114
	Up (Green-Mom.) (1)	Down (Green-Mom.) (1)		KXRD140
	Open (Green-Mom.) (1)	Close (Green-Mom.) (1)		KXRD141
	Forward (Green-Mom.) (1)	Reverse (Green-Mom.) (1)		KXRD142
	Start (Green-Maint.) (1)	Stop (Red-Maint.) (1)		KXRE115
	Reset (Green-Maint.) (1)	Stop (Red-Maint.) (1)		KXRF116



Dual Push Button With One Pilot Light

Description	Top Button (#1)	Middle Lens (#2)	Bottom Button (#3)	Contacts	Catalog number
Pilot Light at 110–120 V, 50–60 Hz, Transformer	Start (Green-Mom.)	On (Red)	Stop (Red-Mom.)		KXRG117
	Start (Green-Mom.)	On (Red)	Stop (Red-Mom.)		KXRG137
	Blank (Green-Mom.)	Blank (Red)	Blank (Green-Mom.)		KXRH118
	Start (Green-Maint.)	On (Red)	Stop (Red-Maint.)		KXRJ119
	Reset (Green-Mom.)	On (Red)	Stop (Red-Maint.)		KXRK120



Dual Push Button With Dual Pilot Lights

Description	Top Button (#1)	Left Lens (#2)	Right Lens (#3)	Bottom Button (#4)	Contacts	Catalog number
Pilot Lights at 110–120 V, 50–60 Hz, Transformer	Start (Green-Mom.)	On (Red)	Off (Green)	Stop (Red-Mom.)		KXRL121
	No. 1 (White-Mom.)	1White	2 Blue	No. 2 (Blue-Mom.)		KXRL132
	Start (Green-Mom.)	On (Red)	Off (Green)	Stop (Red-Mom.)		KXRL138
	Blank (Green-Mom.)	Blank (Red)	Blank (Red)	Blank (Green-Mom.)		KXRM122

Harmony
Class 9001
Type K, SK

2

Selector Switches

Non-Illuminated

Description	Positions	Legend	Knob	Contacts	Catalog number
	2-Maint.	Off-On	Black	1 0 0 1	KXSA125
	2-Maint.	Off-On	Black	0 1	KXSA139
	3-Maint.	Hand-Off-Auto.	Black	1 0 0 0 0 1	KXSD126
	3-Maint.	Hand-Off-Auto.	Black	1 0 0 0 0 1 1 0 0 0 0 1	KXSD127

Illuminated 110–120 V, 50–60 Hz, Transformer

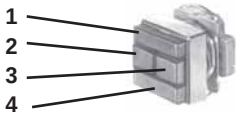
Description	Positions	Legend	Knob	Contacts	Catalog number
	2-Maint.	Off-On	Black	1 0 0 1	KXSJ128
	3-Maint.	Hand-Off-Auto.	Black	1 0 0 0 0 1	KXSM129
	3-Maint.	Hand-Off-Auto.	Black	1 0 0 0 0 1 1 0 0 0 0 1	KXSM130

Single Pilot Light

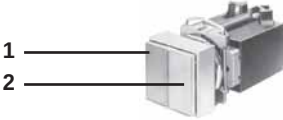
Description	Legend	Lens Color	Legend Marking	Catalog number
	Standard	Red	On	KXPA107
	110–120 V, 50–60 Hz, Transformer	Green	Off	KXPA108
	Push-to-test	Red	On	KXTA109
		Green	Off	KXTA110

Dual Push-to-test Pilot Light

(Pushing Button #1 Tests Pilot Light #2–Pushing Button #4 Tests Pilot Light #3)

Description	Top Button (#1)	Left Lens (#2)	Right Lens (#3)	Bottom Button (#4)	Catalog number
	Pilot Lights at 110–120 V, 50–60 Hz, Transformer	Green	Red	Green	KXTC123
		Blank	Blank	Blank	

Dual Pilot Light

Description	Left Lens (#1)	Right Lens (#2)	Catalog number
	110–120 V, 50–60 Hz, Transformer	Red Green	KXPB124
		On Off	

Four-Field Pilot Light

Description	Top Button (#1)	Left Lens (#2)	Right Lens (#3)	Bottom Button (#4)	Catalog number
	at 110–120 V, 50–60 Hz, Transformer	White Blue	Green Blank	Red Blank	KXPC131
	Remote Test (1) 120 VAC Resistor	White Blank	Green Blank	Red Blank	KXTE150 (1)

(1) If all four lamps are illuminated at the same time continuously–do NOT operate above 120 VAC.

XVL
Type O

Compact pilot lights
Ø 8, 12 and 17.5 mm

2

(1):

Voltage	Number (p)
5 VDC (25 mA)	1
12 VDC (18 mA)	2
24 VDC (18 mA)	3
48 v (10 Ma)	4



LED pilot lights		With black bezel		With integral lens cap	
Type of head		Protuding LED, 8 mm		Covered LED, 8 mm	Covered LED, 12 mm
Degree of protection		IP 40			
Mounting (mm)	panel cut-out	8.2 mm	8.2 mm	8.2 mm	12.2 mm
	mounting centers	12.5 x 12.5 mm	10.5 x 10.5 mm	10.5 x 10.5 mm	16.5 x 16.5 mm
Dimensions (mm)	Depth (below head)	32	34	34	45
Connection		Tags 2.8 x 0.5		Screw clamp connectors	
Catalog Number (1)	green	XVL A1p3 (1)	XVL A2p3 (1)	XVL A3p3 (1)	XVL A3p3 (1)
	red	XVL A1p4 (1)	XVL A2p4 (1)	XVL A3p4 (1)	XVL A3p4 (1)
	yellow	XVL A1p5 (1)	XVL A2p5 (1)	XVL A3p5 (1)	XVL A3p5 (1)
Tightening key		For 8 mm pilot lights		For 12 mm pilot lights	
Catalog Number		XVL X08		XVL X12	

(1) Basic catalog number, to be completed by replacing p with the number 1, 2, 3 or 4 indicating the required voltage. See voltage table above.



9001 Type O Incandescent pilot lights

Degree of protection		NEMA & UL Type 13	
Mounting (mm)	panel cut-out	17.5 mm	
Overall dimensions (mm)		21 x 47	
Connection		5 x 0.5 mm Quick connect	
	Voltage AC/DC	Color	Catalog Number
	12 VAC/DC 170 mA	Red	9001OR12
		Green	9001OG12
		Amber	9001OA12
	24 VAC/DC 73 mA	Red	9001OR24
		Green	9001OG24
		Amber	9001OA24
		Yellow	9001OY24
	120 VAC/DC 25 mA	Red	9001OR120
		Green	9001OG120
		Amber	9001OA120
		Yellow	9001OY120

Harmony

XB6

Push buttons, switches and pilot lights

Ø 16 mm with plastic bezel

Contact functions and light functions with integral LED

(1):

Voltage	Letter (p)
12–24 V AC/DC (15 mA)	B
48–120 V AC (25 mA)	G
230–240 V AC (25 mA)	M



Illuminated push buttons

Type of head			Flush push			
Shape of head			  			
Degree of protection			IP 65 / Nema 4, 4X, 13			
Mounting (mm)			Ø 16.2 ^{+0.2} ₀			
			24 x 18 with rectangular head, 18 x 18 with square or circular head			
Dimensions (mm)			24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head			
Connection (3)			Tags for 2.8 x 0.5 Faston connectors or for soldering			
Type of push			Spring return			
			Complete products		Products for user assembly	
			12 –24 VAC/DC		  	
Catalog number	white	N.O.	XB6DW1B1B	ZB6Ep1B(1)	ZB6Z1B	ZB6DW1
		N.C. + N.O.	XB6DW1B5B	ZB6Ep1B(1)	ZB6Z5B	ZB6DW1
	green	N.O.	XB6DW3B1B	ZB6Ep3B(1)	ZB6Z1B	ZB6DW3
		N.C. + N.O.	XB6DW3B5B	ZB6Ep3B(1)	ZB6Z5B	ZB6DW3
	red	N.C.	XB6DW4B2B	ZB6Ep4B(1)	ZB6Z2B	ZB6DW4
		N.C. + N.O.	XB6DW4B5B	ZB6Ep4B(1)	ZB6Z5B	ZB6DW4
	yellow	N.O.	–	ZB6Ep5B(1)	ZB6Z1B	ZB6DW5
		N.C. + N.O.	XB6DW5B5B	ZB6Ep5B(1)	ZB6Z5B	ZB6DW5
Type of push			Latching			
Catalog number	white	N.O.	–	ZB6Ep1B(1)	ZB6Z1B	ZB6DF1
		N.C. + N.O.	XB6DF1B5B	ZB6Ep1B(1)	ZB6Z5B	ZB6DF1
	green	N.O.	XB6DF3B1B	ZB6Ep3B(1)	ZB6Z1B	ZB6DF3
		N.C. + N.O.	XB6 DF3B5B	ZB6Ep3B(1)	ZB6Z5B	ZB6DF3
	red	N.C.	XB6DF4B2B	ZB6Ep4B(1)	ZB6Z2B	ZB6DF4
		N.C. + N.O.	XB6DF4B5B	ZB6Ep4B(1)	ZB6Z5B	ZB6DF4
	yellow	N.O.	–	ZB6Ep5B(1)	ZB6Z1B	ZB6DF5
		N.C. + N.O.	–	ZB6Ep5B(1)	ZB6Z5B	ZB6DF5



Pilot lights

Type of head		Smooth lens cap		
Shape of head		rectangular (2)		
		Complete products	Products for user assembly	
		12– 24 VAC/DC		
Catalog number	white	XB6DV1BB	ZB6Ep1B (1)	ZB6DV1
	green	XB6DV3BB	ZB6Ep3B (1)	ZB6DV3
	red	XB6DV4BB	ZB6Ep4B (1)	ZB6DV4
	yellow	XB6DV5BB	ZB6Ep5B (1)	ZB6DV5
	blue	–	ZB6Ep6B (1)	ZB6DV6

(1) Basic catalog number, to be completed by the letter B, G or M indicating the required voltage. See voltage table above.

(2) For products with a square head, replace the letter **D** in the catalog number by the letter **C** (XB6DW1B1B becomes XB6CW1B1B).

For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6DW1B1B becomes XB6AW1B1B).

(3) Alternative connection: 1 x 0.5 pins for printed circuit boards.

Contact functions

2



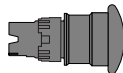
Push buttons

Type of head			  			Flush push		
Shape of head						rectangular (1)		
Degree of protection						IP 65 / Nema 4, 4X, 13		
Mounting (mm)			panel cut-out			$\varnothing 16.2^{+0.2}_0$		
			mounting centers			24 x 18 with rectangular head, 18 x 18 with square or circular head		
Dimensions (mm)			W x H x D (below head)			24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head		
Connection (2)						Tags for 2.8 x 0.5 Faston connectors or for soldering		
Type of push						Spring return		
						Complete products		
						Products for user assembly		
						 		
Catalog number	white		N.O.	XB6DA11B	ZB6Z1B	ZB6DA1		
			N.C. + N.O.	XB6DA15B	ZB6Z5B	ZB6DA1		
	black		N.O.	—	ZB6Z1B	ZB6DA2		
			N.C. + N.O.	XB6DA25B	ZB6Z5B	ZB6DA2		
	green		N.O.	XB6DA31B	ZB6Z2B	ZB6DA3		
			N.C. + N.O.	XB6DA35B	ZB6Z5B	ZB6DA3		
	red		N.O.	—	ZB6Z1B	ZB6DA4		
			N.C. + N.O.	XB6DA45B	ZB6Z5B	ZB6DA4		

(1) For products with a square head, replace the letter **D** in the catalog number by the letter **C** (XB6DA11B becomes XB6CA11B).
For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6DA11B becomes XB6AA11B).
(2) Alternative connection: 1 x 0.5 pins for printed circuit boards.



Ø 30 mushroom head Emergency stop push buttons (3)

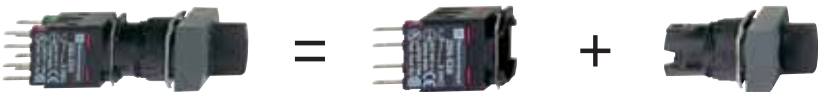
Type of head				Trigger action (EN 418)			
Shape of head				cylindrical			
Type of push				Turn to release			
				Complete products	Products for user assembly		
							
Catalog number	red		2 N.C. + 1 N.O.	XB6AS8349B	ZB6E2B	ZB6Z5B	ZB6AS834
Type of push				Key release, Ronis 200			
Catalog number	red		2 N.C. + 1 N.O.	XB6AS9349B	ZB6E2B	ZB6Z5B	ZB6AS934

(3) The trigger action mushroom head Emergency stop push buttons conform to standard IEC/EN 60947-5-5, Machinery Directive 98/37/EC and standard EN 418

Harmony
XB6

Push buttons, switches and pilot lights
Ø 16 mm with plastic bezel
Contact functions and light functions
with integral LED

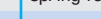
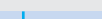
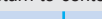
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Selector switches and key switches

Type of head	  	Black handle				
Shape of head		rectangular (2)				
Degree of protection		IP 65 / Nema 4, 4X, 13				
Mounting (mm)	panel cut-out	Ø 16.2 ^{+ 0.2} ₀				
	mounting centers	24 x 18 with rectangular head, 18 x 18 with square or circular head				
Dimensions (mm)	W x H x D (below head)	24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head				
Connection (3)		Tags for 2.8 x 0.5 Faston connectors or for soldering				
Type of operator		Black handle				
		Complete products Products for user assembly				
Number and type of positions		2 positions stay put  2 positions stay put  2 positions spring return to center 				
Catalog number	N/O	XB6DD221B	ZB6Z1B	ZB6DD22	ZB6Z1B	ZB6DD24
	N/C + N/O	XB6DD225B	ZB6Z5B	ZB6DD22	ZB6Z5B	ZB6DD24
Number and type of positions		3 positions stay put  3 positions stay put  3 positions spring return to center 				
Catalog number	N/O	XB6DD235B	ZB6Z5B	ZB6DD23	ZB6Z5B	ZB6DD25



Type of operator		Ronis key, n° 200				
		Complete products	Products for user assembly			
						
Number and type of positions		2 positions stay put 	2 positions stay put 	2 positions spring return to center 		
Catalog number	N/C + N/O	XB6DGC5B	ZB6Z5B	ZB6DGC	ZB6Z5B	ZB6DGB
Number and type of positions		3 positions stay put 	3 positions stay put 	3 positions spring return to center 		
Catalog number	N/C + N/O	XB6DGH5B	ZB6Z5B	ZB6DGH	ZB6Z5B	ZB6DGS

(1):

Voltage	Letter (p)
12–24 V AC/DC (15 mA)	B
48–120 V AC (25 mA)	G
230–240 V AC (25 mA)	M



Illuminated selector switches

Type of operator				Colored handle					
Products for user assembly				   					
Number and type of positions						2 positions stay put 	3 positions stay put 		
Catalog number	white		N/C + N/O	ZB6Ep1B (1)	ZB6Z5B	ZB6DD02	ZB6DD03	ZB6YK1	
	green		N/C + N/O	ZB6Ep3B (1)	ZB6Z5B	ZB6DD02	ZB6DD03	ZB6YK3	
	red		N/C + N/O	ZB6Ep4B (1)	ZB6Z5B	ZB6DD02	ZB6DD03	ZB6YK4	

- (1) Basic catalog number, to be completed by the letter B, G or M indicating the required voltage. See voltage table above.
- (2) For products with a square head, replace the letter **D** in the catalog number by the letter **C** (XB6DD221B becomes XB6CD221B).
- For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6DD221B becomes XB6AD221B).
- (3) Alternative connection: 1 x 0.5 pins for printed circuit boards



Sub-assemblies & accessories for Ø 16 mm plastic bezel control and signalling units

Harmony
XB6



2

Sub-assemblies		Bodies for push buttons and selector switches			Bodies for pilot lights			
Rated operational characteristics, AC-15: Ue = 240V and Ie = 1.5 A or Ue = 120 V and Ie = 3 A					Consumption			
Positive operation of contacts conforming to IEC/EN 60947-5-1: N.C. contacts with positive opening operation, positive opening force 20 N					15 mA		12–24 VAC/DC	
					25 mA		48–120 VAC	
					25 mA		230–240 VAC	
	Type of contact	Fixing collar + contacts	Contacts	Pilot light bodies	12–24 V	48 –120 V	230 –240 V	
Catalog number	N.O.	ZB6Z1B	ZB6E1B	White 	ZB6EB1B	ZB6EG1B	ZB6EM1B	
	N.C.	ZB6Z2B	ZB6E2B	Green 	ZB6EB3B	ZB6EG3B	ZB6EM3B	
	2 N.O.	ZB6Z3B	–	Red 	ZB6EB4B	ZB6EG4B	ZB6EM4B	
	2 N.C.	ZB6Z4B	–	Yellow 	ZB6EB5B	ZB6EG5B	ZB6EM5B	
	N.O. + N.C.	ZB6Z5B	–	Blue 	ZB6EB6B	ZB6EG6B	ZB6EM6B	

Accessories							
Legend holders		24 x 28 mm (8 x 21 mm legend)			24 x 36 mm (16 x 21 mm legend)		
Blank legend	Background color	without legend	yellow or white	black or red	without legend	yellow or white	black or red
Catalog number (10)*		ZB6YD20	ZB6YD21	ZB6YD22	ZB6YD30	ZB6YD31	ZB6YD32
Blank legends for legend holders		8 x 21 mm (24 x 28 mm legend holder)			16 x 21 mm (24 x 36 mm legend holder)		
	Background color	–	yellow or white	black or red	–	yellow or white	black or red
Catalog number (20)*		–	ZB6Y1001	ZB6Y2001	–	ZB6Y4001	ZB6Y3001
Ø 45 mm yellow legend for mushroom head Emergency stop push button							
	Making	Blank, for engraving		EMERGENCY STOP			
Catalog number		ZB6Y7001		ZB6Y7330			
Body/fixing collar		Plate		Tightening tool		Dismantling tool	
		anti-rotation		and slackening, for fixing nut		for removal of contact blocks	
Catalog number		ZB6Y009 (10)*		ZB6Y905 (2)*		ZB6Y018 (5)*	
Protective shutter for push buttons and switches				Connector		Blanking plug	
	for rectangular heads	for circular and square heads		Faston, female		IP 65	
Catalog number		ZB6YD001		ZB6YA001		ZB6Y004 (100)*	
						ZB6Y005 (10)*	

* sold in lots of

Harmony

XB4

Push buttons, switches and pilot lights

Ø 22 mm with metal bezel

Contact functions



Push buttons, spring return

Type of head		Plated circular bezel						
Degree of protection		IP 65 / Nema 4X, 13 (IP 66 for booted push buttons)						
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)						
	mounting centers	30 (horizontal) x 40 (vertical)						
Depth (mm)		43						
Connection (1)		Screw clamp terminals						
Type of push		Flush			Flush, booted			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number								
	black ● N.O.	XB4BA21	ZB4BZ101	ZB4BA2	XB4BP21	ZB4BZ101	ZB4BP2	
	green ● N.O.	XB4BA31	ZB4BZ101	ZB4BA3	XB4BP31	ZB4BZ101	ZB4BP3	
	red ● N.C.	XB4BA42	ZB4BZ102	ZB4BA4	XB4BP42	ZB4BZ102	ZB4BP4	
	yellow ● N.O.	XB4BA51	ZB4BZ101	ZB4BA5	XB4BP51	ZB4BZ101	ZB4BP5	
	blue ● N.O.	XB4BA61	ZB4BZ101	ZB4BA6	XB4BP61	ZB4BZ101	ZB4BP6	
Type of push		Flush						
With international marking	Products	Complete	For user assembly					
Catalog number								
	green ⓘ N.O.	XB4BA3311	ZB4BZ101	ZB4BA331	–	–	–	
	red ⓘ N.C.	XB4BA4322	ZB4BZ102	ZB4BA432	–	–	–	
	white ⓘ N.O.	XB4BA3341	ZB4BZ101	ZB4BA334	–	–	–	
	black ⓘ N.O.	XB4BA3351	ZB4BZ101	ZB4BA335	–	–	–	
Type of push		Projecting			Mushroom head, Ø 40 mm			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number								
	black ● N.O.	–	–	–	XB4BC21	ZB4BZ101	ZB4BC2	
	red ● N.C.	XB4BL42	ZB4BZ102	ZB4BL4	–	–	–	
Type of push		Double-headed push buttons			Double-headed push buttons, booted			
Degree of protection		IP 40			IP 66			
With international marking	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number								
	green / red ⓘ N.C. + N.O.	XB4BL845	ZB4BZ105	ZB4BL8434	XB4BL945	ZB4BZ105	ZB4BL9434	

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).



Ø 40 mm mushroom head Emergency stop push buttons (2)

		Latching			Trigger action (EN 418)			
Type of push		Push-pull (N.C.)			Push-pull (N.C. + N.O.)			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number								
	red ● N.C. or N.C. + N.O.	XB4BT42	ZB4BZ102	ZB4BT4	XB4BT845	ZB4BZ105	ZB4BT84	
Type of push		Turn to release (N.C.)			Turn to release (N.C. + N.O.)			
Catalog number								
	red ● N.C. or N.C. + N.O.	XB4BS542	ZB4BZ102	ZB4BS54	XB4BS8445	ZB4BZ105	ZB4BS844	
Type of push		Key release (N.C.)			Key release (N.C. + N.O.)			
Catalog number								
	red ● N.C. or N.C. + N.O.	XB4BS142	ZB4BZ102	ZB4BS14	XB4BS9445	ZB4BZ105	ZB4BS944	

(2) The mushroom head Emergency stop push buttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC.

Trigger action mushroom head Emergency stop push buttons conform to standard EN 418.

Contact functions



2

Selector switches and key switches

Type of head		Plated circular bezel			
Degree of protection		IP 66 / Nema 4X, 13			
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)			
	mounting centers	30 (horizontal) x 40 (vertical)			
Depth (mm)		43			
Connection (1)		Screw clamp terminals			
Type of operator		Handle			
Products		Complete	For user assembly		Complete
Number and type of positions		2 positions stay put			2 positions spring return to left
Catalog number	black ● N.O.	XB4BD21	ZB4BZ101 ZB4BD2		XB4BD41
Number and type of positions		3 positions stay put			3 positions spring return to center
Catalog number	black ● N.O. + N.O.	XB4BD33	ZB4BZ103 ZB4BD3		XB4BD53
					ZB4BZ101 ZB4BD4
					ZB4BZ103 ZB4BD5



Type of operator		Key, n° 455			
Products		Complete	For user assembly		Complete
Number and type of positions (2)		2 positions stay put			2 positions stay put
Catalog number	black ● N.O.	XB4BG21	ZB4BZ101 ZB4BG2		XB4BG41
Number and type of positions		2 positions spring return to left			3 positions stay put
Catalog number	black ● N.O.	XB4BG61	ZB4BZ101 ZB4BG6		—
	black ● N.O. + N.O.	—	—		XB4BG33
					ZB4BZ103 ZB4BG3

Separate components



Electrical blocks

Single contact blocks

Rated operational characteristics		AC-15, 240V - 3 A
Positive operation of contacts conforming to IEC/EN 60947-5-1		All functions incorporating a N.C. contact are positive opening operation
Catalog number (5)*	N.O.	ZBE101
	N.C.	ZBE102

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

(2) The symbol indicates key withdrawal position.

* sold in lots of

Harmony

XB4

Push buttons, switches and pilot lights Ø 22 mm with metal bezel

Light functions

2



Pilot lights

Type of head		 Circular bezel Smooth lens cap						
Degree of protection		IP 66 / Nema 4X, 13						
Mounting (mm)	panel cut-out	$\varnothing$ 22.5 (22.4 ^{+0.4} ₀ recommended)						
	mounting centers	30 (horizontal) x 40 (vertical)						
Depth		below head 43						
Connection (1)		Screw clamp terminals						
Light source		Integral LED				Direct supply for BA 9s bulb (not included)		
Products		Complete				Complete	For user assembly  	
Supply voltage		24 VAC/DC	48–120 VAC	230–240 VAC	250 V max., 2.4 W max.			
Catalog number	white 	XB4BVB1	XB4BVG1	XB4BVM1	XB4BV61	ZB4BV6	ZB4BV01	
	green 	XB4BVB3	XB4BVG3	XB4BVM3	XB4BV63	ZB4BV6	ZB4BV03	
	red 	XB4BVB4	XB4BVG4	XB4BVM4	XB4BV64	ZB4BV6	ZB4BV04	
	yellow 	XB4BVB5	XB4BVG5	XB4BVM5	XB4BV65	ZB4BV6	ZB4BV05	
	blue 	XB4BVB6	XB4BVG6	XB4BVM6	—	—	—	



Illuminated push buttons and selector switches

Type			Flush push, spring return, illuminated push buttons					
Light source			Integral LED			Direct supply for BA 9s bulb (not included)		
Products			Complete			Complete	For user assembly	
						 		
Supply voltage			24 VAC/DC	48–120 VAC	230–240 VAC	250 V max–2.4 W max.		
Catalog number	white	 N.C. + N.O.	XB4BW31B5	XB4BW31G5	XB4BW31M5	XB4BW3165	ZB4BW065	ZB4BW31
	green	 N.C. + N.O.	XB4BW33B5	XB4BW33G5	XB4BW33M5	XB4BW3365	ZB4BW065	ZB4BW33
	red	 N.C. + N.O.	XB4BW34B5	XB4BW34G5	XB4BW34M5	XB4BW3465	ZB4BW065	ZB4BW34
	yellow	 N.C. + N.O.	XB4BW35B5	XB4BW35G5	XB4BW35M5	XB4BW3565	ZB4BW065	ZB4BW35
	blue	 N.C. + N.O.	XB4BW36B5	XB4BW36G5	XB4BW36M5	–	–	–



Type		Double-headed push buttons with LED pilot light (1 flush green push, 1 projecting red push)			Illuminated selector switches (2 position stay put)		
Degree of protection		IP 40			IP 65		
Light source		Integral LED			Integral LED		
Products		Complete			Complete		
Supply voltage		24 VAC/DC	48–120 VAC	230–240 VAC	24 VAC/DC	48–120 VAC	230–240 VAC
Catalog number	green	N.C. + N.O.	–	–	XB4BK123B5	XB4BK123G5	XB4BK123M5
	red	N.C. + N.O.	–	–	XB4BK124B5	XB4BK124G5	XB4BK124M5
	yellow	N.C. + N.O.	XB4BW84B5	XB4BW84G5	XB4BK125B5	XB4BK125G5	XB4BK125M5

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

Separate components and accessories



2

Electrical blocks

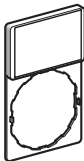
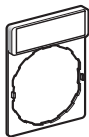
	Single contact blocks		Light blocks with integral LED				Light block, direct supply
Rated operational characteristics	AC-15, 240 V - 3 A		Consumption				
			18 mA	24 VAC/DC			
Positive operation of contacts conform to IEC/EN 60947-5-1	N.C. contacts with positive opening operation		14 mA	120 VAC			
			14 mA	240 VAC			
			To combine with heads for integral LED				
				24VAC/DC	48–120VAC	230–240 VAC	For BA 9s bulb (not included) 250 V max–2.4 W max.
Catalog number (5)*	N.O.	ZBE101	white 	ZBVB1	ZBVG1	ZBVM1	ZBV6
	N.C.	ZBE102	green 	ZBVB3	ZBVG3	ZBVM3	Color provided by lens
			red 	ZBVB4	ZBVG4	ZBVM4	
			yellow 	ZBVB5	ZBVG5	ZBVM5	
			blue 	ZBVB6	ZBVG6	ZBVM6	



Diecast metal enclosures

(Zinc alloy, usable depth 49 mm)

		1 vertical row				2 vertical rows		
Number of cut-outs	Front face dimensions	1	2	3	4	2	4	6
Catalog number	80 x 80 mm	XAPM1201	—	—	—	XAPM1202	—	—
	80 x 130 mm	—	XAPM2202	XAPM2203	—	—	XAPM2204	—
	80 x 175 mm	—	—	XAPM3203	XAPM3204	—	—	XAPM3206



Accessories

Legend holder s, 30 x 40 mm, for 8 x 27 mm legends

Marking	Background color : black or red						white or yellow
Catalog number (10)*	Blank	ZBY2101					ZBY4101
International	0 (red background)	ZBY2931	I	ZBY2147	AUTO	ZBY2115	STOP ZBY2304 —
English	OFF	ZBY2312	ON	ZBY2311	START	ZBY2303	—
French	ARRET (red b/grnd)	ZBY2104	ARRET-MARCHE	ZBY2166	MARCHE	ZBY2103	—
German	AUS	ZBY2204	AUS-EIN	ZBY2266	EIN	ZBY2203	—
Spanish	PARADA (red b/grnd)	ZBY2404	PARADA-MARCHA	ZBY2466	MARCHA	ZBY2403	—

Legend holder s, 30 x 50 mm, for 18 x 27 mm legends

Background color	black or red		white or yellow
Catalog Number (10)*	Blank	ZBY6101	ZBY6102

Ø 60 mm legend for mushroom head Emergency stop push button

Background color	yellow				
Marking	Blank	EMERGENCY STOP	ARRET D'URGENCE	NOT-AUS	PARADA DE EMERGENCIA
Catalog number	ZBY9101	ZBY9330	ZBY9130	ZBY9230	ZBY9430

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

* sold in lots of



Harmony

XB5

Push buttons, switches and pilot lights

Ø 22 mm with plastic bezel

Contact functions

2



Push buttons, spring return

Type of head		Circular bezel						
Degree of protection		IP 66 / Nema 4X, 13 (IP 66 for booted push buttons)						
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)						
	mounting centers	30 (horizontal) x 40 (vertical)						
Depth (mm)		43						
Connection (1)		Screw clamp terminals						
Type of push		Flush			Flush, booted			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number	black ● N.O.	XB5AA21	ZB5AZ101	ZB5AA2	XB5AP21	ZB5AZ101	ZB5 P2	
	green ● N.O.	XB5AA31	ZB5AZ101	ZB5AA3	XB5AP31	ZB5AZ101	ZB5AP3	
	red ● N.C.	XB5AA42	ZB5AZ102	ZB5AA4	XB5AP42	ZB5AZ102	ZB5AP4	
	yellow ● N.O.	XB5AA51	ZB5AZ101	ZB5AA5	XB5AP51	ZB5AZ101	ZB5AP5	
	blue ● N.O.	XB5AA61	ZB5AZ101	ZB5AA6	XB5AP61	ZB5AZ101	ZB5AP6	
Type of push		Flush						
With international marking	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number	green ⓘ N.O.	XB5AA3311	ZB5AZ101	ZB5AA3311	–	–	–	
	red ⓘ N.C.	XB5AA4322	ZB5AZ102	ZB5AA4322	–	–	–	
	white ⓘ N.O.	XB5AA3341	ZB5AZ101	ZB5 AA334	–	–	–	
	black ⓘ N.O.	XB5AA3351	ZB5AZ101	ZB5AA335	–	–	–	
Type of push		Projecting			Mushroom head, Ø 40 mm			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number	black ● N.O.	–	–	–	XB5AC21	ZB5AZ101	ZB5AC2	
	red ● N.C.	XB5AL42	ZB5AZ102	ZB5AL4	–	–	–	
Type of push		Double-headed push buttons			Double-headed push buttons, booted			
Degree of protection		IP 40			IP 66			
With international marking	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number	green / ⓘ N.C. + N.O.	XB5AL845	ZB5AZ105	ZB5AL8434	XB5AL945	ZB5AZ105	ZB5AL9434	
	red ⓘ							

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).



Ø 40 mm mushroom head Emergency stop push buttons (2)

		Latching			Trigger action (EN 418)			
Type of push		Push-pull (N.C.)			Push-pull (N.C. + N.O.)			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
Catalog number	red ● N.C. or N.C. + N.O.	XB5AT42	ZB5AZ102	ZB5AT4	XB5AT845	ZB5AZ105	ZB5AT84	
Type of push		Turn to release (N.C.)			Turn to release (N.C. + N.O.)			
Catalog number	red ● N.C. or N.C. + N.O.	XB5AS542	ZB5AZ102	ZB5AS54	XB5AS8445	ZB5AZ105	ZB5AS844	
Type of push		Key release (N.C.)			Key release (N.C. + N.O.)			
Catalog number	red ● N.C. or N.C. + N.O.	XB5AS142	ZB5AZ102	ZB5AS14	XB5AS9445	ZB5AZ105	ZB5AS944	

(2) The mushroom head Emergency stop push buttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC.

Trigger action mushroom head Emergency stop push buttons conform to standard EN 418



Contact functions



2

Selector switches and key switches

Type of head		Circular bezel			
Degree of protection		IP 66 / Nema 4X, 13			
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)			
	mounting centers	30 (horizontal) x 40 (vertical)			
Depth (mm)	below head	43			
Connection (1)		Screw clamp terminals			
Type of operator		Handle			
Products		Complete	For user assembly		Complete
Number and type of positions		2 positions stay put	2 positions stay put		2 positions spring return to left
Catalog number	black ● N.O.	XB5AD21	ZB5AZ101	ZB5AD2	XB5AD41
Number and type of positions		3 positions stay put	3 positions stay put		3 positions spring return to center
Catalog number	black ● N.O. + N.O.	XB5AD33	ZB5AZ103	ZB5AD3	XB5AD53
Type of operator		Key, n° 455			
Number and type of positions (2)		2 positions stay put	2 positions stay put		2 positions stay put
Catalog number	black ● N.O.	XB5AG21	ZB5AZ101	ZB5AG2	XB5AG41
					ZB5AZ101 ZB5AG4

(2) The symbol  indicates key withdrawal position.

Separate components and accessories

Electrical blocks

Single contact blocks			Light blocks with integral LED				Light block, direct supply	
			To combine with heads for integral LED				For BA 9s bulb (not included)	
				24VAC/DC	48–120 VAC	230–240 VAC	250 V max–2.4 W max.	
Catalog number (10)*	N.O.	ZBE101	white ●	ZBVB1	ZBVG1	ZBVM1	ZBV6	
	N.C.	ZBE102	green ●	ZBVB3	ZBVG3	ZBVM3	Color provided by lens	
			red ●	ZBVB4	ZBVG4	ZBVM4		
			yellow ●	ZBVB5	ZBVG5	ZBVM5		
			blue ●	ZBVB6	ZBVG6	ZBVM6		

Accessories

Legend holder s, 30 x 40 mm, for 8 x 27 mm legends

Marking		Background color: black or red							white or yellow
Catalog number (10)*		Blank	ZBY2101						ZBY4101
Catalog number	International	0 (red background)	ZBY2931	I	ZBY2147	AUTO	ZBY2115	STOP	ZBY2304
	English	OFF	ZBY2312	ON	ZBY2311	START	ZBY2303	–	–
	French	ARRET (red b/grnd)	ZBY2104	ARRET-MARCHE	ZBY2166	MARCHE	ZBY2103	–	–
	German	AUS	ZBY2204	AUS-EIN	ZBY2266	EIN	ZBY2203	–	–
	Spanish	PARADA (red b/grnd)	ZBY2404	PARADA-MARCHA	ZBY2466	MARCHA	ZBY2403	–	–

Legend holder s, 30 x 50 mm, for 18 x 27 mm legends

Background color	black or red	white or yellow
Catalog number (10)*	Blank ZBY6101	ZBY6102

Ø 60 mm legend for mushroom head Emergency stop push button

Background color	yellow				
Marking	Blank	EMERGENCY STOP	ARRET D'URGENCE	NOT-AUS	PARADA DE EMERGENCIA
Catalog number	ZBY9101	ZBY9330	ZBY9130	ZBY9230	ZBY9430
		Body/fixing collar		Fixing nut	Bezel tool
		for electrical block (contact or light)		for head	for tightening fixing nut ZB5AZ901
Catalog number		ZB5AZ009 (10)*		ZB5AZ901 (10)*	ZB5AZ905
					Plate
					anti-rotation
					ZB5AZ902

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

* sold in lots of

Harmony
XB5

Push buttons, switches and pilot lights
Ø 22 mm with plastic bezel
Light functions

2



Pilot lights

Type of head		 Circular bezel Smooth lens cap						
Degree of protection		IP 66 / Nema 4X, 13						
Mounting (mm)		panel cut-out	Ø 22.5 (22.4 ^{+ 0.4} ₀ recommended)					
		mounting centers	30 (horizontal) x 40 (vertical)					
Depth		below head	43					
Connection (1)		Screw clamp terminals						
Light source		Integral LED			Direct supply for BA 9s bulb (not included)			
Products		Complete			Complete	For user assembly		
						 		
Supply voltage		24VAC/DC	48–120 VAC	230–240 VAC	250 V max–2.4 W max.			
Catalog number	white 	XB5AVB1	XB5AVG1	XB5AVM1	XB5AV61	ZB5AV6	ZB5AV01	
	green 	XB5AVB3	XB5AVG3	XB5AVM3	XB5AV63	ZB5AV6	ZB5AV03	
	red 	XB5AVB4	XB5AVG4	XB5AVM4	XB5AV64	ZB5AV6	ZB5AV04	
	yellow 	XB5AVB5	XB5AVG5	XB5AVM5	XB5AV65	ZB5AV6	ZB5AV05	
	blue 	XB5AVB6	XB5AVG6	XB5AVM6	–	–	–	



Illuminated push buttons and selector switches

Type				Flush push, spring return, illuminated push buttons					
Light source				Integral LED			Direct supply for BA 9s bulb (not included)		
Products				Complete			Complete	For user assembly	
							 		
Supply voltage				24VAC/DC	48–120 VAC	230–240 VAC	250 V max–2.4 W max.		
Catalog number	white		N.C. + N.O.	XB5AW31B5	XB5AW31G5	XB5AW31M5	XB5AW3165	ZB5AW065	ZB5AW31
	green		N.C. + N.O.	XB5AW33B5	XB5AW33G5	XB5AW33M5	XB5AW3365	ZB5AW065	ZB5AW33
	red		N.C. + N.O.	XB5AW34B5	XB5AW34G5	XB5AW34M5	XB5AW3465	ZB5AW065	ZB5AW34
	yellow		N.C. + N.O.	XB5AW35B5	XB5AW35G5	XB5AW35M5	XB5AW3565	ZB5AW065	ZB5AW35
	blue		N.C. + N.O.	XB5AW36B5	XB5AW36G5	XB5AW36M5	–	–	–



Type		Double-headed push buttons with LED pilot light (1 flush green push, 1 projecting red push)			Illuminated selector switches (2 position stay put)		
Degree of protection		IP 40			IP 65		
Light source		Integral LED			Integral LED		
		Products			Complete		
Supply voltage		24VAC/DC	48–120VAC	230–240VAC	24VAC/DC	48–120VAC	230–240VAC
Catalog number	green  N.C. + N.O.	–	–	–	XB5AK123B5	XB5AK123G5	XB5AK123M5
	red  N.C. + N.O.	–	–	–	XB5AK124B5	XB5AK124G5	XB5AK124M5
	yellow  N.C. + N.O.	XB5AW84B5	XB5AW84G5	XB5AW84M5	XB5AK125B5	XB5AK125G5	XB5AK125M5

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).
Separate components and accessories: see previous page.



Control stations

For XB5 push buttons, switches and pilot lights

Ø 22 mm with plastic bezel

Harmony

XB5/XAL

(1):

Number of cut-outs	Number (p)
1	1
2	2
3	3
4	4
5	5



Complete stations with 1 push button, selector switch or key switch

(light grey RAL 7035 base with dark grey RAL 7016 lid)

Degree of protection			IP 65 / Nema 4X and 13				
Dimensions (mm)			W x H x D				
Fixing (mm)			2 x Ø 4.3 on 54 mm centers				
Function			1 Start or Stop function			1 Start-Stop function	
Marking			On spring return push			On legend holder and legend below head	
Number and type of push button/selector switch/key switch			1 flush green p/b	1 flush red p/b	1 projecting red p/b	1 2 position stay put selector switch or key switch	
Catalog number	N.O.	I	XALD102	–	–	Black handle	Key n° 455 (key withdrawal LH pos.)
		Start	XALD103	–	–	–	–
		O - I	–	–	–	XALD134	XALD144
	N.C.	O	–	XALD112	XALD115	–	–

(1) Empty enclosures:

Basic catalog number: **XALK0p**, replace the p by the number of cut-outs required (see cut-out table above)



Function			Emergency stop (2) (light grey RAL 7035 base with yellow RAL 1012 lid)			
Number and type of mushroom head push button			1 red Ø 40 head, turn to release		1 red Ø 40 head, key release	
Latching mechanism			Trigger action (EN 418)		Latching	
Catalog number	N.C.		–	XALK174	XALK184	
	N.C. + N.C.		XALK178F	XALK174F	XALK184F	
	N.C. + N.O.		XALK178E	XALK174E	XALK184E	
	N.C. + N.C. + N.O.		XALK178G	XALK174G	XALK184G	

(2) The mushroom head Emergency stop push buttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC.

Trigger action mushroom head push buttons conform to standard EN 418.



(1) Empty enclosures:

Basic catalog number: **XALK0p**, replace the p by the number of cut-outs required (see cut-out table above)

Complete stations with 2 and 3 push buttons or 2 push buttons + 1 pilot light

(light grey RAL 7035 base with dark grey RAL 7016 lid)

Dimensions (mm)			W x H x D				
Fixing (mm)			2-way control stations: 68 x 106 x 62; 3-way control stations: 68 x 136 x 87				
Function			Start-Stop functions			2 functions	3 functions
Marking			On spring return push				
Number and type of push button/pilot light			1 flush green p/b 1 flush red p/b	1 flush green push button 1 flush red push button 1 red pilot light with integral LED(1)	1 flush white p/b 1 flush black p/b	1 flush white p/b 1 flush red p/b 1 red pilot light with integral LED(1)	1 flush white p/b 1 flush red p/b 1 red pilot light with integral LED(1)
Catalog number	N.O. + N.C.	I - O	XALD213	XALD363B	XALD363M	–	–
		Start - Stop	XALD215	–	–	–	–
	N.O. + N.O.	↕	–	–	–	XALD222	–
	N.O. + N.C. + N.O.	↕	–	–	–	–	XALD324 XALD328

Accessories		Standard contact blocks		(1) Light blocks with integral LED, color red	
Description		N.O. contact	N.C. contact	24 VAC/DC	230 VAC
Catalog number		ZENL1111	ZENL1121	ZALVB4	ZALVM4

Harmony
Class 9001
K/SK

Control and signalling units Ø 30 mm
with metal ring nut
Non-illuminated complete operators

2



Push buttons, spring return

Type of push			Full guard	No guard	Extended guard
Color of push			Multi-color (set of 7 clip-in colored caps)		
Degree of protection			IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13		
Mounting		panel cut-out	30.5 mm		
Depth below head (mm)			42		
Connection			Screw clamp terminals		
Catalog number	Universal 7 color—black, red, green, yellow, orange, blue & white	N.O. + N.C.	9001KR1UH13	9001KR3UH13	9001KR2UH13
		N.O.	9001KR1UH5	9001KR3UH5	9001KR2UH5



Mushroom head Emergency stop push buttons

Type of push		Spring return, red		Push-pull, red	
		35 mm mushroom head	57 mm mushroom head	40 mm mushroom head	35 mm mushroom head
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13			
Mounting	panel cut-out	30.5 mm			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Catalog number	N.O. + N.C.	9001KR24RH13	9001KR25RH13	9001KR9R94H13	9001KR9R20H13
	N.C.	9001KR24RH6	9001KR25RH6	9001KR9R94H6	9001KR9R20H6



Selector switches and key switches

Type of operator		Long black handle				Key, no E10
positions (1)		3 - spring return	2 - maintained	2 - spring return	3 - maintained	2 - maintained
Number and type of positions						
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13				
Mounting	panel cut-out	30.5 mm				
Depth below head (mm)		42				
Connection		Screw clamp terminals				
Catalog number	N.O.	—	9001KS11FBH5	9001KS34FBH5	—	—
	N.O. + N.C.	9001KS53FBH1	—	—	9001KS43FBH1	9001KS11K1H1

(1) The symbol indicates key withdrawal position.



Illuminated complete operators



2

Pilot lights

Type of head		Smooth lens cap		
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13		
Mounting	panel cut-out	30.5 mm		
Depth below head (mm)		46		
Connection		Screw clamp terminals		
Type of light block		With high luminosity LED (included)		Incandescent BA 9s bulb
				Transformer type
Catalog number	green	24 VAC/DC	120 VAC/DC	120 VAC
	red	9001KP35LGG9	9001KP38LGG9	9001KP1G9
	amber	9001KP35LRR9	001KP38LRR9	9001KP1R9
		9001KP35LYA9	9001KP38LYA9	9001KP1A9



Illuminated push buttons, spring return

Type of head		Spring return full guard		No guard
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13		
Mounting	panel cut-out	30.5 mm		
Depth below head (mm)		71		
Connection		Screw clamp terminals		
Type of light block		With high luminosity LED (included)		Incandescent BA 9s bulb
				Transformer type
Catalog number	green	24 VAC/DC	120 VAC/DC	120 VAC
	red	N.O. + N.C.	9001K3L35LGGH13	9001K3L38LGGH13
	red	N.O. + N.C.	9001K3L35LRRH13	9001K3L38LRRH13
Catalog number	amber	N.O. + N.C.	9001K3L35LYAH13	9001K3L38LYAH13
				9001K2L1RH13
				9001K2L1GH13
				9001K2L1AH13



Illuminated 41 mm mushroom head push buttons, high luminosity LED

Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 6, 12 and 13		
Mounting (mm)	panel cut-out	30.5 mm		
Depth below head (mm)		71		
Connection		Screw clamp terminals		
Type of light block		With high luminosity LED (included)		Incandescent BA 9s bulb
				Transformer type
Type of head		24 VAC/DC	120 VAC/DC	120 VAC
		2 position, push-pull		
		9001KR9P35LRRH13	9001KR9P38LRRH13	9001KR9P1RH13
Type of head		3 position, push-pull (pull: spring return, center: maintained, push: spring return)		
Catalog number	red	N.O. + N.C.	9001KR8P35LRRH25	9001KR8P38LRRH25
				9001KR8P1RH25
		late break		

Harmony
Class 9001
K/SK

Control and signalling units Ø 30 mm
with plastic ring nut
Complete operators and pilot lights

2



Push buttons, spring return

Type of push			Full guard	No guard	Extended guard
Color of push			Multi-color (set of 7 clip-in colored caps)		
Degree of protection			IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 4X, 12 and 13		
Mounting		panel cut-out	30.5 mm		
Depth below head (mm)			42		
Connection			Screw clamp terminals		
Catalog number	Universal 7 color—black, red, green, yellow, orange, blue & white	N.O. + N.C.	9001SKR1UH13	9001SKR3UH13	9001SKR2UH13
		N.O.	9001SKR1UH5	9001SKR3UH5	9001SKR2UH5



Selector switches

Type of operator		Long black handle			
positions		3 - spring return	2 - maintained	2 - spring return	3 - maintained
Number and type of positions					
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 4X, 12 and 13			
Mounting panel cut-out		30.5 mm			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Catalog number	N.O.	–	9001SKS11FBH5	9001SKS34FBH5	–
	N.O. + N.C.	9001SKS53FBH1	–	–	9001SKS43FBH1



Pilot lights

Type of head		Smooth lens cap		
Degree of protection		IP 66 / NEMA & UL Type 1, 2, 3, 3R, 4, 4X, 12 and 13		
Mounting	panel cut-out	30.5 mm		
Depth below head (mm)		46		
Connection		Screw clamp terminals		
Type of light block		With high luminosity LED (included)		Incandescent BA 9s bulb
				Transformer type
		24 VAC/DC	120 VAC/DC	230 VAC
Catalog number	green	9001SKP35LGG9	9001SKP38LGG9	9001SKP1G9
	red	9001SKP35LRR9	9001SKP38LRR9	9001SKP1R9
	amber	9001SKP35LYA9	9001SKP38LYA9	9001SKP1A9

Accessories for plastic and metal
Ø 30 mm control and signalling units

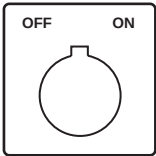
Harmony
Class 9001
K/SK



2

Contact blocks with protected terminals

Type of contact	Single and dual contact blocks	
Contact rating	NEMA & UL Type A600/Q600, AC continuous carrying—10 A	
Connection	Screw clamp terminals	
Catalog number	N.O. + N.C.	9001KA1
	N.O.	9001KA2
	N.C.	9001KA3
	N.O. (early close) + N.C.	9001KA4
	N.C., late break	9001KA5
	N.O., early close	9001KA6



Legends

Type	Color of legend	Aluminum, size 44 x 43 mm black background	Plastic, size 57 x 57 mm white background
Marking	Blank	9001KN200	9001KN100WP
	START	9001KN201	9001KN101WP
	STOP (red background)	9001KN202	9001KN102RP
	ON	9001KN203	9001KN103WP
	FORWARD	9001KN206	9001KN106WP
	REVERSE	9001KN207	9001KN107WP
	CLOSE	9001KN208	9001KN108WP
	OPEN	9001KN209	9001KN109WP
	DOWN	9001KN210	9001KN110WP
	UP	9001KN211	9001KN111WP
	HIGH	9001KN214	9001KN114WP
	LOW	9001KN215	9001KN115WP
	RESET	9001KN223	9001KN123WP
	OFF-ON	9001KN244	9001KN144WP
	ON-OFF	9001KN245	9001KN145WP
	HAND-OFF-AUTO	9001KN260	9001KN160WP



Accessories

Type	Ring nut wrench for 9001K/SK and 22 mm	Blanking plug Chrome plated for 30 mm knockout	Emergency stop round yellow legend	
Catalog number	9001K95	9001K52	60 mm	90 mm
			9001KN9330	9001KN8330

Harmony
XA
9001 KY

Empty enclosures, Ø 22 mm & 30 mm for
user assembly

2



XAL 22 mm (plastic, for use with XB5 devices)

Empty Enclosures (1)		IP 66 / NEMA & UL Type 4, 12 and 13		
Type		Number of Holes	Dimensions (H x W x D)	Catalog number
Light gray base "RAL 7035" Dark gray lid "RAL 7016"		1	68 x 68 x 53	XALD01
		2	106 x 68 x 53	XALD02
		3	136 x 68 x 53	XALD03
		4	166 x 68 x 53	XALD04
		5	196 x 68 x 53	XALD05
Light gray base "RAL 7035" Yellow lid "RAL 1012"		1	68 x 68 x 53	XALK01

(1) For customer assembly using XB5 operators, 22 mm starting on page 2/16.



XAP 22 mm (metallic, for use with XB4 devices)

Empty enclosures (2)		IP65 / NEMA & UL Type 4, 13		
Mounting		40 mm centerline spacing of holes		
Type	Usable Depth	Dimensions (H x W)	# of 22 mm knock-outs	Catalog number
Die Cast	49 mm	80 x 80	1	XAPG19201
Zinc Gray RAL 7032	74.5 mm	130 x 80	2	XAPG29202
		175 x 80	3	XAPG39203
		80 x 80	1	XAPG19501
		130 x 80	2	XAPG29502
		175 x 80	3	XAPG39503
Aluminum	74.5 mm	220 x 80	4	XAPG49504
		310 x 85	5	XAPG59505

(2) For customer assembly using XB4 operators, 22 mm starting on page 2/12.



KY 30 mm (metallic, for use with Type K and SK devices) (3)

Type	Number of 30 mm cut-outs	NEMA ratings	Catalog number
Die Cast Aluminum	1	1, 3, 4, 6, 12, 13	9001KY1
	2	1, 3, 4, 6, 12, 13	9001KY2
	3	1, 3, 4, 6, 12, 13	9001KY3
	4	1, 3, 4, 6, 12, 13	9001KY4
Stainless steel	1	1, 3, 4, 4X	9001KYSS1
	2	1, 3, 4, 4X	9001KYSS2
	3	1, 3, 4, 4X	9001KYSS3

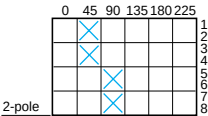
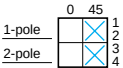
(3) For customer assembly using Type K and SK devices, 30 mm starting on page 2/20.

Cam switches
20 A ratings

Harmony
K series



positions (°)



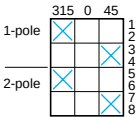
2

Cam switches K2 series

Function	Switches	ON-OFF switches	Stepping switches
	45° switching angle	90° s switching angle	with "0" position
Degree of protection	front face	IP 65 (1)	IP 65 (1)
Conventional thermal current (Ith)	20 A	20 A	20 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2	2	2 + "0" position
Number of poles	2	2	2
Dimensions of front plate (mm)	45 x 45	45 x 45	45 x 45
Front mounting method	Multifixing plate, 45 x 45 mm	K2B002ALH	K2D012QLH
	Plastic mounting plate for Ø 22 mm hole	K2B002ACH	K2D012QCH



positions (°)



Cam switches K2 series

Function	Changeover switches
Degree of protection	front face
Conventional thermal current (Ith)	IP 65 (1)
Rated insulation voltage (Ui) conforming to IEC60947-1	20 A
Number of positions	690 V
Number of poles	2 + "0" position
Dimensions of front plate (mm)	2
Front mounting method	45 x 45
	Multifixing plate, 45 x 45 mm
	Plastic mounting plate for Ø 22 mm hole

(1) With seal KZ73 for switch with Multifixing plate, with seal KZ65 for Ø 22 mm hole mounting switches. Seal to be ordered separately.

Harmony

XVB / XVP

Beacons and indicator banks

Universal - For signalling from 35 to 50 m

Universal range

High performance and wide choice of units

2

Ø 70 mm



Illuminated beacons XVB L		Steady light signalling		Flashing light signalling	
Light source		Incandescent BA 15d bulb 10 W max. (not included)	Protected BA 15d LED (included)	Protected BA 15d LED (included)	"Flash" discharge tube 5 J (1)
Degree of protection		IP 66			
Beacon catalog number (2)	12–250 VAC/DC	XVBL3p	–	–	–
	24 VAC/DC	–	XVBL0Bp	XVBL1Bp	XVBL6Bp
	120 VAC	–	XVBL0Gp	XVBL1Gp	XVBL6Gp
	230 VAC	–	XVBL0Mp	XVBL1Mp	XVBL6Mp

Ø 70 mm



Indicator banks XVB C comprising 2 to 5 signalling units (3)		Base units	Steady light signalling		Flashing light signalling	"Flash" light signalling	Audible units (90 db at 1 m)
Light source		–	Incandescent BA 15d bulb, 10 W max. (not included)	Integral protected LED	Integral protected LED	"Flash" discharge tube 5 J (1)	–
Degree of protection		IP 66					
Base unit catalog number	with cover	XVBC21 (4)	–	–	–	–	–
	without cover	XVBC07 (5)	–	–	–	–	–
Lens unit catalog number (2)	12–230 VAC/DC	–	XVBC3p	–	–	–	–
	24 VAC/DC	–	–	XVBC2Bp	XVBC5Bp	XVBC6Bp	–
	120 VAC	–	–	XVBC2Gp	XVBC5Gp	XVBC6Gp	–
	230 VAC	–	–	XVBC2Mp	XVBC5Mp	XVBC6Mp	–
Audible unit catalog number unidirectional	12–48 VAC/DC	–	–	–	–	–	XVBC9B
	120–230 VAC	–	–	–	–	–	XVBC9M

(4) For connection on AS-Interface, order base unit XVBC21A (side cable entry) or XVBC21B (bottom cable entry with M12 connector on flying lead).

(5) For indicator banks with "flash" discharge tube unit.

Ø 50 mm



Indicator banks XVP C comprising 2 to 5 signalling units (3), black clamping ring (6)		Base unit	Steady or flashing light signalling	"Flash" light signalling		Audible units (55–85 dB at 1 m)
Light source		–	Incandescent BA 15d bulb, 7 W max. (not included)	"Flash" discharge tube 0.3 J	"Flash" discharge tube 0.6 J	–
Degree of protection		IP 65				
Base unit	with cover	XVPC21	–	–	–	–
Catalog number (2)	250 V max.	–	XVPC3p	–	–	–
	24 VAC/DC (flash) - 24 VDC (buzzer)	–	–	XVPC6Bp	–	XVPC09B
	120 VAC	–	–	–	XVPC6Gp	XVPC09G
	230 VAC	–	–	–	XVPC6Mp	XVPC09M

(1) To order a lens unit with a **10 J** discharge tube, replace the number 6 by 8 in the catalog number (example: XVBL6Bp becomes XVBL8Bp).

(2) To obtain the complete catalog number, replace the p by the number designating the color as follows: 3 = green, 4 = red, 5 = orange, 6 = blue, 7 = clear, 8 = yellow.

(3) An indicator bank comprises: 1 base unit + 1 to 5 signalling units maximum.

(6) To order products with a **cream clamping ring**, add the letter **W** to the end of the catalog number (example: base unit + green lens unit: XVPC21W + XVPC33W etc.).

Beacons and indicator banks

Harmony
XVDLS / XVE

2

Ø 45 mm

Miniature Illuminated beacons XVDLS		Steady light signalling	"Flash" light signalling
Light source		Incandescent BA 15d bulb, 5W max. (not included)	"Flash" discharge tube, 0.5 J
Degree of protection		IP 40	
Beacon catalog number (4)	24–230 VAC/DC	XVDLS3p	–
	24 VAC/DC	–	XVDLS6Bp
	120 VAC	–	XVDLS6Gp
	230 VAC	–	XVDLS6Mp

(4) To obtain the complete catalog number, replace the **p** by the number designating the color as follows: 3 = green , 4 = red , 5 = orange, 6 = blue, 7 = clear, 8 = yellow.

Ø 70 mm

Illuminated beacons XVE L		Steady light signalling		"Flash" light signalling
Light source		Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	"Flash" discharge tube, 1 J
Degree of protection		IP 42/IP 54 (with sealing kit)		
Beacon catalog number(5)	24– 240 VAC/DC	XVEL3p	–	–
	24 VAC/DC	–	XVEL2Bp	XVEL6Bp
	120 VAC	–	XVEL2Gp	XVEL6Gp
	230 VAC	–	XVEL2Mp	XVEL6Mp

(5) To obtain the complete catalog number, replace the **p** by the number designating the color as follows: 3 = green , 4 = red , 5 = orange, 6 = blue, 7 = clear.

Ø 70 mm

Indicator banks XVE C comprising 2 to 5 signalling units (5)		Base units	Steady light signalling		Flashing light signalling	"Flash" light signalling	Audible units (85 db at 1 m)
Light source		–	Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	Integral LED	"Flash" discharge tube 1 J	–
Degree of protection		IP 42/IP 54 (with sealing kit)					
Base unit catalog number	IP 42	XVEC21	–	–	–	–	–
	IP 54	XVEC21P	–	–	–	–	–
Lens unit catalog number(6)	24–230 VAC/DC	–	XVEC3p	–	–	–	–
	24 VAC/DC	–	–	XVEC2Bp	XVEC5Bp	XVEC6Bp	XVEC9B
	120 VAC	–	–	XVEC2Gp	XVEC5Gp	XVEC6Gp	XVEC9G
	230 VAC	–	–	XVEC2Mp	XVEC5Mp	XVEC6Mp	XVEC9M

(6) An indicator bank comprises: 1 base unit + 1 to 5 signalling units.



Rotating mirror beacon XVR and Sirens XVS		Rotating mirror beacon		Sirens, 106 db	
Description		Halogen bulb 70 W H1 (included)	Incandescent bulb 25 W BA 15d (included)	1 tone	2 tone
Diameter		Ø 165 mm		Ø 92 mm	
Degree of protection		IP 65		IP 40	
Catalog number(3)	24 VAC/DC	XVR1B9p	XVR1B0p	XVSB1	XVSB2
	120 VAC	–	XVR1G0p	XVSG1	XVSG2
	230 VAC	–	XVR1M0p	XVSM1	XVSM2

(3) To obtain the complete catalog number, replace the **p** by the number designating the color as follows: 3 = green , 4 = red , 5 = orange, 6 = blue, 8 = yellow.



Bulbs and LEDs		Beacons and indicator banks XVB / XVP ⁽¹⁾				Rotating mirror beacon XVR	
Light source		Incandescent BA 15d base 7 W	Incandescent BA 15d base 10 W (not XVP)	LED (2) BA 15d base	Flashing LED (2) BA 15d base	Incandescent BA 15d base 25 W	Halogen H1 base 70 W
Catalog number	12 V	DL1BEJ	DL1BLJ	–	–	–	–
	24 V	DL1BEB	DL1BLB	DL1BDBp	DL1BKBp	DL1 BRB	DL1 BRBH
	48 V	DL1BEE	DL1BLE	–	–	–	–
	120 V	DL1BEG	DL1BLG	DL1BDGp	DL1BKGP	DL1 BRG	–
	230 V	DL1BEM	DL1BLM	DL1BDMp	DL1BKMp	DL1 BRM	–

(1) Indicator banks XVP can be fitted with 5 W incandescent bulbs: see beacons XVDLS / XVE.

(2) To obtain the complete catalog number, replace the **p** by the number designating the color as follows: 1 = white, 3 = green, 4 = red, 5 = orange, 6 = blue, 8 = yellow.



Bulbs and LEDs		Beacons XVDLS / XVE	Indicator banks XVE			
Light source		Incandescent BA 15d base 5 W	Incandescent BA 15d base 5 W	LED (3) BA 15d base	Flashing LED (3) BA 15d base	"Flash" discharge tube, 0.8 Joule BA 15d base
Catalog number	24 V	DL1EDBS	DL1EDBS	DL2EDBp	DL1EKBp	DL6BB
	120 V	DL1EDGS	DL1EDGS	DL2EDGp	DL1EKGp	DL6BG
	230 V	DL1EDMS	DL1EDMS	DL2EDMp	DL1EKMp	DL6BM

(3) To obtain the complete catalog number, replace the **p** by the number designating the color as follows: 1 = white, 3 = green, 4 = red, 6 = blue, 8 = orange.



Mounting accessories		Beacons and indicator banks XVB / XVE		Indicator banks XVP		Rotating mirror beacon XVR
Description		Aluminum tube with integral black plastic fixing base Ø 25	Plastic tube with integral black plastic fixing base Ø 25	Aluminum tube with integral black plastic fixing base Ø 20	Aluminum tube with steel fixing bracket Ø 20	–
Diameter (mm)						
Support tubes	60 mm	XVEZ13	–	–	–	–
	100 mm	–	–	–	XVPC02T	–
	112 mm	–	–	XVPC02 (4)	–	–
	120 mm	XVBZ02	–	–	–	–
	140 mm	–	XVDC02	–	–	–
	250 mm	–	–	–	XVPC03T	–
	260 mm	–	–	XVPC03 (4)	–	–
	400 mm	–	–	–	XVPC04T	–
	410 mm	–	–	XVPC04 (4)	–	–
	420 mm	XVBZ03	–	–	–	–
	820 mm	XVBZ04	–	–	–	–
Fixing plates, black	for vertical support	XVBC12		XVPC12 (4)		XVR012
	for horizontal support	XVBZ01		–		XVR013

(4) To order an aluminum support tube with integral cream fixing base, add the letter **W** to the end of the catalog number (example: XVPC02**W**).

XAC

Pendant control stations
for control circuits
Ready to use

2



Type XAC A “Pistol grip”

Degree of protection		IP 65 / Nema 4, 4X			
Rated operational characteristics		AC 15 (240 V 3 A), DC 13			
Conventional thermal current		10 A			
Connection		Screw clamp terminals, 1 x 2.5 mm ² or 2 x 1.5 mm ²			
For control of		single-speed motors 		2-speed motors 	
Dimensions (mm)	W x H x D	52 x 295 x 71 (x 85 with ZA2BS44)		52 x 295 x 71 (x 85 with ZA2BS44)	
Number of operators	mechanically interlocked	2		2	
	Emergency stop	without	ZA2BS44	without	ZA2BS44
Catalog number		XACA201	XACA2013	XACA207	XACA2073



Type XAC A

For control of single-speed motors		
Dimensions (mm)	W x H x D	80 x 314 x 70 (x 90 with ZA2BS44)
Number of operators	mechanically interlocked between pairs	2
	Emergency stop	without
Catalog number		XACA271
		ZA2BS44
		XACA2713
		80 x 440 x 70 (x 90 with ZA2BS54)
		4
		without
		ZA2BS54
		XACA471
		XACA4713



For control of single-speed motors		
Dimensions (mm)	W x H x D	80 x 500 x 70 (x 90 with ZA2BS54)
Number of operators	mechanically interlocked between pairs	6
	Emergency stop	without
Catalog number		XACA671
		ZA2BS54
		XACA6713
		80 x 560 x 70
		8
		without
		XACA871



Stations for user assembly



2

Empty enclosures type XAC A

Number of holes	2	3	4	5	6	8	12
Catalog number	XACA02	XACA03	XACA04	XACA05	XACA06	XACA08	XACA12

Separate components (for mounting in enclosures XAC A)

Contact blocks

Single-speed N.O.	ZB2BE101
Single-speed N.C.	ZB2BE102

Contacts blocks for XAC A941p

Single-speed N.C. + N.O. + N.O. (1)	XENG1491
2-speed N.C. + N.O. + N.O. (2)	XENG1191
(1) simultaneous (2) staggered	

Contact blocks (for mounting in enclosure base)

N.O.	XACS101
N.C. + N.O.	XACS105

Booted operators

white	XACA9411
black	XACA9412

Mushroom head, latching

turn to release	30 mm	ZA2BS44
	40 mm	ZA2BS54

Mushroom head, latching, trigger action

turn to release	30 mm	ZA2BS834
	40 mm	ZA2BS844

Mushroom head, latching

key release	30 mm	ZA2BS74
	40 mm	ZA2BS14

Selector switch

2 pos. maintained	ZA2BD2
3 pos. maintained	ZA2BD3

Key switch

key no. 455	2 pos. maintained	ZA2BG4
	3 pos. maintained	ZA2BG5

Blanking plug

with seal and mounting nut	ZB2SZ3

Pilot light heads

white	ZA2BV01
green	ZA2BV03
red	ZA2BV04
yellow	ZA2BV05

Pilot light bodies 250 V max.

direct supply	ZB2BV006
direct supply, through resistor	ZB2BV007

Protective guard (for base mounted units)

For selector switch or mushroom head push button	XACA982

Legends, 30 x 40 mm	With symbols conforming to NF E 52-124						With text		
Catalog number	ZB2BY4901	ZB2BY4903	ZB2BY4907	ZB2BY4909	ZB2BY4913	ZB2BY4915	ZB2BY4930	ZB2BY2303	ZB2BY2304
								blank	
							white or yellow background		
Catalog number	ZB2BY2904	ZB2BY2906	ZB2BY2910	ZB2BY2912	ZB2BY2916	ZB2BY2918	ZB2BY2931		ZB2BY4101

Type BW

Pendant control station for control circuits
Ready for use

2



Type BW pendant station			
Degree of protection		IP 65 / NEMA & UL Type 4, 4X	
Rated operational characteristics		NEMA B600/P600	
Conventional thermal current		5 A	
Connection		Screw clamp terminals	
For control of		single-speed motors 	2-speed motor s 
Dimensions (mm)	W x H x D	56 x 119 x 75	56 x 119 x 75
Number of operators	mechanically interlocked	2	2
Catalog number	UP-DOWN	9001BW72Y	9001BW82Y
	FOR-REV	9001BW73Y	–
	ON-OFF (1)	9001BW74Y	–
	STAR T-STOP (1)	9001BW76Y	–

(1) Maintained contact.

Type BW pendant station accessories	
Hanger bracket and sealing kit	9001B350

Heavy duty pendant control stations
Stations for user assembly

Type SKYP



2

Type SKYP heavy duty pendant stations

Material		Polymeric	
Degree of protection		NEMA & UL Type 1, 3, 4, 4X and 13	
For outdoor use		UV protected	
	Size	Conduit Entrance Size	Catalog number
	2 Button	3/4"-14NPT	9001SKYP2
	4 Button	3/4"-14 NPT	9001SKYP4
	6 Button	1"-11-1/2 NPT	9001SKYP6
	8 Button	1-1/4"-11-1/2 NPT	9001SKYP8
	10 Button	1-1/4"-11-1/2 NPT	9001SKYP10



Push button units—2 button

Contact rating			
NEMA & UL Type A600/P600	10 A thermal	Single Speed—Momentary Interlocked	9001SKRU1
NEMA & UL Type B600	5 A thermal	Two Speed—Momentary Interlocked	9001SKRU2
		Three Speed—Momentary Interlocked	9001SKRU3
		Four Speed—Momentary Interlocked	9001SKRU4
		Five Speed—Momentary Interlocked	9001SKRU5



Double legend plates for opposing functions

For SKRU1 through SKRU05	Blank-Blank	9001SKN200
	Hoist: Up-Down	9001SKN201
	Trolley: East-West	9001SKN202
	Trolley: Fwd.-Rev.	9001SKN203
	Trolley: North-South	9001SKN204
	Bridge: Fwd.-Rev.	9001SKN205
	Bridge: East-West	9001SKN206
	Bridge: North-South	9001SKN207
	Start-Stop	9001SKN208
	Reset-Stop	9001SKN209

Control stations

Standard and heavy duty

2



Type B standard duty control stations

Number of Operators	Nameplate Markings and Features	Surface Mounting NEMA & UL Type 1	Watertight and Dusttight NEMA & UL Type 4
1	Stop (Mushroom Button)	9001BG103	9001BW151
	Stop (Lockout)	9001BG104	9001BW148
	Hand-Off-Auto (Selector Switch)	9001BG112	–
2	Start-Stop	9001BG201	9001BW240
	Start-Stop (Lockout on Stop)	9001BG204	9001BW241
	Up-Down	9001BG208	9001BW243
	Start-Stop (Maintained Contact)	9001BG215	9001BW255
3	Forward - Reverse - Stop	9001BG302	–
	Open - Close - Stop	9001BG303	–
	Up - Down - Stop	9001BG305	–



Type KY and SKY 30 mm control stations

Number of Operators	Nameplate Markings and Features	Die Cast Aluminum Type K Operators NEMA & UL Type 1, 4, 12, 13	Polymeric Type SK Operators NEMA & UL Type 1, 3, 4, 4X, 12, 13
1	Start	9001KYK11	9001SKY101
	Stop (Mushroom)	9001KYK13	9001SKY103
	To Stop - Break Glass (Red Enclosure)	9001KYK117	–
	Off - On (Selector Switch)	9001KYK110	9001SKY110
	Hand - Off - Auto (Selector Switch)	9001KYK111	9001SKY111
2	Start - Stop	9001KYK21	9001SKY201
	Up - Down	9001KYK25	9001SKY205
	Open - Close	9001KYK26	9001SKY206
3	Forward - Reverse - Stop	9001KYK31	9001SKY301
	Up - Down - Stop	9001KYK32	9001SKY302
	Open - Close - Stop	9001KYK33	9001SKY303

Heavy duty

Foot switches

2



DANGER

HAZARDOUS APPLICATIONS

Do not use foot switches on machines without point of operation protection.

Failure to follow this precaution will result in serious injury.



Fully shielded with oversized pedal shield, side shields, and safety door.



Type AW foot switch with top pedal shield and side shields



Type AW foot switch with oversized pedal shield and side shields



Type AW foot switch without pedal shield

Description	Features	Fully Shielded with Oversized Pedal Shield, Side Shields and Safety Door	With Oversized Pedal Shield and Side Shields	With Pedal Shield and Side Shields	Unshielded See Warning note (3)
		Catalog number	Catalog number	Catalog number	Catalog number
Single Pole (2) Double Throw	Spring Return With Mechanical Latch	AW117 —	AW132 —	AW2 AW7	AW1 —
Two Pole (2) Double Throw	Spring Return With Mechanical Latch	AW124 (1) —	AW133 —	AW14 AW15	AW13 —
Two Stage (2) (One pole each stage)	Spring Return With Mechanical Latch in 1st Stage With Mechanical Latch in 2nd Stage	AW119 — —	AW134 — —	AW6 AW9 AW10	AW5 — —
Four Stage (2) (One pole each stage)	Spring Return	AW123	—	AW22	AW21
Sinlge Pole Single Throw	Maintained Contact–Push On/Push Off	—	—	AW12	AW11

(1) 2 N.O. and 2 N.C. isolated, direct acting contacts.

(2) A single pole snap switch that contains two double break contact elements (1 N.O. and 1 N.C.) must be used on circuits of same polarity. A double pole snap switch contains two electrically separated sets of contact elements allowing use on circuits of opposite polarity. Each set that contains two double break contact elements (1 N.O. and 1 N.C.) must be used on circuits of same polarity.

(3) WARNING: These foot switches must not be used to operate machines or equipment where the possibility of operator injury exists. Typical uses include Emergency Stop functions, "Dead man" controls, signal functions (lights, bells, etc).



Type		Compact display units				
Display	Capacity	2 lines, 20 characters		4 lines, 20 characters		
	Type	Back-lit LCD green			Back-lit LCD 3 colors green, orange, red	Back-lit LCD green
Data entry		Via keypad with 8 keys (4 with changeable legends)				
Functions	Representation of variables	Alphanumeric				
Communication	Downloadable protocols	Uni-Telway, Modbus master				Modbus
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)				
DimensionsW x D x H		132 x 37 x 74 mm			132 x 37 x 74 mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium,		Twido, Nano, TSX Micro, Premium, Quantum, Momentum	Twido, Nano, TSX Micro, Premium, Quantum, Momentum	Tesys module U motor starters and Altivar drives
Supply voltage		5 VDC (2)		24 VDC	24 VDC	
Catalog number		XBTN200	XBTN400	XBTN410	XBTN401	XBTNU400

(1) Except XBTN200: alphanumeric screen.
(2) 5 VDC power supplied via PLC terminal port.

Terminals with matrix screen



Type		Terminals		
Display	Capacity	4 lines, 20 characters		
	Type	Back-lit LCD green		Back-lit LCD, 3 colors green, orange, red
Data entry		20 keys (12 configurable)		
Functions	Representation of variables	Alphanumeric		
Communication	Downloadable protocols	Uni-Telway, Modbus master		
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
DimensionsW x D x H		137 x 37 x 118 mm		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium,	Twido, Nano, TSX Micro, Premium, Quantum, Momentum	
Supply voltage		5 VDC (1)		24 VDC
Catalog number		XBTR400	XBTR410	XBTR411

(1) 5 VDC power supplied via PLC terminal port.

Graphic terminals

With keypad or touchscreen

Magelis



2

Type		With keypad			With touchscreen	
Display	Screen size	5.7"	10.4"		10.4"	
	Type	TFT, 256 colors			TFT, 256 colorswith resistive matrix tactile feedback (13 X 10 cells)	
Data entry	Soft function keys with LED	8	10		–	
	Static function keys with LED	10 with changeable legends	12 with changeable legends		–	
	Service keys	12	12		–	
	Alphan umeric keys	12 + 3 alphanumeric access			–	
	Touchscreen	no	no	no	yes	
Functions	Representation of v variables	Alphanumeric, bitmap, bargraph, gauge, potentiometer, selector				
	Recipes	125 records maxim um with 5000 parameter values maxim um				
	Curves	16 real-time				
	Alar m logs	Yes				
Communication	Downloadable protocols	Uni-TE, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs				
	Bus and networks	Fipway, Modbus Plus with PCMCIA card (except XBT F011110)				
Development software		XBT L1003 (on Windows 98, 2000 and XP)				
Dimensions W x D x H		220.3x88x265mm	296x91x332mm	197x92.6x147mm	296x91x222mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum				
RJ45 Ethernet TCP/IP connector		no	no	yes	no	yes
Supply voltage		24 VDC				
Catalog number		XBT F011110 / F011310	XBT F024510	XBT F024610	XBT F034510	XBT F034610

With 3.8" and 5.7" touchscreen open to NTIC⁽¹⁾



Type		Optimum			
Display	LCD screen size	3.8"		5.7"	
	Type	Back-lit STN monochrome, amber or red with 8 levels of gray		Back-lit STN monochrome , blue and white with 16 levels of gray	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad			
	Curves	yes, with log			
	Alarm logs	yes, incorporated			
Communication	Downloadable protocols	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus,	
	Bus and networks	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45	–	
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)			
Development software		Vijeo Designer VJDppTGSVppM (on Windows 2000 and XP)			
Dimensions W x D x H		130 x 41 x 104 mm		167.5 x 59.5 x 135 mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum			
Compact Flash card slot		no			
Character fonts		ASCII, (including European characters), Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese), Korean			
Built-in Ethernet TCP/IP		no	yes	no	
Supply voltage		24 VDC			
Catalog number		XBTGT1100	XBTGT1130	XBTGT2110	

(1) NTIC: New Technology for Information and Communication

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With 5.7" touchscreen open to NTIC⁽¹⁾

2



Type		Multifunction			
Display	LCD screen size	5.7"			
	Type	Back-lit STN, monochrome black and white with 16 levels of gray		STN, color 4096 colors	TFT, color 65,536 colors 16,384 if flashing
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad			
	Curves	yes, with log			
	Alarm logs	yes, incorporated			
Communication	Downloadable protocols	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP
	Bus and networks	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45
	Expansion	For Modbus Plus network connection			
	Third party protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)			
Development software		Vijeo Designer VJDpppTGSVppM (on Windows 2000 and XP)			
Dimensions W x D x H		167.5 x 59.5 x 135 mm			
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum			
Compact Flash card slot		yes			
Character fonts		ASCII, (including European characters), Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese), Korean			
Built-in Ethernet TCP/IP		no	yes	no	yes
Supply voltage		24 VDC			
Catalog number		XBTGT2120	XBTGT2130	XBTGT2220	XBTGT2330

With 7.5" touchscreen open to NTIC⁽¹⁾



Type		Multifunction		
Display	LCD screen size	7.5"		
	Representation of variables	STN, color 4096 colors	65,536 colors 16,384 if flashing	
	Curves	yes, with log		
	Alarm logs	yes, incorporated		
	Downloadable protocols	Modbus, Uni-TE, Modbus TCP/IP		
	Bus and networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ 45		
	Video input NTCS/PAL (59.5/50 Hz)			RCA connector (75 ohms)
	Audio input (microphone)	mini-jack connector		
Expansion	For Modbus Plus network connection			
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rodkwell Automation (Allen Bradley), Siemens (Simatic)		
Development software		Vijeo Designer VJDpppTGSVppM (on Windows 2000 and XP)		
DimensionsW x D x H		215 60 x 170 mm		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
Compact Flash card slot		yes		
Character fonts		ASCII, (including European characters), Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese), Korean		
Built-in EthernetTCP/IP		yes		
Supply voltage		24 VDC		
Catalog number		XBTGT4320	XBTGT4330	XBTGT4340

(1) NTIC: New Technology for Information and Communication

With 10.4" touchscreen open to NTIC⁽¹⁾



2

Type		Multifunction		
Display	LCD screen size	10.4"		
	Representation of variables	TFT, color 4096 colors	65,536 colors 16,384 if flashing	
	Curves	yes, with log		
	Alarm logs	yes, incorporated		
	Downloadable protocols	Modbus, Uni-TE, Modbus TCP/IP		
	Bus and networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45		
	Video input NTCS/PAL (59.5/50 Hz)			RCA connector (75 ohms)
	Audio input (microphone)			mini-jack connector
	Expansion	For Modbus Plus network connection		
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)		
Development software		Vijeo Designer VJDpppTGSVppM (on Windows 2000 and XP)		
Dimensions W x D x H		313 x 56 x 239 mm	270.5 x 57 x 212.5 mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
Compact Flash card slot		yes		
Character fonts		ASCII, (including European characters), Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese), Korean		
Built-in Ethernet TCP/IP		yes		
Supply voltage		24 VDC		
Catalog number		XBTGT5230	XBTGT5330	XBTGT5340

(1) NTIC: New Technology for Information and Communication

With 12.5" and 15" touchscreen open to NTIC⁽¹⁾



Type		Multifunction		
Display	LCD screen size	12.1"		15"
	Representation of variables	TFT, color 65,536 colors 16,384 if flashing		
	Curves	yes, with log		
	Alarm logs	yes, incorporated		
	Downloadable protocols	Modbus, Uni-TE, Modbus TCP/IP		
	Bus and networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ 45		
	Video input NTCS/PAL (59.5/50 Hz)	RCA connector (75 ohms)		
	Audio input (microphone)	mini-jack connector		
	Expansion	For Modbus Plus network connection		
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)		
Development software		Vijeo Designer VJDpppTGSVppM (on Windows 2000 and XP)		
Dimensions W x D x H		313 x 56 x 239 mm		395 x 60 x 294 mm
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
Compact Flash card slot		yes		
Character fonts		ASCII, (including European characters), Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese), Korean		
Built-in Ethernet TCP/IP		yes		
Supply voltage		24 VDC		
Catalog number		XBTGT6330	XBTGT6340	XBTGT7340

(1) NTIC: New Technology for Information and Communication 10.4"

Magelis

Accessories For display units and terminals



Connection cables	PC to Magelis transfer cables				
	2.5 m	2.5 m	2 m	2 m	2 m
Application	PC to all XBTN200, N400 and R400	PC to all XBT except XBTN200, N400, R400 and XBTGT11p0	PC to XBTGT1000		PC to XBTGT2000 to XBTGT7000
Type of connector	RJ45/MiniDin + SUBD 9	SUBD 9/SUBD 25	SUBD 9/MiniDin	USB/MiniDin	USB/USB
Physical link	RS 232C	RS 232C	TTL		TTL
Catalog number	XBTZ945 (1)	XBTZ915 (1)	XBTZG915	XBTZG925	XBTZG935

(1) Adaptor **SR2CBL06** for linking USB port of PC, to be used in conjunction with connecting cables XBTZ945 and XBTZ915 for connecting display units or terminals XBTN/R/H/P/E/HM/PM/F.

Connection cables	Telemecanique PLC connection cables (2.5 m)			
Application	XBTGT, XBTN200, N400, R400, NU400 to: Twido, Nano, TSX Micro, Premium	All XBT except XBTGT11p0, XBTN200, N400, R400, NU400 to: Twido, Nano, TSX Micro, Premium	Quantum	Momentum (port 1)
Type of connector	RJ45 / MiniDin	MiniDin / SUBD 25	SUBD 9 / SUBD 25	RJ45 / SUBD 25
Physical link	RS 485	RS 485	RS 232	RS 232
Catalog number	XBTZ9780	XBTZ968	XBTZ9710	XBTZ9711

Cordsets for direct connection XBTGT terminals to Telemecanique products							
Automation product type	Connector type (product side)	Protocol	XBT type terminal, physical link	On XBT port	Length	Catalog number	Weight kg
Twido, Modicon TSX Micro, Modicon Premium	Terminal port 8-way female mini-DIN	Uni-TE (V1/V2), Modbus	XBTGT11p0, RS485	COM1	2.5 m	XBTZ9780	0.180
			XBTGT2pp0-GT7340, RS485	COM2			
			XBTGT2pp0-GT7340, RS485	COM1	2.5 m	XBTZ968 + (2)	0.180
					5 m	XBTZ9681 + (2)	0.340
Modicon Premium with TXSSCY2160p	25-way female SUB-D	Uni-TE (V1/V2)	XBTGT11p0, RS232C	COM1	2.5 m	TSXPCX1031	0.170
			XBTGT2pp0-GT7340, RS232C	COM1	2.5 m	XBTZ918 + (1)	0.230
Modicon Quantum	9-way male SUB-D	Modbus	XBTGT11p0, RS485	COM1	2.5 m	XBTZ918 + (2)	0.230
			XBTGT2pp0-GT7340, RS232C	COM1	2.5 m	XBTZ9710 + (1)	0.210
					2.5 m	XBTZ9710 + (3)	0.210
					3.7 m	990NAA26320	0.290
Advantys STB	HE13 (NIM, network interface module)	Modbus	XBTGT11pp0, RS232C	COM1	2.5 m	XBTZ988 + (1)	0.220
			XBTGT2pp0-GT7340, RS232C	COM1	2 m	STBXCA4002	0.210
					2.5 m	XBTZ988 + (3)	0.220
Modicon Momentum M1	RJ45 (port 1 of Momentum M1)	Modbus	XBTGT11p0, RS232C	COM1	2.5 m	XBTZ9711 + (1)	0.210
			XBTGT2pp0-GT7340, RS232C	COM1	2.5 m	XBTZ9711 + (3)	0.210
TeSysU starter-controllers, ATV31/61/71 variable speed drives, ATS48 soft starters	RJ45	Modbus	XBTGT11p0, RS485	COM1	3 m	VW3A8306R30	0.060
			XBTGT2pp0-GT7340, RS485	COM2			

- (1) XBTZG939 adaptor to use with cordsets whose catalog number is followed by + (1).
 (2) XBTZG909 adaptor to use with cordsets whose catalog number is followed by + (2).
 (3) XBTZG919 adaptor to use with cordsets whose catalog number is followed by + (3).
 (4) Male connector with XBTZGI232, female connector with XBTZGI485.

Accessories

For display units and terminals

Magelis

2



Network cards	PCMCIA type III card			Module
Compatibility	XBTF	XBTF	XBTF	XBGTGT
Protocol	Modbus Plus	Fipway	Fipio bus	Modbus Plus
Catalog number	TSXMBP100	TSXFPP20	TSXFPP10	TSXCUSBMBP



Memory cards	PCMCIA type II card	Compact Flash card			
Compatibility	XBTF	XBGTGT (except XBGTGT1000 and XBGTGT2110)			
Capacity	16 Mb	128 Mb	256 Mb	512 Mb	1Gb
Catalog number	XBTMEM16	XBTZGM128	XBTZGM256	MPCYN00CFE00N	MPCYN00CF100N

Magelis

Industrial PCs “all in one” i PC Smart and i PC Compact ranges



	Magelis Smart i PC 12"		Magelis Smart i PC 15"	
Touchscreen	12" LCD TFT	12" LCD TFT	15" LCD TFT	15" LCD TFT
Resolution	SVGA 800 x 600		XGA 1024 x 768	
Front panel ports	1 x USB, protected by IP65 cover		–	
Processor	Celeron M@600MHz		VIA @667MHz	
RAM	256 MB → 1024 MB		256 MB → 512 MB	
Storage	Compact Flash 1 GB		Compact Flash 512 MB or 1 GB	
Reader	–		–	
Extension	1 or 2 x PCMCIA type I (or type III)		2 x PCMCIA type I (or type III)	
Ethernet port	2 x 10/100 RJ45		1 x 10/100 RJ45	
I/O ports	4 x USB, 1 x RS232, DIO		2 x USB, 2 x RS232, 2 x PS2, 1 x LPT1	
Power supply	AC 100–240V		DC 24 V	
Certifications	UL508, CSA		UL508, UL1604, CSA	
DimensionsW x D x H	313 x 239 x 60 mm		395 x 294 x 65 mm	
Operating System	Windows XPe SP2 installed in Compact Flash memory			
Applications	Internet Explorer	Internet Explorer	Internet Explorer	Internet Explorer
	Media Player	Media Player	Media Player	Media Player
	Office readers	Office readers	Office readers	Office readers
		Vijeo Designer RT (1)		Vijeo Designer RT (1)
Catalog number	MPCST21NAJ10T	MPCST21NAJ10R	MPCST52NAJ00T MPCST52NAJ10T	MPCST52NAJ10R

(1) RT: Run Time

	Magelis Compact i PC 12"		Magelis Compact i PC 15"		
Touchscreen	12" LCD TFT	12" LCD TFT	15" LCD TFT	15" LCD TFT	15" LCD TFT
Resolution	XGA 1024 x 768				
Front panel ports	1 x USB		–		
Processor	Celeron M@1.3GHz		VIA @667MHz OR Pentium 4 m 1.7GHz		
RAM	256 MB → 1024 MB		256 MB → 512 MB		
Internal drive	≥ 20 GB				
Reader	–		Diskette and CD-ROM		
Extension	1 x PCI, 1 x PCMCIA type I (or type III)		1 x PCI, 2 x PCMCIA type I (or type III)		
Ethernet ports	2 x 10/100 RJ45		1 x 10/100 RJ45		
I/O ports	4 x USB, 1 x RS232		2 x USB, 2 x RS232, 2 x PS2, 1 x LPT1		
Power supply	AC 100–240V				
Certifications	UL508, CSA		UL508, UL1604, CSA		
Dimensions W x D x H	313 x 239 x 100 mm		395 x 294 x 100 mm		
Applications		Vijeo Designer RT (1)		Vijeo Designer RT (1)	Vijeo Look RT/BT (2)
Windows 2000	MPCKT22NAA00N		MPCKT52NAA00N MPCKT55NAA00N		MPCKT52NAA00A MPCKT55NAA00B
Windows Professional	MPCKT22NAX00N	MPCKT22NAX00R	MPCKT52NAX00N MPCKT55NAX00N	MPCKT52NAX00R MPCKT55NAX00R	MPCKT52NAX00A MPCKT55NAX00B

(1) RT: Run Time

(2) RT: Run Time BT: Built Time

Accessories

Compact Flash card	
Capacity	Catalog number
512 Mb (empty) for Smart <i>i</i> PC or Compact <i>i</i> PC	MPCYN00CFE00N
Blank 1Gb Compact Flash for Smart <i>i</i> PC	MPCYN00CF100N
Compact Flash 1 GB for Smart <i>i</i> PC 15" loaded with Windows XPe SP2 and Web Applications	MPCYN00CF152T
Compact Flash 1 GB for Smart <i>i</i> PC 12" loaded with Windows XPe SP2 and Web Applications	MPCYN21CF100T
Compact Flash 1 GB for Smart <i>i</i> PC 15" loaded with Windows XPe SP2 and Vijeo Designer Run Time	MPCYN00CF152R
Compact Flash 1 GB for Smart <i>i</i> PC 15" loaded with Windows XPe SP2 and Vijeo Designer Run Time	MPCYN21CF100R

RAM memory expansion	
Capacity	Catalog number
512 Mb SO DIMM for 15" Smart <i>i</i> PC	MPCYK02RAM512
512 Mb SO DIMM for 12" Smart <i>i</i> PC	MPCYK05RAM512
1024 Mb SO DIMM for Smart and Compact <i>i</i> PC 12"	MPCYK22RA1024

Magelis

Modular Industrial PCs iPC Modular range



2

	Control box CPU		Front panel		
	102	402	Touch	Keypad	Touch/Keypad
Screen			15" LCD TFT	15" LCD TFT	15" LCD TFT
Resolution			XGA 1024 x 768	XGA 1024 x 768	XGA 1024 x 768
Interfaces			Touchscreen	Keypad/mouse	Keypad/mouse/touch
Front panel ports			PS2 and infrared		
Processor	Celeron M@1.3GHz/Pentium M @1.6GHz				
RAM	512 MB → 2 GB (maximum of 2 memory slots)				
Internal drive	≥ 40 GB				
Reader	combined DVD-R/ CD-RW drive available as an option				
Extension	1 x PCI				
	4 x PCI				
Ethernet ports	2 x PCMCIA type I (or 1 type III)				
	1 x 10/100 RJ45				
I/O ports	2 x USB, 2 x RS232, 2 x PS2, 1 x LPT1				
Power supply	AC 100–240 V or DC 24 V				
Certifications	UL508, UL1604, CSA		UL508, UL1604, CSA		
DimensionsW x D x H	290 x 290 x 130 mm	290 x 290 x 192 mm	460 x 340 x 45 mm	480 x 370 x 45 mm	480 x 370 x 45 mm
Operating system	Windows 2000 or XP pro pre-installed				
Catalog number	MPCEN02Npb00N	MPCDN02Npb00N	MPCNT50NNN20N	MPCNA50NNN20N	MPCNB50NNN20N
	MPCEN05Npb00N	MPCDN05Npb00N			

Power supply: Replace p with A for AC 100–240 V or with D for DC 24 V.

Operating system: Replace b with X for order the model with Windows XP pro pre-installed or with A to order the model with Windows 2000 pre-installed.

i Display external screen



Separate components	
Display with 15" TS AC	External display with 15" color TFT LCD, XGA resolution (1024 x 768), Touchscreen, AC supply
Catalog number	MPCYT50NAN00N



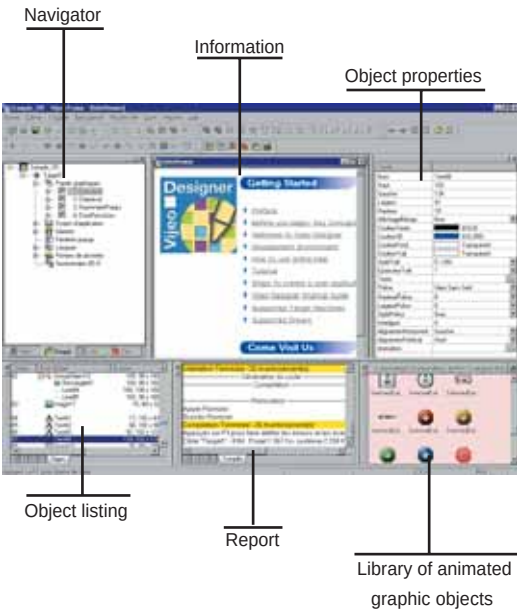
Configuration software

XBTG / XBTGT
Vijeo Designer™



Type	Configuration software			
Compatibility	XBTG / XBTGT / Smart iPC / Compact iPC			
Operating system	Windows 2000 and XP			
Version	Single (1 station)	Group (3 stations)	Team (10 stations)	Facility (unlimited licenses)
Catalog number for PC CD-ROM	–	–	–	–
Including PC cable	VJDSNDTGSVppM	VJDGNDTGSVppM	VJDTNDTGSVppM	VJDFNDTGSVppM
	VJDSSDTGSV ppM			
	VJDSUDTGSVppM			
	VJDSUDTGAVppM			

Note: pp represents the version of the software.



Vijeo Designer for Magelis touchscreen
graphic terminals XBTG / XBTGT

The Vijeo Designer configuration software can be used to create operator dialog applications designed for controlling automation systems for all the Magelis range of New Technology (NTIC) terminals: XBTG / XBTGT / Smart iPC / Compact iPC.

Configuration

The Vijeo Designer configuration software enables operator dialog projects to be easily and quickly performed due to advanced ergonomics using multiple configuration windows. Vijeo Designer video solutions allow you to view real-time or recorded video.

Vijeo Designer configuration software also offers complete application management tools:

- Project creation, a project being one or several applications.
- WEB Gate remote access function to handle your HMI applications in complete security via a simple internet navigator using Ethernet architecture.
- Password and user group management.
- Recipe editor (32 groups of 64 recipes of 1024 ingredients max.).
- Cross-referencing of application variables.
- Application synoptics documentation.
- A simulation mode for easy testing of the application from the design office.
- Powerful graphics editor for easy creation of synoptics (more than 30 pre-configured animated objects).
- Data sharing (up to 300 variables between 8 panels).
- Support of 34 languages.
- Direct link to PLC symbol files (Unity, PL7, Concept, TwidoSoft, ProWORX, ModSoft).
- Upload capabilities: project can be backup on terminal to ease future maintenance.
- User friendly tool to recover data from terminal.

Vijeo Citect

Control software

2



Vijeo Citect, which will be available by the end of 2006, is the system of choice when you require a scalable, flexible and reliable system for any industrial automation monitoring and control application. Take the stress out of your operations by ensuring that vital production data will always be available. Easily expand or modify your system as your requirements change.

Whether you need an easy-to-use operator interface with networked reporting capability, or an entire client / server HMI / SCADA system spanning multiple plants on different continents you can do it all with Vijeo Citect.

Powerful visualization

- Windows XP-style buttons
- Rounded rectangles
- Gradient files

Performances

- Multi-Processor/Hyper-Threaded Support
- Independent Server Control

Usability

- Multi-Project Find & Replace
- Computer Setup Editor

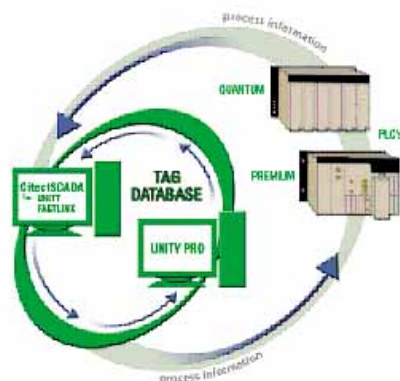
Security

- Ensures that changes to the control system are implemented by authorized people
- Secures a project or a whole system from change between visits
- Retains complete operability of the system at runtime

Integration brings productivity along the system life cycle

- Define the objects you need
- Develop in concurrent the PLC and the SCADA applications
- Connect Vijeo Citect to the Unity Pro Project
- Create Vijeo Citect variables from Unity Pro
- Setup OFS (OPC Factory Server) as the I/O server
- Synchronize periodically the data bases during the commissioning phase
- Automatic consistency check managed by OFS in run-time

Vijeo Citect is characterized by its flexibility, allowing customers to build the supervision solution that corresponds to their needs.



Evaluation License (free download) allows the user to develop his application, and test it for 10 minutes in online mode. This system runs in standalone only.

Development workshop (VJC1099●●) is required for delivery of the physical components that make up an order such as the CD, hardware key, installation guide and packaging box. Either a USB or Parallel hardware key is needed to operate the server. The key is used to store floating client licenses. The key is also programmed to operate to a specific version of software and controls the number of points that can be viewed.

- Each server requires a hardware key (USB or parallel) in order to operate.
- The key is also used to store floating client licenses
- The key is programmed to operate on up to a particular version
- The key controls the number of points that can be viewed

Server licenses (VJC1011●●) are purchased by number of points that are required to be displayed (not I/O). Each license includes a Control Client and a large number of drivers to communicate to most of the PLC available on the market. Add on components such as specialty drivers can be purchased separately.

Client licenses are generally purchased using the same point count as the Server to which they are connected. Four types of Clients are available:

- Control Clients (VJC1020●●)
- View Clients (VJC1030●●)
- Web Control Clients (VJC1022●●)
- Web View Clients (VJC1032●●)

Client licenses for operators should be static meaning that they have their own physical key that plugs into the back of the PC. This ensures access to the control systems. Users that do not need to use the client all the time may purchase floating licenses. The software can be loaded on many different PCs, but connections will only be allowed up until the number purchased has been reached.

Redundancy Client licenses (VJC10●●88) are only available for the standby server in a redundant configuration and are used to ensure the user always has the number of clients available that they have purchased.

An upgrade offer (VJC10●●●●-yy) for expanding client and server licenses to the next Points Count.

- If the server (or client) is upgraded, the keys must be reprogrammed.

Additional drivers (VJC107●●●/VJC305●●●) that can be used to implement the access to some specific PLC and DCS systems.

Vijeo Citect Lite (VJC3111●●) is the stand-alone version of Vijeo Citect.

Please contact your local Schneider Electric sales representative regarding specific part numbers for ordering.

Purchase of server and client licenses includes Bronze level support which provides access to technical support, software patches and updates for a period of one year.

To upgrade to Gold support or purchase additional support beyond the first year of ownership, please contact Schneider Electric Services at 800-468-5342 or 978-975-9079.

Embedded Web servers and gateways

FactoryCast

2



Implementation software	FactoryCast	FactoryCast HMI
Compatibility with Telemecanique PLCs	TSX Micro, Premium, Quantum	Premium, Quantum
Operating system	Windows 2000 and XP	
Application	Configuration of FactoryCast modules	Development and implementation of FactoryCast HMI application
Catalog number for multilingual PC CD-ROM	Included with FactoryCast modules	TLXCDFCHMIV1M

FactoryCast

Remote "Ready to use" diagnostic functions using simple Internet browser

- Secure access to the diagnostics system and application
- Numerical or graphical display and adjustment of data
- E-mailing
- Open to customisation and creation of Web pages for diagnostics suited to your needs
- Library of animated graphic objects
- SOAP/XML server interface (Web services)

FactoryCast HMI

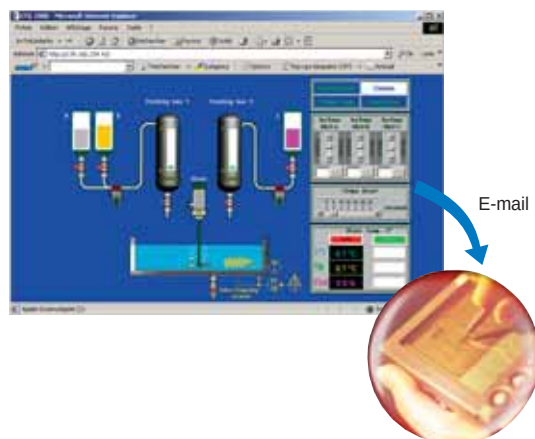
Identical diagnostic functions as FactoryCast + Core HMI functions embedded in a PLC module:

- Real-time database and acquisition of PLC data (1000 variables)
- Calculations for pre-processing of data
- Advanced alarm management with E-mailing
- Archiving of data in relational databases (SQL, Oracle, MySQL)
- Local Data Logging
- Recipe management
- HTML based Reporting function
- A user customizable Web server for creating an interface fully adapted to your needs
- Library of animated graphic objects
- SOAP/XML client/server interface (Web services)

FactoryCast Gateway

New offer comprising "all in one" Web intelligent gateways integrated in a stand-alone enclosure:

- Communications network interfaces and Modbus or Uni-Telway serial links
- Remote access function, RAS server, Router
- Notification of alarms function by E-mail
- A user customizable Web server for creating an interface fully adapted to your needs
- Library of animated graphic objects
- SOAP/XML client/server interface (Web services)



FactoryCast Web server modules



Automation platform		TSX Micro	Premium			Quantum		Modbus	Uni-TE
Data rate		10/100 Mbit/s	10 Mbit/s	10/100 Mbit/s		10/100 Mbit/s		10/100 Mbit/s	10/100 Mbit/s
Services	Modbus TCP/IP Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethernet	Uni-TETCP/IP Protocol	Yes	Yes	Yes	Yes	–	–	–	Yes
	Ethway Protocol	–	Yes	–	–	–	–	–	–
	Serial Protocol	Uni-TE	–	–	–	–	–	Modbus Master	Uni-Telway slave
	Modem Protocol	PPP, PAP	–	–	–	–	–	PPP, PAP	PPP, PAP
	Global Data	–	–	Yes	–	Yes	–	–	–
	I/O Scanning	–	–	Yes	–	Yes	–	Yes	Yes
	Services gateway/RAS	Yes	–	–	–	–	–	Yes	Yes
Web server	Standard Web services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SOAP/XML Server	FactoryCast HMI services	–	–	–	Yes	–	Yes	–	–
	Web services	Yes	–	Yes	Yes	Yes	Yes	Yes	Yes
Catalog number		TSXETZ510	TSXETY110WS	TSXETY5103	TSXWMY100	140NOE77111	140NWM10000	TSXETG1000	TSXETG1010

Automation

Ingenious solutions for all your automation system applications

Perfect suitability for all your applications thanks to a complete offer... from simple relays to automation platforms.

Zelio®

Relays and Zelio Logic 2 programmable smart relays



Zelio relay range

Zelio Relay plug-in relays, Zelio Control control and measurement relays, Zelio Count counters, ZelioTime timing relays: These ranges offer *compactness* and *simplicity*.

Zelio Logic 2 programmable smart relays

Designed for management of simple automation systems comprising 10 to 40 I/O. Compact or modular, Zelio Logic 2 offers *flexibility* and *simplicity*.

Twido™

Programmable controllers



Twido, ideal for simple installations and small machines: standard applications comprising from 10 to up to 256 I/O (max). Compact or modular, Twido offers *flexibility* and *simplicity*.

Modicon

Automation platforms and distributed I/Os



Modicon M340, ideal for complex OEM machine control applications that require small size, powerful capabilities and highly integrated functionality.

- 3 built-in communications ports (Ethernet, Modbus, CANopen)
- High density 64 pt modules in standard widths
- Hot swap modules ease maintenance
- Unity Software family development



Modicon Premium, ideal for manufacturing applications. Outstanding *flexibility* for distributed architectures and *integration* of advanced automation system functions.

- New high performance processors
- CANopen machine bus connection, from entry level



Modicon Quantum, ideal for process applications. *High level of performance* for process control and architecture availability.

- New high performance processors
- Onboard Ethernet
- Memory expansion option using PCMCIA
- USB connection



Modicon Momentum M1/M1E, ideal for distributed architectures. *Compactness* and *flexibility* for control and I/O distribution on Ethernet.

The essential guide

A simplified selection guide enabling you to quickly select all the products required to develop an automation system... from a small simple machine to a complex installation.

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- b Zelio Control** - Control and measurement relays 3/8 and 3/9
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- b ConneXium™** - Ethernet Switches 3/54 and 3/55
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Unity

Taking you into a new world of automation

At the heart of the Telemecanique offer, Unity is the new generation software and hardware automation platform.

b Open, based on universal Microsoft Visio, VBA and XML software standards, Unity is designed to allow your tools to work together.

b Smart,
Unity provides a common IEC development environment for Modicon Premium, Atrium and Quantum platforms.
With Unity, you can reduce development cycles and improve quality by reusing standard programs.

b Flexible,
the new range of Modicon Premium, Atrium and Quantum processors offers extended memory capabilities and greater execution performance.



With Transparent Ready® Schneider Electric has applied market standards to its automation system architectures, making data exchange even easier. Smart and simple to use, the Telemecanique software offer ensures maximum efficiency in terms of application development and maintenance, while its high performance Telemecanique PLCs help to achieve optimum installation availability and productivity. Committed to maximizing your investment over the long-term, Schneider Electric makes it easy for you to develop your applications with complete peace of mind.

Zelio® Relay

Plug-in relays Interface relays



3

Type of relay		Interface relays RSB		
Contact characteristics				
Thermal current I _{th} in A (temperature ≤55°C)		8	12	16
Number of contacts		2 “C/O”	1 “C/O”	1 “C/O”
Contact material		AgNi	AgNi	AgNi
Switching voltage, min. / max.		5 / 250 VAC/DC		
Switching capacity, min. / max. (mA / VA)		5 / 2000	5 / 3000	5 / 4000
Coil characteristics				
Average consumption, inrush,		0.75 VA / 0.45 W		
Permissible voltage variation		0.8/0.85–1.1 U _n (50 / 60Hz or =)		
Catalog number		(1)	(1)	(1)
Coil supply voltage on DC	6 VDC	RSB2A080RD	RSB1A120RD	RSB1A160RD
	12 VDC	RSB2A080JD	RSB1A120JD	RSB1A160JD
	24 VDC	RSB2A080BD	RSB1A120BD	RSB1A160BD
	48 VDC	RSB2A080ED	RSB1A120ED	RSB1A160ED
	60 VDC	RSB2A080ND	RSB1A120ND	RSB1A160ND
	110 VDC	RSB2A080FD	RSB1A120FD	RSB1A160FD
Coil supply voltage on AC	24 VAC	RSB2A080B7	RSB1A120B7	RSB1A160B7
	48 VAC	RSB2A080E7	RSB1A120E7	RSB1A160E7
	120 VAC	RSB2A080F7	RSB1A120F7	RSB1A160F7
	220 VAC	RSB2A080M7	RSB1A120M7	RSB1A160M7
	230 VAC	RSB2A080P7	RSB1A120P7	RSB1A160P7
	240 VAC	RSB2A080U7	RSB1A120U7	RSB1A160U7

Sockets for relays

Type of socket		For interface relays RSB		
Mixed input/output type sockets with location for protection module				
		–	–	–
		–	–	–
Separate input/output type sockets with location for protection module				
		RSZE1S48M	RSZE1S35M	RSZE1S48M (2)
Protection modules				
	Diode	6–230 VDC	RZM040W	
	RC circuit	24–60 VAC	RZM041BN7	
		110–240 VAC	RZM041FU7	
	Varistor	6–24 VAC/DC	RZM021RB (3)	
		24–60 VAC/DC	RZM021BN (3)	
		110–230 VAC/DC	RZM021FP (3)	
		24 VAC/DC	–	
		240 VAC/DC	–	
	Multifunction timer module	24–230 VAC/DC	–	
	Accessories			
Plastic maintaining clamp		RSZR215		
Metal maintaining clamp		–		
Label for socket		RSZL300		
Bus jumper	2 poles	–		
DIN rail adapter 		–		
Panel mounting adapter		–		

(1) Catalog numbers for relays without socket, for relays with socket, add the letter **S** to the end of the selected catalog number. (Example: RSB2A080B7 becomes RSB2A080B7**S**).

(2) To use RSB1A160pp relay with socket, terminals must be interconnected.

(3) With LED.

For additional information, reference catalog 8501CT0601.

Miniature relays



Type of relay		Miniature relays RXM			
Contact characteristics					
Thermal current I _{th} in A (temperature ≤55°C)		12	10	6	3
Number of contacts		2 "C/O"	3 "C/O"	4 "C/O"	4 "C/O"
Contact material		AgNi	AgNi	AgNi	AgAu
Switching voltage, min. / max.		12 / 250 VAC/DC			
Switching capacity, min. / max. (mA / VA)		10 / 3000	10 / 2500	10 / 1500	2 / 1500
Coil characteristics					
Average consumption, inrush,		1.2 VA / 0.9 W			
Permissible voltage variation		0.8–1.1 U _n (50 / 60Hz or =)			
Catalog number		(1)	(1)	(1)	(1)
Coil supply voltage on DC	6 VDC	–	–	–	–
	12 VDC	RXM2AB2JD	RXM3AB2JD	RXM4AB2JD	RXM4GB2JD
	24 VDC	RXM2AB2BD	RXM3AB2BD	RXM4AB2BD	RXM4GB2BD
	48 VDC	RXM2AB2ED	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED
	60 VDC	–	–	–	–
	110 VDC	RXM2AB2FD	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED
Coil supply voltage on AC	24 VAC	RXM2AB2B7	RXM3AB2B7	RXM4AB2B7	RXM4GB2B7
	48 VAC	RXM2AB2E7	RXM3AB2E7	RXM4AB2E7	RXM4GB2E7
	120 VAC	RXM2AB2F7	RXM3AB2F7	RXM4AB2F7	RXM4GB2F7
	220 VAC	–	–	–	–
	230 VAC	RXM2AB2P7	RXM3AB2P7	RXM4AB2P7	RXM4GB2P7
	240 VAC	–	–	–	RXM4GB2U7

3

Sockets for relays

Type of socket			For miniature relays RXM			
Mixed input/output type sockets with location for protection module						
			RXZE2M114 (2)	–	RXZE2M114	RXZE2M114
			RXZE2M114M (2)	–	RXZE2M114M	RXZE2M114M
Separate input/output type sockets with location for protection module						
			RXZE2S108M	RXZE2S111M	RXZE2S114M	RXZE2S114M
Protection modules						
	Diode	6–230 VDC	RXM040W			
	RC circuit	24–60 VAC	RXM041BN7			
		110–240 VAC	RXM041FU7			
	Varistor	6–24 VAC/DC	RXM021RB			
		24–60 VAC/DC	RXM021BN			
		110–230 VAC/DC	RXM021FP			
		24 VAC/DC	–			
		240 VAC/DC	–			
	Multifunction timer module	24–230 VAC/DC	–			
Accessories						
Plastic maintaining clamp			RXZR335			
Metal maintaining clamp			RXZ400			
Label for socket			RXZL420 (except RXZE2M114)			
Bus jumper		2 poles	RXZS2			
DIN rail adapter 			RXZE2DA			
Panel mounting adapter			RXZE2FA			

(1) Catalog numbers for relays with LED, for relays without LED, replace the number 2 in the catalog number by 1. (Example: RXM2AB2JD becomes RXM2AB1JD).

(2) Thermal current Ith: 10 A.



Type of relay		Universal relays RUM				
3	Contact characteristics	Cylindrics			Faston	
	Thermal current I _{th} in A (temperature ≤55°C)	10	10	3	10	10
	Number of contacts	2 "C/O"	3 "C/O"	3 "C/O"	2 "C/O"	3 "C/O"
	Contact material	AgNi	AgNi	AgAu	AgNi	AgNi
	Switching voltage, min. / max.	12 / 250 VAC/DC				
	Switching capacity, min. / max. (mA / VA)	10 / 2500	10 / 2500	3 / 750	10 / 2500	10 / 2500
	Coil characteristics					
	Average consumption, inrush,	2–3 VA / 1.4 W				
	Permissible voltage variation	0.8–1.1 U _n (50 / 60Hz or =)				
	Catalog number					
	Coil supply voltage on DC	6 VDC	–	–	–	–
		12 VDC	RUMC2AB2JD	RUMC3AB2JD	–	RUMF2AB2JD RUMF3AB2JD
		24 VDC	RUMC2AB2BD	RUMC3AB2BD	RUMC3GB2BD	RUMF2AB2BD RUMF3AB2BD
		48 VDC	RUMC2AB2ED	RUMC3AB2ED	RUMC3GB2ED	RUMF2AB2ED RUMF3AB2ED
		60 VDC	–	–	–	–
		110 VDC	RUMC2AB2FD	RUMC3AB2FD	–	RUMF2AB2FD RUMF3AB2FD
	Coil supply voltage on AC	24 VAC	RUMC2AB2B7	RUMC3AB2B7	RUMC3GB2B7	RUMF2AB2B7 RUMF3AB2B7
		48 VAC	RUMC2AB2E7	RUMC3AB2E7	RUMC3GB2E7	RUMF2AB2E7 RUMF3AB2E7
		120 VAC	RUMC2AB2F7	RUMC3AB2F7	RUMC3GB2F7	RUMF2AB2F7 RUMF3AB2F7
		220 VAC	–	–	–	–
		230 VAC	RUMC2AB2P7	RUMC3AB2P7	RUMC3GB2P7	RUMF2AB2P7 RUMF3AB2P7
		240 VAC	–	–	–	–

Sockets for relays

Type of socket			For universal relays RUM				
Mixed input/output type sockets with location for protection module			RUZC2M	RUZC3M	RUZC3M	–	–
			–	–	–	–	–
Separate input/output type sockets with location for protection module			RUZSC2M	RUZSC3M	RUZSC3M	RUZSF3M	RUZSF3M
Protection modules							
	Diode	6–230 VDC	RUW240BD				
	RC circuit	24–60 VAC	–				
		110–240 VAC	RUW241P7				
	Varistor	6–24 VAC/DC	–				
		24–60 VAC/DC	–				
		110–230 VAC/DC	–				
		24 VAC/DC	RUW242B7				
		240 VAC/DC	RUW242P7				
	Multifunction timer module	24–230 VAC/DC	RUW101MW				
Accessories							
Plastic maintaining clamp			–				
Metal maintaining clamp			RUZC200				
Label for socket			RUZL420				
Bus jumper		2 poles	RUZS2				
DIN rail adapter 			–				
Panel mounting adapter			–				

For additional information, reference catalog 8501CT0601.

Power relays



Type of relay			Power relays RPM				RPF	
Contact characteristics								
Thermal current I _{th} in A (temperature ≤55°C)			15	15	15	15	30	30
Number of contacts			1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	2 "N.O."	2 "C/O"
Contact material			AgNi	AgNi	AgNi	AgNi	AgSnO ₂	AgSnO ₂
Switching voltage, min. / max.			12 / 250 VAC/DC			12 / 250 VAC/DC		
Switching capacity, min. / max. (mA / VA)			100 / 3750	100 / 3750	100 / 3750	100 / 3750	100 / 7200	100 / 7200
Coil characteristics								
Average consumption, inrush,			0.9 VA / 0.7 W	1.2 VA / 0.9 W	1.5 VA / 1.7 W	1.5 VA / 2 W	4 VA / 1.7 W	
Permissible voltage variation								
Catalog number			(1)	(1)	(1)	(1)	–	–
Coil supply voltage on DC	6 VDC	–	–	–	–	–	–	–
	12 VDC	RPM12JD	RPM22JD	RPM32JD	RPM42JD	RPF2AJD	RPF2BJD	
	24 VDC	RPM12BD	RPM22BD	RPM32BD	RPM42BD	RPF2ABD	RPF2BBD	
	48 VDC	RPM12ED	RPM22ED	RPM32ED	RPM42ED	–	–	
	60 VDC	–	–	–	–	–		
	110 VDC	RPM12FD	RPM22FD	RPM32FD	RPM42FD	RPF2AFD	RPF2BFD	
Coil supply voltage on AC	24 VAC	RPM12B7	RPM22B7	RPM32B7	RPM42B7	RPF2AB7	RPF2BB7	
	48 VAC	RPM12E7	RPM22E7	RPM32E7	RPM42E7	–	–	
	120 VAC	RPM12F7	RPM22F7	RPM32F7	RPM42F7	RPF2AF7	RPF2BF7	
	220 VAC	–	–	–	–	–	–	
	230 VAC	RPM12P7	RPM22P7	RPM32P7	RPM42P7	RPF2AP7	RPF2BP7	
	240 VAC	–	–	–	–	–	–	

Sockets for relays

Type of socket			For power relays RPM				For power relays RPF	
Mixed input/output type sockets with location for protection module			RPZF1	RPZF2	RPZF3	RPZF4	–	
			–	–	–	–	–	
Separate input/output type sockets with location for protection module			–	–	–	–	–	
Protection modules			1 and 2 poles		3 and 4 poles			
Diode	6–230 VDC	RXM040W	RUW240BD			–		
	RC circuit	24–60 VAC	RXM041BN7	–			–	
Varistor	110–240 VAC	RXM041FU7	RUW241P7			–		
	6–24 VAC/DC	RXM021RB	–			–		
	24–60 VAC/DC	RXM021BN	–			–		
	110–230 VAC/DC	RXM021FP	–			–		
	24 VAC/DC	RUW242B7	–			–		
	240 VAC/DC	–	RUW242P7			–		
	Multifunction timer module	24–230 VAC/DC	–	RUW101MW			–	
Accessories								
Plastic maintaining clamp			–				–	
Metal maintaining clamp			RPZF1 (for 1 pole relays)				–	
Label for socket			–				–	
Bus jumper			2 poles		–			–
DIN rail adapter			RPZ1DA	RXZE2DA	RPZ3DA	RPZ4DA	–	
Panel mounting adapter			RPZ1FA	RXZE2FA	RPZ3FA	RPZ4FA	–	

(1) Catalog numbers for relays with LED, for relays without LED, replace the number 2 in the catalog number by 1 (Example: RPM12B7 becomes RPM11B7).
(2) With LED.

For additional information, reference catalog 8501CT0601.

Interfacing

General purpose relays

Plug-in relays



Plug-in relays		Tube type termination		Spade type termination	
Resistive rating (@ 120 VAC)		10 A	10 A	15 A	15 A
Number of Form C contacts		2	3	2	3
Contact material		Silver Nickel	Silver Nickel	Silver Cadmium Oxide	Silver Cadmium Oxide
Average consumption, inrush	VAC coils	3.6 VA	3.6 VA	3.6 VA	3.6 VA
	VDC coils	1.5 W	1.5 W	1.5 W	1.5 W
Voltage range	VAC coils	+10 to -15%	+10 to -15%	+10 to -15%	+10 to -15%
	VDC coils	+10 to -25%	+10 to -25%	+10 to -25%	+10 to -25%
Catalog number	24 VAC	8501KP12V14	8501KP13V14	8501KU12V14	8501KU13V14
	120 VAC	8501KP12V20	8501KP13V20	8501KU12V20	8501KU13V20
	240 VAC	8501KP12V24	8501KP13V24	8501KU12V24	8501KU13V24
	12 VDC	8501KPD12V51	8501KPD13V51	8501KUD12V51	8501KUD13V51
	24 VDC	8501KPD12V53	8501KPD13V53	8501KUD12V53	8501KUD13V53
	110 VDC	8501KPD12V60	8501KPD13V60	8501KUD12V60	8501KUD13V60
	Relay socket	8501NR51	8501NR61	8501NR82	8501NR82
	Hold down clip	8501NH51	8501NH61	8501NH82	8501NH82

Miniature plug-in relays



Miniature plug-in relays		Spade type termination			
Resistive rating (@ 120 VAC)		15 A	10 A	10 A	10 A
Number of Form C contacts		1	2	3	4
Contact material		Silver Cadmium Oxide	Silver Cadmium Oxide	Silver Cadmium Oxide	Silver Cadmium Oxide
Average consumption, inrush	VAC coils	1.52 VA	2.2 VA	2.9 VA	3.7 VA
	VDC coils	0.7 W	0.9 W	1.0 W	1.0 W
Voltage range	VAC coils	+10 to -15%	+10 to -15%	+10 to -15%	+10 to -15%
	VDC coils	+10 to -20%	+10 to -20%	+10 to -20%	+10 to -20%
Catalog number	24 VAC	8501RS41V14	8501RS42V14	8501RS43V14	8501RS44V14
	120 VAC	8501RS41V20	8501RS42V20	8501RS43V20	8501RS44V20
	12 VDC	8501RSD41V51	8501RSD42V51	8501RSD43V51	8501RSD44V51
	24 VDC	8501RSD41V53	8501RSD42V53	8501RSD43V53	8501RSD44V53
	Relay socket	8501NR41	8501NR42	8501NR43	8501NR34
	Hold down clip	–	8501NH42	8501NH42	8501NH42

For additional information, reference catalog 8501CT0601.

Miniature plug-in relays



Miniature plug-in relays		Spade type termination		
Resistive Rating (@ 120 VAC)		1 A	3 A	5 A
Number of Form C contacts		4	4	4
Contact material		Bifurcated Fine Silver Gold Flashed	Fine Silver Gold Flashed	Silver Cadmium Oxide
Average consumption,inrush	VAC coils	1.2 VA	1.2 VA	1.2 VA
	VDC coils	0.9 W	0.9 W	0.9 W
Voltage range	VAC coils	+10 to -15%	+10 to -15%	+10 to -15%
	VDC coils	+10 to -20%	+10 to -20%	+10 to -20%
Catalog number	24 VAC	8501RS24V14	8501RS4V14	8501RS14V14
	120 VAC	8501RS24V20	8501RS4V20	8501RS14V20
	12 VDC	8501RSD24V51	8501RSD4V51	8501RSD14V51
	24 VDC	8501RSD24V53	8501RSD4V53	8501RSD14V53
	Relay socket	8501NR45	8501NR45	8501NR45
	Hold down clip	8501NH45	8501NH45	8501NH45

3

Power relays



Power relays		VAC rated contacts				
Resistive rating (@ 300 VAC)		30 A	30 A	30A	30 A	30 A
Resistive rating (@ 600 VAC)		10 A	5 A	10 A	5 A	5 A
Single phase horsepower rating		2	1.5	2	1.5	1.5
Contact arrangement		1 N.O.	2 N.O.	1 N.C.	1 N.C. & 1 N.O.	2 N.C. & 2 N.O.
Contact material		Silver Cadmium Oxide				
Average consumption,inrush	VAC coils	10 VA	10 VA	10 VA	10 VA	10 VA
	VDC coils	2 W	2 W	2 W	2 W	2 W
Voltage range	VAC coils	+10 to -15%	+10 to -15%	+10 to -15%	+10 to -15%	+10 to -15%
	VDC coils	+10 to -20%	+10 to -20%	+10 to -20%	+10 to -20%	+10 to -20%
Catalog number	24 VAC	8501CO6V14	8501CO7V14	8501CO8V14	8501CO15V14	8501CO16V14
	120 VAC	8501CO6V20	8501CO7V20	8501CO8V20	8501CO15V20	8501CO16V20
	208 VAC	8501CO6V08	8501CO7V08	8501CO8V08	8501CO15V08	8501CO16V08
	240 VAC	8501CO6V24	8501CO7V24	8501CO8V24	8501CO15V24	8501CO16V24
	277 VAC	8501CO6V04	8501CO7V04	8501CO8V04	8501CO15V04	8501CO16V04
	480 VAC	8501CO6V29	8501CO7V29	8501CO8V29	8501CO15V29	8501CO1V29
	24 VDC	8501CDO6V53	8501CDO7V53	8501CDO8V53	8501CDO15V53	8501CDO16V53

For additional information, reference catalog 8501CT0601.

Zelio Analog

Analog Interface Universal Thermocouple



3	Type	Thermocouple				
	Temperature rang e	0 to 150 °C 32 to 302 °F	0 to 300 °C 32 to 572 °F	0 to 600 °C 32 to 1112 °F	0 to 600 °C 32 to 1112 °F	0 to 1200 °C 32 to 2192 °F
	Output range	0–10 V / 0–20 mA - 4–20 mA Switchable				
	Dimensions H xW x D	80 x 22.5 x 80 mm				
	Voltage	24 VDC - Non isolated				
	Catalog number	RMTJ40BD	RMTJ60BD	RMTJ80BD	RMTK80BD	RMTK90BD

Universal PT 100



Type	PT 100				
Temperature rang e	-40 to 40 °C -40 to 104 °F	-100 to 100 °C -148 to 212 °F	0 to 100 °C 32 to 212 °F	0 to 250 °C 32 to 482 °F	0 to –500 °C 32 to 932 °F
Output range	0–10 V / 0–20 mA - 4–20 mA Switchable				
Dimensions H xW x D	80 x 22.5 x 80 mm				
Voltage	24 VDC - Non isolated				
Catalog number	RMPT10BD	RMPT20BD	RMPT30BD	RMPT50BD	RMPT70BD

For additional information, reference catalog 8501CT0601.



Zelio Analog

Optimum PT 100



Type	PT 100				
Temperature range	-40 to 40 °C -40 to 104 °F	-100 to 100 °C -148 to 212 °F	0 to 100 °C 32 to 212 °F	0 to 250 °C 32 to 482 °F	0 to 500 °C 32 to 932 °F
Output range	0–10 V				
Dimensions H x W x D	80 x 22.5 x 80 mm				
Voltage	24 VDC - Non isolated				
Catalog number	RMPT13BD	RMPT23BD	RMPT33BD	RMPT53BD	RMPT73BD

3

Universal Analog Converter



Type	Analog Converter			
Input range	0–10 V or 4–20 mA	0–10 V / -10–+10 V 0–20 mA 4–20 mA	0–50 V / 0–300 V 0–500 V	0–1,5 A / 0–5 A 0–15 A
Output range	0–10 V or 4–20 mA	0–10 V / -10–+10 V 0–20 mA 4–20 mA Switchable	0–10 V 0–20 mA 4–20 mA Switchable	0–10 V or 0–20 mA or 4–20 mA
Dimensions H x W x D	80 x 22.5 x 80 mm			80 x 45 x 80 mm
Voltage	24 VDC - Non isolated	24 VDC - Isolated	24 VDC - Non isolated	24 VDC - Non isolated
Catalog number	RMCN22BD	RMCL55BD	RMCV60BD	RMCA61BD

For additional information, reference catalog 8501CT0601.

Zelio Control

Relays

Control relays for 3-phase supplies



3	Function	Rotational direction and presence of phases				
			+ Under voltage	+ Over and undervoltage	+ Asymmetry	
	Adjustable time delay	without	without	0.1–10 s	0.1–10 s	0.1–10 s
	Supply voltage	220–440V	380–440V	400V	380–440V	380–440V
	Output	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O
	Catalog number	RM4TG20	RM4TU02	RM4TR34 (1)	RM4TR32 (2)	RM4TA32

- (1) Relay with fixed voltage thresholds.
(2) Relay with adjustable voltage thresholds.

Current and voltage measurement relays

(3) Basic catalog number. To be completed with the letters indicating the required voltage, as shown below:

Voltage	VAC, 50/60 Hz	VDC
24–240 V	MW	MW
110–130 V	F	–
220–240 V	M	–
380–415 V	Q	–



Function	Detection of over and undercurrent					
	over and undercurrent	over and undercurrent	over and undercurrent	over and undercurrent	over and undercurrent	over and undercurrent
Measuring range	3–30 mA 10–100 mA 0.1–1 A	0.3–1.5 A 1–5 A 3–15 A	0.05 –0.5 V 0.3 –3 V 0.5–5 V	1–10 V 5–50 V 10–100 V	30–300 V 50–500 V	180–270 V
Adjustable time delay	0.05–30 s	0.05–30 s	0.05 –30 s	0.05–30 s	0.05–30 s	0.1–10 s
Output	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O
Catalog number	RM4JA31.. (3)	RM4JA32.. (3)	RM4UA31.. (3)	RM4UA32.. (3)	RM4UA33.. (3)	RM4UB35

(4) Basic catalog number. To be completed with the letters indicating the required voltage, as shown below:

Voltage	RM4-LG01	RM4-LA32	
	VAC, 50/60 Hz	VAC, 50/60 Hz	VDC
24 V	B	B	–
24–240 V	–	MW	MW
110–130 V	F	F	–
220–240 V	M	M	–
380–415 V	Q	Q	–



Control relays	Empty or fill	
Sensitivity scale	5–100 kΩ	0.25–5 kΩ 2.5–50 kΩ 25–500 kΩ
Time delay	without	adjustable, 0.1 to 10 s
Output	1 C/O	2 C/O
Catalog number	RM4LG01.. (4)	RM4LA32.. (4)

Liquid level control probe type	Measuring electrode and reference electrode	1 simple stainless steel electrode in PVC protective casing
Mounting	suspended	suspended
Maximum operating temperature	100°C	100°C
Catalog number	LA9RM201	RM79696043

For additional information, reference catalog 8430CT0001R6/02.



Zelio Control

Control relays for 3-phase supplies



Function	Phase reversal and presence of phases					
		+ Under voltage		+ Imbalance		
Adjustable time delay	Fixed 0.3s	0.2–10s	Fixed 0.2s	Fixed 0.2s	0.1–10s	0.1–10 s
Supply voltage	230–440 V	380–550 V	230 V	230 V	185–275 V	320–480 V
Output	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.
Catalog number	RM84873004	RM84873015	RM84873511(1)	RM84873501 (2)	RM84873310	RM84873311

3



Function		Phase reversal, phase loss, phase imbalance, and undervoltage			
Mounting Type		Plug-in	Plug-in	Panel Mount	Panel Mount
Undervoltage setting		180–240 V	360–480 V	180–240 V	360–480 V
Supply voltage		240 V 60 Hz	480 V 60 Hz	240 V 60 Hz	480 V 60 Hz
Output		1 N.C. / 1 N.O.	1 N.C. / 1 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.
Catalog number	relay	8430MPSV24	8430MPSV29	8430MPDV24	8430MPDV29
	socket	8501NR51	8501NR82	–	–

For additional information on RM8, reference catalog 8430CT0001/R2/05.
For additional information on 8430, reference catalog 8430CT9701.

Zelio Count

Counters Totalizers



3	Display	LCD			
	Supply voltage	Internal battery			
	Number of digits displayed	8			
	Counting frequency	40 Hz or 7.5 Hz	40 Hz or 7.5 Hz	14 or 100 Hz	15 Hz
	Input	Voltage	Voltage	Solid state	Voltage
	Front face dimensions, W x H	48 x 24 mm	48 x 24 mm	48 x 24 mm	48 x 24 mm
	Catalog number	RC87610050	RC87610340	RC87610240	RC87610250

Hour counters



Display	LCD	
Supply voltage	Internal battery	
Number of digits / display	6	
Supply frequency	—	
Input	Voltage	Voltage
Front face dimensions, W x H	48 x 24 mm	48 x 24 mm
Catalog number	RC87610150	RC87610440

For additional information, reference catalog 9051T0501.

Timing relays
Modular timers

Zelio Time



Type of modular timer width 17.5 mm, relay output	On-delay	Multifunction		
External control	no	–	–	–
Supply voltage	24 VDC - 24–240 VAC	24 VDC - 24–240 VAC		12–240 VAC/DC
Timing range	0.1 s–100 h	0.1 s–100 h	0.1 s–10 h	0.1 s–100 h
Output	1 C/O	1 C/O	1 C/O	1 C/O
Catalog number	RE11RAMU	RE11RMMU (1)	RE11RMEMU (2)	RE11RMMW (1)

- (1) Multifunction: 8 functions On-delay, Off-delay, repeat cycle, one shot.
(2) Multifunction: 9 functions On-delay, Off-delay, safe guard, impulse counter, impulse relay.



Type of modular timer width 17.5 mm, relay output	Asymmetrical repeat cycle	Off delay	One shot
External control	–	–	–
Supply voltage	24 VDC - 24–240 VAC	24 VDC - 24–240 VAC	24 VDC - 24–240 VAC
Timing range	0.1 s–100 h	0.1 s–100 h	0.1 s–100 h
Output	1 C/O	1 C/O	1 C/O
Catalog number	RE11RLMU	RE11RHMU	RE11RBMU



Type of modular timer width 17.5 mm, solid-state output	On-delay	Off-delay	Multifunction (3)
Supply voltage	24–240 VAC/DC	24–240 VAC	24–240 VAC
Timing range	0.1 s–100 h	0.1 s–100 h	0.1 s–100 h
Output	solid-state	solid-state	solid-state
Catalog number	RE11LAMW	RE11LCBM	RE11LMBM

- (3) Multifunction: 8 functions On-delay, Off-delay, one shot, off-delay with control contract, repeat cycle timers, on-delay and off-delay, pulse on energization.



Panel-mounted relays	Timer on-delay	Asymmetrical flasher	Multifunction (4)	Multifunction (5)
Power supply	24–240 VAC/DC			
Time range	0.02 s–300 h			
Output	2 relay 5 A			
Catalog number	RE48ATM12MW	RE48ACV12MW	RE48AMH13MW (6)	RE48AML12MW (7)

- (4) Timer on-delay / pulse on energization.
(5) Timer on-delay / calibrator / timer off-delay / symmetrical flasher.
(6) 1 selectable in instantaneous.
(7) Multi-function: 4 functions On-delay, one shot, Off-delay, repeat cycle.

Zelio Time

Industrial timers



3

Type of single function relay width 22.5 mm, relay output	On-delay		Off-delay		
External control	no	yes	no	yes	yes
Supply voltage	24VAC/DC 110–240 VAC	24VAC/DC 42–48 VAC/DC 110–240 VAC	24–240 VAC/DC	24 VAC/DC 42–48 VAC/DC 110–240 VAC	24 VAC/DC 42–48 VAC/DC 110–240 VAC
Timing range	0.05 s–300 h	0.05 s–300 h	0.05 s–10 mn	0.05 s–300 h	0.05 s–300 h
Output	1 C/O	2 C/O (1)	1 C/O	2 C/O (1)	1 C/O
Catalog number	RE7TL11BU	RE7TP13BU	RE7RB11MW	RE7RL13BU	RE7RM11BU

(1) 1 selectable in instantaneous mode .



Type of relay width 22.5 mm, relay output	Single function		Multifunction	
	Asymmetrical flashing	Pulse on energisation	6 functions (2)	8 functions (3)
External control	yes	no	–	–
Supply voltage	24VAC/DC 42–48 VAC/DC 110–240 VAC	24 VAC/DC 110–240 VAC	24 VAC/DC 42–48 VAC/DC 110–240 VAC	24 VAC/DC 110–240 VAC
Timing range	0.05 s–300 h	0.05 s–300 h	0.05 s–300 h	0.05 s–300 h
Output	1 C/O	1 C/O	1 C/O	2 C/O (4)
Catalog number	RE7CV11BU	RE7PE11BU	RE7ML11BU	RE7MY13BU

(2) RE7ML11BU functions: On-delay, Off-delay, Pulse on energization with start on energization, Pulse on energization with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period.

(3) REMY13BU functions: On-delay, Off-delay, Pulse on energization with start on energization, Pulse on energization with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period, Star-delta starting with double On-delay timing, Star-delta starting with contact for switching to star connection.

(4) 1 selectable in instantaneous mode.

Miniature plug-in relays, relay output



Functions			
Timing ranges	7 switchable ranges	0.1 s–1 s - 1 s–10 s - 0.1 min–1 min - 1 min–10 min - 0.1 h–1 h - 1 h–10 h - 10 h–100 h	
Relay output		4 timed C/O contacts	2 timed C/O contacts
Rated current		AC 3 A	AC 5 A
Voltages	24 VDC	RE XL4TMBD	RE XL2TMBD
	24 VAC 50/60 Hz	RE XL4TMB7	RE XL2TMB7
	120 VAC 50/60 Hz	RE XL4TMF7	RE XL2TMF7
	230 VAC 50/60 Hz	RE XL4TMP7	RE XL2TMP7

Plug-in timers



Type of plug-in timer			On-Delay		Off-delay		Interval
Supply Voltage			24 VAC/DC	120 VAC/110 VDC	24 VAC/DC	120 VAC/110 VDC	120 VAC/110 VDC
Relay Output			2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.
Resistive Contact Rating			10 A	10 A	10 A	10 A	10 A
Output Pins			8	8	11	11	8
Catalog Number	Timing range	0.1–10 sec	9050JCK11V14	9050JCK11V20	9050JCK21V14	9050JCK21V20	9050JCK31V20
		0.3–30 sec	9050JCK12V14	9050JCK12V20	9050JCK22V14	9050JCK22V20	9050JCK32V20
		0.6–60 sec	9050JCK13V14	9050JCK13V20	9050JCK23V14	9050JCK23V20	9050JCK33V20
		1.2–120 sec	9050JCK14V14	9050JCK14V20	9050JCK24V14	9050JCK24V20	9050JCK34V20
	Relay socket		8501NR51	8501NR51	8501NR61	8501NR61	8501NR51

For additional information on 9050JCK, reference Catalog 9050CT9601R7/04.



Type of plug-in timer			One Shot	Repeat Cycle	On- Delay	Multifuction
Supply Voltage			120 VAC/110 VDC	120 VAC/110 VDC	120 VAC	24 VAC
Relay Output			2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.
Resistive Contact Rating			10 A	10 A	10 A	10 A
Output Pins			11	8	8	11
Catalog Number	Timing range	0.1–10 sec	9050JCK41V20	9050JCK51V20	–	–
		0.3–30 sec	9050JCK42V20	9050JCK52V20	–	–
		0.6–60 sec	9050JCK43V20	9050JCK53V20	–	–
		1.2–120 sec	9050JCK44V20	9050JCK54V20	–	–
		0.05 s to 999 m	–	–	9050JCK60V20	9050JCK70V14
	Relay socket		8501NR51	8501NR51	8501NR51	8501NR61
						9050JCK70V20

For additional information on 9050JCK, reference Catalog 9050CT9601R7/04.



Type of plug-in timer		On-Delay	Off- Delay	Repeat Cycle	Multifuction
Supply Voltage		24 VDC/24–240VAC	24 VDC/24–240VAC	24 VDC/24–240VAC	24 VDC/24–240VAC
Timing Range		0.1 s to 100 h	0.1 s to 100 h	0.1 s to 100 h	0.1 s to 100 h
Relay Output		2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.	2 N.C. / 2 N.O.
Resistive Contact Rating		8 A	8 A	8 A	8 A
Output Pins		8	11	11	11
Catalog Number		RE88867215	RE88867435	RE88867455	RE88867305
Relay socket		8501NR51	8501NR61	8501NR61	8501NR61

Zelio Logic 2

Programmable smart relays Compact, SR2



3

Compact smart relays		With display, DC power supply					
Supply voltage		12VDC		24 VDC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
	including 0-10 V analog inputs	4	6	-	4	2	6
Number of outputs		4 relay	8 relay	4 relay	4	8 relay	8
Dimensions, W x D x H		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6 mm		124.6x59.5x107.6 mm	
Clock		yes	yes	no	yes	no	yes
Catalog number		SR2B121JD	SR2B201JD	SR2A101BD (1)	SR2B12pBD (2)	SR2A201BD (1)	SR2B20pBD (2)

(1) Programming on smart relay in LADDER language only.

(2) Replace the **p** by the number **1** to order a smart relay with **relay output** or by **2** for a smart relay with **transistor output** (Example: SR2B12 1BD).



Compact smart relays		With display, AC power supply					
Supply voltage		24VAC		100–240 VAC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
		4 relay	8 relay	4 relay	4 relay	8 relay	8 relay
Dimensions, W x D x H		71.2x59.5x107.6	124.6x59.5x107.6	71.2 x 59.5 x 107.6mm		124.6 x 59.5 x 107.6mm	
Clock		yes	yes	no	yes	no	yes
Catalog number		SR2B121B	SR2B201B	SR2A101FU (1)	SR2B121FU	SR2A201FU (1)	SR2B201FU

(1) Programming on smart relay in LADDER language only.



Compact smart relays		Without display and without buttons, DC and AC power supply					
Supply voltage		24VDC			100–240 VAC		
Number of inputs/outputs		12	20	10	12	20	
Number of inputs	discrete inputs	6	8	12	6	8	12
	including 0-10 V analog inputs	-	4	6	-	-	-
Number of outputs		4 relay	4 relay	8 relay	4 relay	4 relay	8 relay
Dimensions, W x D x H		71.2x59.5x 107.6mm		124.6x59.5x107.6	71.2 x 59.5 x 107.6 mm		124.6x59.5x107.6
Clock		no	yes	yes	no	yes	yes
Catalog number		SR2D101BD (1)	SR2E121BD (2)	SR2E201BD (2)(3)	SR2D101FU (1)	SR2E121FU	SR2E201FU(3)

(1) Programming on smart relay in LADDER language only.

(2) To order a smart relay for a **24 VAC supply** (no analog inputs), delete the letter **D** from the end of the catalog number (**SR2E121B** and **SR2E201B**).

(3) To order a smart relay without a clock replace the letter **E** with the letter **D** (Example: SR2D201BD and SR2D201FU - these units can only be programmed in LADDER language).

Zelio Logic 2

Modular, SR3



New

Modular smart relays*		With display, DC and AC power supply					
Supply voltage		12 VDC	24VDC		24VAC		100–240VAC
Number of inputs/outputs		26	10	26	10	26	10
Number of inputs	Discrete inputs	16	6	16	6	16	6
	including 0-10 V analog inputs	6	4	6	–	–	–
Number of outputs		10 relay	4	10	4 relay	10 relay	4 relay
Dimensions, W x D x H		124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6
Clock		yes	yes	yes	yes	yes	yes
Catalog number		SR3B261JD	SR3B10pBD (1)	SR3B26pBD (1)	SR3B101B	SR3B261B	SR3B101FU

* The modular base can be fitted with one I/O extension module. The 24 VDC modular base can be fitted with one communication module and/or one I/O extension module.

(1) Replace the **p** by the number **1** to order a smart relay with **relay output** or by **2** for a smart relay with **transistor output** (Example: SR3B101BD).



New

Extension modules for Zelio Logic 2 SR3Bppppp (2)		Communication	Discrete Inputs/Outputs			Analog Inputs/Outputs
Application		MODBUS network	–	–	–	–
Number of inputs/outputs		–	6	10	14	4
Number of inputs	Discrete	–	4	6	8	–
	Analog (0–10 V, 0–20 mA, PT100)	–	–	–	–	2*
Number of outputs	Relay	–	2 relay	4 relay	6 relay	–
	Analog (0–10 V)	–	–	–	–	2
Dimensions, W x D x H		35.5x59.5x107.6	35.5x59.5x107.6	72x59.5x107.6	72x59.5x107.6	35.5x59.5x107.6
Catalog number	12 VDC	–	SR3XT61JD	SR3XT101JD	SR3XT141JD	–
	24 VAC	SR3MBU01BD	SR3XT61BD	SR3XT101BD	SR3XT141BD	SR3XT43BD
	24 VAC	–	SR3XT61B	SR3XT101B	SR3XT141B	–
	100–240 VAC	–	SR3XT61FU	SR3XT101FU	SR3XT141FU	–

* max. 1 PT100 input

(2) The power supply of the extension modules is provided via the Zelio Logic 2 modular relays.

Zelio Soft software and memory for SR2/SR3

Zelio Soft software and memory	Multilingual programming software	Connecting cables			Back-up memory	
Description	PCD-ROM (Windows 98, NT, 2000, XP, ME) (3)	PC Serial to Relay	PC USB to SR2CBL01	PC USB to Relay	EEPROM (<V3.0 ZelioSoft)	EEPROM (≥ V3.0 ZelioSoft)
Catalog number	SR2SFT01	SR2CBL01	SR2CBL06	SR2USB01	SR2MEM01	SR2MEM02

(3) CD-ROM including Zelio Soft software, an application library, a self-training manual, installation instructions and a user's manual.

New

Communication interface for SR2/SR3

Interface, Zelio Logic 2 Alarm software	Communication interface (4)	Alarm management software
Supply voltage	12–24 VDC	–
Description	–	PC CD-ROM (Windows 98, NT, 2000, XP)
Dimensions, W x D x H	72x59.5x107.6 mm	–
Catalog number	SR2COM01	SR2SFT02

(4) Modems to be supplied by user.

Twido™

Programmable controllers Bases



3	Type of base		Compact				
	Number of discrete I/O		10	16	24	40	40
	Number of discrete inputs (24VDC)		6 sink/source (1)	9 sink/source (1)	14 sink/source (1)	24 sink/source (1)	24 sink/source (1)
	Number of discrete outputs		4 relay 2 A	7 relay 2 A	10 relay 2 A	14 relay 2 A, 2 source transistor	
	Types of connection		Non-removable screw terminals				
	Possible I/O extension modules		–	–	4	7	7
	Counting (resolutions in bits)		3 x 5 kHz (16 bit), 1 x 20 kHz (32 bit)			4x5 kHz (16 bit), 2x20 kHz (32 bit)	
	PWM position control		–	–	–	2 x 7 kHz	2 x 7 kHz
	Serial ports		1 x RS 485	1 x RS 485; as an option: 1 x RS 232C or RS 485			
	Protocol		Modbus Master/slave, ASCII, remote RTU				
Dimensions W x D x H		80 x 70 x 90 mm	80 x 70 x 90 mm	95 x 70x 90 mm	157 x 70 x 90 mm	157 x 70 x 90 mm	
Catalog number	Supply voltage 100–240 VAC	TWDLCAA10DRF	TWDLCAA16DR	TWDLCAA24DRF	TWDLCAA40DRF	TWDLCAE40DRF	
	Supply voltage 19.2–30 VDC	TWDLCA10DRF	TWDLCA16DRF	TWDLCA24DRF	–		
	Real-time clock (as an option)	TWDXCPRTC					
	Display unit (as an option)	TWDXCPODC					

(1) Positive or negative logic.



Number of discrete I/O		20	40
	Number of discrete inputs (24VDC)	12 sink/source (2)	12 sink/source (2)
	Number of discrete outputs	8 source transistor 0.3 A	6 relay and 2 source transistor 0.3 A
	Types of connection	HE 10 connector	Removable screw terminals
	Possible I/O extension modules	4	7
	Supply voltage	24 VDC	
	Integrated Counting	2 x 5 kHz, 2 x 20 kHz	
	PLS/PWM position control	2x7 kHz	
	Serial ports	1 x RS 485; as an option: 1 x RS 232C or RS 485	
	Protocol	Modbus Master/slave, ASCII, remote RTU	
	Dimensions W x D x H	35.4 x 70 x 90 mm	47.5 x 70 x 90 mm
Catalog number		TWDLMDA20DTK (3)	TWDLMDA20DRT
	Real-time clock (as an option)	TWDXCPRTC	
	Display unit (as an option)	TWDXCPODM	
	Memory extension (as an option)	–	TWDXCPMF64

(2) Positive or negative logic.

(3) Also available in the following version: sink transistor outputs (TWDLMDA20DUK and TWDLMDA40DUK).

Accessories

HE10 connectors		TWDLMDA20DTK/40DTK	TWDDI16DK/32DK	TWDDO16TK/32TK
TwidoFast "preformed" cable	L = 3 m	TWDFCW30M	TWDFCW30K	TWDFCW30K
cable with bare wire on other end	L = 5 m	TWDFCW50M	TWDFCW50K	TWDFCW50K
Telefast sub-bases	L = 1 m	TWDFST20DR10	TWDFST16D10	TWDFST16DR10
1 passive, 1 relay, 1 "preformed" cable	L = 2 m	TWDFST20DR20	TWDFST16D20	TWDFST16DR20

Description	Application update (32 Kb / 64 Kb)	with cable	with USB cable
Catalog number	TWDXCPMF32/TWDXCPMF64	TWDSPU1001V10M	TWDSPU1003V10M



I/O modules



Type of module		Analog					
Number of I/O		2 inputs	4 inputs	8 inputs	1 output	2 outputs	2 inputs/1 output
Connection		Removable screw terminals					
Inputs	Range	0–10 V (1) 4–20 mA (2)			–		0–10 V (1) 4–20 mA (2)
	Resolution	12 bits (4096 points)			–		12 bits (4096 points)
Outputs	Range	–			0–10 V 4–20 mA	± 10 V	0–10 V 4–20 mA
	Résolution	–			12 bits(4096 points)	11 bits + sign (2048 points)	12 bits(4096 points)
Measuring accuracy		±0.2 %					
Supply voltage		24 VDC					
Dimensions W x D x H		23.5 x 70 x 90 mm					
Catalog number		TWDAMI2HT	TWDAMI4LT	TWDAMI8HT	TWDAMO1HT	TWDAVO2HT	TWDAMM3HT

(1) Non differential.
(2) Differential.



Type of module		Discrete					AS-Interface Master
Number of discrete I/O		8	4 inputs/4 outputs	16	16	32	2 modules (4)
Logical input		Sink	Sink/Source				–
Connections		Removable screw terminals				HE 10 connectors	
Catalog number	Inputs 24 VDC	TWDDDI8DT	TWDDMM8DRT	TWDDDI16DT	TWDDDI16DK	TWDDDI32DK	–
	Inputs 120 V	TWDDAI8DT	–	–	–	–	–
	Relay outputs 2 A	TWDDRA8RT	TWDDMM8DRT	TWDDRA16RT	–	–	–
	Source transistor outputs 0.1 A	TWDDDO8TT (3)	–	–	TWDDDO16TK (3)	TWDDDO32TK (3)	TWDDNO10M3

(3) Also available in the following version: sink transistor outputs, (TWDDDO8UT, TWDDDO16UK and TWDDDO32UK).
(4) 2 modules max. 62 discrete slaves max. 7 analog slaves max. AS-Interface/M3, V 2.11 (S.7.4 profile not supported).

Communication modules



Type of module	CANopen Expansion	Serial interface module			Serial interface adaptor			Ethernet Interface
Physical layer (non isolated)	–	RS 232C	RS 485		RS 232C	RS 485		–
Connections	Screw terminals	Mini-DIN connector		Screw terminals	Mini-DIN connector		Screw terminals	RJ45
Protocol	–	Modbus Master/slave, ASCII, remote RTU						–
Compatibility with Twido base	Base 20, 24, or 40 I/O	Modular bases only: TWDLMDA			Compact base TWDLCAA16/24DRF Modular base via the integrated display module TWDXCPODM			All models
Catalog number	TWDNCO1M	TWDNOZ232D	TWDNOZ485D	TWDNOZ485T	TWDNAC232D	TWDNAC485D	TWDNAC485T	499TWD01100

Selection guide

Modicon M340 PLC

M340 platforms for Unity Pro software offer

3

Modicon M340, ideal for complex OEM machine control applications that require small size, powerful capabilities and highly integrated functionality.

- 3 built-in communications ports (Ethernet, Modbus, CANopen)
- High density 64 pt modules in standard widths
- Hot Swap modules ease maintenance
- Unity Software family development



Number of Racks	Maximum number of rack 4/6/8/12 slots
	Maximum number of free slots
Inputs/Outputs	In-Rack IOs
	Maximum number of in-rack Discrete inputs/outputs
	Maximum number of in-rack Analog inputs/outputs
	Distributed IOs
Technology functions	Maximum number of distributed Discrete Inputs/outputs
	Maximum number of distributed Analog inputs/outputs
	In-Rack Application specific channels
	Counting channels & Serial poty
Communication	Integrated software libraries
	PLCopen Motion Library
	Process control library
	Embedded ports
Memory capacity	Ethernet (100 Base-TX) - see page 4/54 for details
	CANopen Master (Dsub9, 63 Slaves)
	Modbus Master, Slave, RTU / ASCII (RJ45 19.2 Kbits/s RS485 / RS232)
	USB terminal port, Device connector 12 Mbits/s
Execution time	Maximum numbers of networks (Ethernet)
	Maximum nb of in-rack NOE ethernet TCP/IP module
	CPU
	Memory size - user application
Multitasking operating system	User data
	Program and symbols (Code, constants)
	SD card
	Application Backup
Catalog number	Ready-to-Use System Diagnostic Web Server
	File storage (Standard SDcard / Optinal SDcard BMW RMS008MPF)
	Execution time per instruction
	Boolean
	One word or fixed-word arithmetic
	On floating points
	Nb of Kinst per ms for typical applications
	100% Boolean
	65% Boolean + 35% fixed arithmetic
	Master task
	Fast task
	Event task (I/O event task)

Available 1st Quarter 2007

Selection guide

3

Basic CPU

Performance CPU



CPU 340-10,
Modbus



CPU 340-20,
Modbus,
CANopen master



CPU 340-20,
Modbus,
Ethernet TCP/IP



CPU 340-20,
Ethernet TCP/IP,
CANopen master

1 (-> 2 at 4Q2007)

23

1 (-> 4 at 4Q2007)

47

512

1024

128

256

Limits related to the communication bus/network itself.

Limits related to the communication bus/network itself.

20

36

Motion Function Blocks Library
CONT-CTL library

–

–

1

1

–

1

–

1

1

1

1

–

1

1

1

1

1

2 mb

4 Mb

128Kb

256Kb

35Kinst

70Kinst

16Mb program

2Mb User web pages

- / -

- / 8 Mb

0.28

0.14

0.5

0.25

3.5

1.75

3.7 Kins/ms

7.4 Kins/ms

3.45 Kins/ms

6.9 Kins/ms

1

1

32

84

BMXP341000

BMXP342010

BMXP342020

BMXP342030

Available 1st Quarter 2007

Modicon
M340

Counter modules

Application

Counter modules



Number of channels		2 channels	8 channels
Frequency per channel		60 KHz	10 KHz
Module cycle time			
Counter/measurement input	Counting pulses _"24V	Yes	Yes
	Incremental encosder	10–30V with push-pull in outputs	10–30V with push-pull in outputs
	Absolute encosder		
Reflex inputs/outputs		6 inputs per channel (type 3) 2 transistors outputs 24 V per channel	2 inputs 24Vdc per channel
Counting capacity		32 bits per channel	16 bits per channel
Functions		4 counting modes, 4 measuring modes and PWM	5 counting modes, 1 measuring mode
Processing			
Events		8 sources	6 sources
Connection		2 x 16-point connectors for inputs 10-point connectors for sensors outputs	20-point connectors for inputs/outputs
Type of Module		BMXEHC0200 High speed counter 2 Ch1	BMXEHC0800 High Speed Counter 8 Ch

Available 1st Quarter 2007

Discrete I/O modules

**Modicon
M340**

Application



(Available 2nd
Quarter 2007)

(Available 2nd
Quarter 2007)

(Available 2nd
Quarter 2007)

Type	DC	DC	AC	DC/AC	DC	DC	DC
Voltage	24 VDC	48 VDC	120 VAC	24VDC or 24VAC	48 VAC	24 VDC	24 VDC
Modularity (number of channels)	16 isolated channels	16 isolated channels	16 isolated channels	16 isolated channels	16 isolated channels	32 isolated channels	64 isolated channels
Connection	Terminal Block 20 points						
	Number	1				-	
	Terminal block part number	3 types (1)				-	
	FCN Type 40 points						
	Number	-				1	2
	Compatibility with Telefast					Yes	
Inputs type	IEC 1131 2 conformity	Type 3	Type 1	Type 3	Type 1	Type 3	Type 3
	Logic	Sink logic	Sink logic			Sink logic	Sink logic
	Sensor compatibility to IEC 947 5 2 standard	To be done					
Type of discrete input and I/O modules	BMXDDI1602	BMXDDI1603	BMXDAl1604	BMXDAl1602	BMXDAl1603	BMXDDI3202K	BMXDDI6402K

3

Application



(Available 2nd
Quarter 2007)

(Available 2nd
Quarter 2007)

Type		DC Transistors	DC/AC Relays	DC/AC Isolated relays	AC Triacs	DC Transistors	DC Transistor	DC Transistor	
Voltage		24 VDC	24 VDC 24–240 VAC	24 VDC 24–240 VAC	24–240 VAC	24 VDC	24 VDC	24 VDC	
Current		0.5 Amp	3 Amp (lth)	4 Amp (lth)	1 Amp	0.5 Amp	0.1 Amp	0.1 Amp	
Modularity (number of channels)		16 Channels	16 Channels	8 Channels	16 Channels	16 Channels	32 Channels	64 Channels	
Connection	Terminal Block 20 points								
	Number		1					-	
	Terminal block part number		3 types (1)					-	
	FCN Type 40 points		-						
	Number		-					1	2
	Compatibility with Telefast								Yes
Inputs type	Fallback								
	IEC 1131 2 conformity								
	Protection		Diagnosis and protection channel by channel	No protection	No protection	No protection	Diagnosis and protection channel by group of 8 channels	Diagnosis and protection channel by channel	Diagnosis and protection channel by channel
	Logic		Source logic				Sink logic	Source logic	Source logic
Type of discrete outputs and I/O modules		BMXDDO1602	BMXDRA1605	BMXDRA0805	BMXDAO1605	BMXDDO1612	BMXDDO3202 K	BMXDDO6402 K	

(1) Cabling Accessory for Basic Micro Programmable Logic Controller

BMXFTB2000 Screw terminal strip (20 points), Standard

BMXFTB2010 Screw terminal strip (20 points), Circular adaptor

BMXFTB2020 Spring terminal strip (20 points)

Available 1st Quarter 2007

For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemecanique.com



Modicon M340

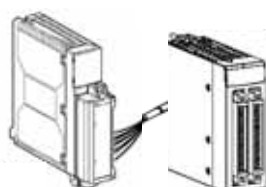
Analog I/O modules

Application

Analog Inputs

Analog Outputs

3



Type of I/O		High Level Fast isolated inputs between channels	Temperature isolated inputs between channels	Isolated Output between channel
Type		4 multi-range (U & I) channels	4 multi-range channels: Thermocouples and RTD (2, 3, 4 wires)	2 multi-range (U & I) channels:
Range	Voltage	+/- 10 V 0–10V 0–5 V 1–5 V	+/- 80 V –	+/- 10 V 0–20 mV
	Current	0–20 mA 4–20 mA		0–20 mA 4–20 mA
	Thermocouple temperature probes		Thermocouples and RTD (2, 3, 4 wires) - Thermocouple B, E, J, K, L, N, R, S, T, U - Temperature probes CEI Pt100/Pt1000, US/JIS Pt100/Pt1000 Cu10, Ni100/Ni1000 in 2, 3 or 4-wire temperature probes.	
Modularity		4 channels	4 channels	2 channels
Isolation		Between channels +/- 300 VDC Between bus and channels 2000 VDC Between channels and earth 2000 VDC	Between channels 750 VDC Between bus and channels 2000 VDC Between channels and earth 750 VDC	Between channels 1400 Vdc Between bus and channels 2000 VDC Between channels and earth 2000 VDC
Read time				
Response time		- 1 ms + 1 ms x nb of channels used - 5 ms (All channels used)	400 ms/ 4 voies	< 1 ms
Resolution		16 bits	0.01 mV	16 bits
Connection		20 points terminal block, 3 types (1)	1 FCN type connectors (40 points) 25-way SUB-D connectors	20 points terminal block, 3 types (1)
		Telefast, 25-way SUB-D connectors ABE7CPA410	Telefast, 25-way SUB-D connectors ABE7CPA412	
Type of module		BMXAMI0410	BMXART0414	BMXAMO0210

(1) Cabling Accessory for BasicMicro Programmable Logic Controller

BMXFTB2000

Screw terminal strip (20 points), Standard

BMXFTB2010

Screw terminal strip (20 points), circular adaptor

BMXFTB2020

Spring terminal strip (20 points)

Available 1st Quarter 2007

Analog Outputs

Analog CombI/O



3

Temperature inputs 8 multi-range channels: Thermocouples and RTD (2, 3, 4 wires)	Fast high level inputs, high level outputs 6 multi-range (U & I) channels: 4 input + 2 output
+/- 80 V	+/- 10 V input 0–10V input 0–5 V input 1–5 V input +/- 10 V output
–	0–20 mA input and output 4–20 mA input and output
Thermocouples and RTD (2, 3, 4 wires) - Thermocouple B, E, J, K, L, N, R, S, T, U - Temperature probes CEI Pt100/Pt1000, US/JIS Pt100/Pt1000 Cu10, Ni100/Ni1000 in 2, 3 or 4-wire temperature probes.	
8 channels	8 channels
Between channels 750 VDC Between bus and channels 2000 VDC Between channels and earth 750 VDC	Not isolated between inputs channel Not isolated between outputs channel Between channels 1400 VDC Between bus and channels 2000 VDC Between channels and earth 2000 VDC
	5 ms (normal scan) 1 + 1 ms/channel used (fast scan)
800 ms/8 voies	user-definable filtering 0 to 0.64 s
0.01 mV	12 bits
1 FCN type connectors (40 points) 25-way SUB-D connectors	20 points terminal block, 3 types (1)
Telefast, 25-way SUB-D connectors ABE7CPA412	
BMXART0814	BMXAMM0600

Available 2nd Quarter 2007

Modicon TSX Micro

Automation platform Basic configurations



3	Type of processor		TSX 3705	TSX 3708	TSX 3710	
	Power supply		110–240 VAC		24 VDC	
	Number of slots	Standard	2 (1 available)	3 (1 available)	2 (1 available)	
		On extension	–	–	2	
	Number of integrated discrete I/O modules		1 (16 I, 12 Q)	2 (32 I, 24 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)
	Number of integrated analog I/O channels		–	–	–	–
	Type of integrated I/O		I: 24 VDC, Q: relay	I: 24 VDC, Q: relay	I: 24 VDC, Q: sol.st. 0.5 A	I: 24 VDC, Q: relay
	Application-specific modules (counter, position control)		2 half-size		2 half-size	
	Bus	AS-Interface cabling system	–		1 half-size	
		CANopen machine bus	–		–	
		Fipio fieldbus	–		–	
Networks	Modbus Plus, Fipway	–		–		
	Ethernet TCP/IP	–		1 external module		
Memory capacity	Integrated	11 K words		14 K words		
	With PCMCIA extension	–		–		
Execution time for one instruction	Boolean	0.25 µs		0.25 µs		
	Numerical	4.81 µs		4.81 µs		
Rack dimensions W x D x H			170.3 x 132.5 x 151 mm	230 x 132.5 x 151 mm	170.3 x 132.5 x 151 mm	
Catalog number	With screw terminals	TSX3705028DR1	TSX3708056DR1	TSX3710128DT1	TSX3710128DR1	
	With HE 10 connector (1)	–	–	TSX3710128DTK1	–	

(1) For use with Advantys Telefast ABE7 wiring system.

(2) Basic configuration provided without I/O modules.

Memory extension



Type of PCMCIA card for TSX 3721/22		Application			
Technology		SRAM	Flash EPROM	Backup	
Memory size (3)	32 K words	TSXMRPP128K	TSXMFPP128K	TSXMFPPB096K	
	32 K words/128 K words	TSXMRPP348K	TSXMCPC224K	–	
	64 K words	TSXMRPP224K	TSXMFPP224K	–	
	64 K words/128 K words	TSXMRPP384K	TSXMCPC224K	–	
	128 K words	TSXMRPC448K	TSXMFPP384K	–	
	128 K words/128 K words	TSXMRPC768K	–	–	

(3) The 1st value corresponds to the size of the application area, the second to the size of the area for data storage (recipes, production data, etc).

Connection accessories: See www.us.telemecanique.com

Modicon
TSX Micro



TSX 3710			TSX 3721		TSX 3722	
24 VDC	110–240 VAC		24 VDC	110–240 VAC	24 VDC	110–240 VAC
2 (1 available)			3 (3 available)		3 (3 available)	
2			2		2	
2 (32 I, 32 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)	–		–	
–	–	–	–		1 (8 I, 1 Q)	
I: 24 VDC, Q: sol. st. 0.1 A	I: 115 VAC, Q: relay		I: 24 VDC, Q: relay	–	I: 0–10 V or 0/4–20 mA, Q: 0...10 V	
2 half-size			4 half-size		4 half-size (2 integrated channels)	
1 half-size			1 half-size		1 half-size	
–			1 PCMCIA card		1 PCMCIA card	
–			1 PCMCIA card		1 PCMCIA card	
–			1 PCMCIA card		1 PCMCIA card	
1 external module			1 external module		1 external module	
14 K words			20 K words		20 K words	
–			128 K words + 128 K words for file storage		128 K words + 128 K words for file storage	
0.25 µs			0.13 µs (0.19 µs with PCMCIA)		0.13 µs (0.19 µs with PCMCIA)	
4.81 µs			4.50 µs		4.50 µs	
170.3 x 132.5 x 151 mm			230 x 132.5 x 151 mm			
–	TSX3710028AR1	TSX3710028DR1	TSX3721101 (2)	TSX3721001 (2)	TSX3722101 (2)	TSX3722001 (2)
TSX3710164DTK1	–	–				

3

Mini extension rack

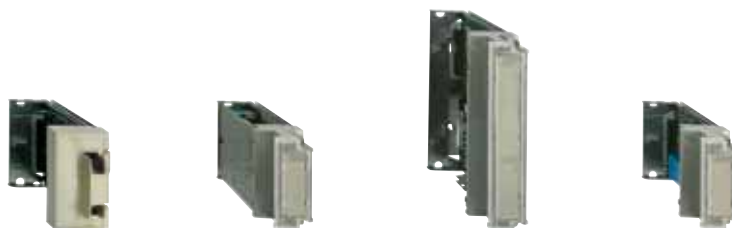


Type of rack	2 slots (4 positions)
For use with	TSX3710/21/22
Rack dimensions W x D x H	112.5 x 132.5 x 151 mm
Catalog number	TSXRK22

Process power supplies see chapter 6 “Power supply.”

Modicon TSX Micro

Automation platform Discrete I/O modules



3

Type of module		Discrete inputs			
Connection		By HE 10 connector (1)		By screw terminals supplied	
Module format		Half		Standard	Half
Number of channels		12		32	8
Input voltage	24 VDC positive logic	TSXDEZ12D2K	–	TSXDEZ32D2	–
	24 VDC positive/negative logic	–	TSXDEZ12D2	–	–
	100–120 VAC	–	–	–	TSXDEZ08A4
	200–240 VAC	–	–	–	TSXDEZ08A5

(1) For use with Advantys Telefast ABE7 wiring system.



Type of module		Discrete outputs					
		Solid state				Relay	
Connection		By HE 10 conn. (1)		By screw terms. supplied			
Module format		Half		Standard	Half		
Number of protected channels		8		32	4	8	32
Protection of outputs		Yes		Yes	Yes	No	No
Output voltage/current	24 VDC/0.5 A	TSXDSZ08T2K	TSXDSZ08T2	TSXDSZ32T2	–	–	–
	24 VDC/2 A	–	–	–	TSXDSZ04T22	–	–
	24 VDC/1 A per channel	–	–	–	–	TSXDSZ08R5	–
	24–240 VAC/1 A per channel	–	–	–	–	–	TSXDSZ32R5

(1) For use with Advantys Telefast ABE7 wiring system.



Type of module		Discrete I/O					
Connection		By HE 10 connector (1)			By screw terminals supplied		
Module format		Half	Standard				
Number of inputs		8	16	32	16	16	16
Number of outputs		8 solid state	12 solid state	32 solid state	12 solid state	12 solid state	12 solid state
Protection of outputs		Yes			No		
Voltage/current output	24 VDC/0.5 A	TSXDMZ16DTK	TSXDMZ28DTK	–	TSXDMZ28DT	–	–
	24 VDC/0.1 A	–	–	TSXDMZ64DTK	–	–	–
	100–120 VAC/50 VA	–	–	–	–	TSXDMZ28DR	TSXDMZ28AR

(1) For use with Advantys Telefast ABE7 wiring system.

Connection accessories: See www.us.telemecanique.com

Communication modules

Modicon
TSX Micro



Type of module		Ethernet TCP/IP network For TSX 3710/21/22 PLCs	
Speed		10/100 Mbps	10/100 Mbps
Standard services		TCP/IP(Uni-TE, Modbus)	TCP/IP(Uni-TE, Modbus)
Transparent Ready	Class	B20	C20
	I/O Scanning	Yes	Yes
Web server	Standard services	Yes	Yes
	FactoryCast services	–	Yes with 8 Mb of user Web pages and graphics editor
Catalog number		TSXETZ410	TSXETZ510

3



Type of module		AS-Interface cabling system	CANopen machine bus	Fipio fieldbus
Name and description		Half size in-rack	PCMCIA card	PCMCIA card
Speed		167 Kbps	20 Kbps–1 Mbps dep. on distance	1 Mbps
Catalog number		TSXSAZ10	TSXCPP110	TSXFPP10



Type of module		Serial links Uni-Telway, Modbus	
Name and description		Integrated port	Multiprotocol PCMCIA card
Speed		19.2 Kbps	1.2–19.2 Kbps
Catalog number	With interface RS 485	TSX37 (1)	TSXSCP114
	RS 232D	–	TSXSCP111
	20 mA CL	–	TSXSCP112

(1) Catalog numbers: see pages 3/26 and 3/27, TSX3705/08/10 PLCs with link integrated on TER terminal port, or TSX3721/22 PLCs with link integrated on AUX terminal port.



Type of module		Networks Modbus Plus	Fipway
Name and description		PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps
Catalog number		TSXMBP100	TSXFPP20

Connection accessories: See www.us.telemecanique.com

Modicon Premium™

Automation platform Processors under Unity Pro software



3	Type of processor		TSX 57C configuration 1 rack max.	TSX 5700 1 rack max.	TSX 5710 4 racks max.	TSX 5720 16 racks max.
	Number of I/O in racks	Discrete Analog	192 12	256 12	512 24	1024 80
	Integrated process control		No / Yes	No / Yes	No / Yes	30 loops / Yes
	Application-specific channels (counter, position control, weighing)		4	4	8	24
	Bus	AS-Interface cabling system	1	1	2	4
		CANopen machine bus	1 (integrated)	1 (integrated)	1	1
		INTERBUS, Profibus DP fieldbus	–	–	1	1
	Networks (Ethernet, Modbus Plus, Fipway)		1	1	1	2 (6)
	Memory capacity	Without PCMCIA extension	96 Kb data/prog.	96 Kb data/prog.	96 Kb data/prog.	160/192 Kb data/prog. (1)
		With PCMCIA extension	96 Kb data/128 Kb prog.	96 Kb data/128 Kb prog.	96 Kb data/224 Kb prog.	160/192 Kb data (1)/768 Kb prog.
	Execution time for one instruction	Boolean	0.19 µs	0.19 µs	0.19 µs	0.19 µs
		On word or arithmetic	0.25 µs	0.25 µs	0.25 µs	0.25 µs
	Catalog number	Without integrated port	–	–	TSXP57104M	TSXP57204M
		Integrated Ethernet	–	–	TSXP571634M	TSXP572634M
		Integrated CANopen	TSXP570244M (2)	TSXP570244M	–	–
		Integrated Fipio	–	–	TSXP57154M	TSXP57254M

(1) The second value corresponds to the integrated memory capacity when the processor is equipped with a Fipio manager integrated link.

(2) 24 VDC version : TSXP57CD0244M, 100–240 VAC version : TSXP57CA0244M.

(3) Processor with double format.

(4) PC format card on PCI bus.

Processors under PL7 software



Type of processor		TSX 5710 4 racks max.	TSX 5720 16 racks max.
Number of I/O in racks	Discrete Analog	512 24	1024 80
Integrated process control		No	30 loops
Application-specific channels (counter, position control, weighing)		8	24
Bus	AS-Interface cabling system	2	4
	CANopen machine bus	1 (with TSXP57103M)	1
	INTERBUS, Profibus DP fieldbus	–	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1
Memory capacity	Without PCMCIA extension	32 K words data/prog.	48 K words data/prog. (5)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data (5)/160 K words prog.
Execution time for one instruction	Boolean	0.50 µs	0.19 µs
	On word or arithmetic	0.62 µs	0.25 µs
Catalog number	Without integrated port	TSXP57103M	TSXP57203M
	Integrated Ethernet	–	TSXP572623M
	Integrated Fipio	TSXP57153M	TSXP57253M
	Integrated Ethernet and Fipio	–	TSXP572823M

(5) The second value corresponds to the processor with integrated Fipio bus manager link.

Processors under Unity Pro software

Modicon Premium
Atrium slot-PLCs under Unity Pro software



	TSX 5730 16 racks max.	TSX 5740 16 racks max.	TSX 5750 16 racks max.	PCI 5720 16 racks max.	PCI 5730 16 racks max.
	1024	2040	2040	1024	1024
	128	256	512	80	128
	45 loops / Yes	60 loops / Yes	90 loops / Yes	30 loops / Yes	45 loops / Yes
	32	64	64	24	32
	8	8	8	4	8
	1	1	1	1	1
	3	4	5	1	3
	3	4	4	3 (6)	4
	192/208 Kb data/prog. (1)	320 Kb data/prog.	640 Kb data/prog.	160 Kb data/prog. (1)	208 Kb data/prog. (1)
	192/208 Kb data (1)/1,75 Mb prog.	440 Kb data/2 Mb prog.	896 Kb data/7 Mb prog.	160 Kb data/768 Kb prog.	208 Kb data (1)/1,75 Mb prog.
	0.12 µs	0.06 µs	0.037 µs	0.19 µs	0.12 µs
	0.17 µs	0.07 µs	0.045 µs	0.25 µs	0.17 µs
	TSXP57304M	-	-	TSXPCI57204M (4)	-
	TSXP573634M	TSXP574634M	TSXP575634M	-	-
	-	-	-	-	-
	TSXP57354M	TSXP57454M	TSXP57554M	-	TSXPCI57354M (4)

3



	TSX 5730 16 racks max.	TSX 5740 16 racks max.
	1024	2048
	128	256
	45 loops	60 loops
	32	64
	8	8
	1	1
	2	2
	3	4
	64/80 K words data/prog. (5)	96 K words data/prog.
	80/96 K words data (5)/384 K words prog.	176 K words data/992 K words prog. (6)
	0.12 µs	0.06 µs
	0.17 µs	0.08 µs
	TSXP57303AM	-
	TSXP573623AM	-
	TSXP57353AM	TSXP57453AM
	-	TSXP574823AM

(6) with PL7 V4.4 min.

Modicon Premium

Automation platform Memory extensions for Unity Pro processors



3

Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM only	SRAM
Memory size	96 Kb	–	TSXMFPPB096K (3)	–
	128 Kb	TSXMRPP128K	TSXMFPP128K	–
	224 Kb	TSXMRPP224K / TSXMCPC224K	TSXMFPP224K	–
	384 Kb	TSXMRPP384K	TSXMFPP384K	–
	448 Kb	TSXMRPC448K (1)	–	–
	512 kb	TSXMCPC512K	–	–
	768 Kb	TSXMRPC768K (1)	TSXMFPP512K (512 Ko)	–
	1 Mb	TSXMRPC001M (1)	TSXMFPP001M	–
	1.7 Mb	TSXMRPC01M7	–	–
	2 Mb	TSXMRPC002M (1)	TSXMCPC002M (2)	–
	3 Mb	TSXMRPC003M (1)	–	–
	4 Mb	–	TSXMFPP004M	TSXMRPF004M
	7 Mb	TSXMRPC007M (1)	–	–
	8 Mb	–	–	TSXMRPF008M

(1) By configuration, the user can reserve part of the memory space for data storage (recipes, production data) on request.

(2) These cards have an additional SRAM area for storing data (recipes, production data).

(3) Backup cartridge of the program when this one reside entirely in PLC internal memory.

Memory extensions for PL7 processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM only	SRAM
Memory size (4)	32 K words	TSXMRPP128K	TSXMFPP128K	–
	64 K words	TSXMRPP224K	TSXMFPP224K	–
	64 K words/128 K words	TSXMRPP384K	TSXMCPC224K	–
	96 K words	–	TSXMFPPB096K	–
	128 K words	TSXMRPC448K	TSXMFPP384K	–
	128 K words/128 K words	TSXMRPC768K (5)	–	–
	256 K words	TSXMRPC001M	–	–
	256 K words/640 K words	TSXMRPC01M7 (5)	–	–
	384 K words/640 K words	TSXMRPC002M	–	–
	512 K words	TSXMRPC003M (5)	–	–
	992 K words/640 K words	TSXMRPC007M	–	–
	2048 K words	–	–	TSXMRPF004M

(4) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc).

(5) These cards have an additional SRAM area for storing application object symbols.

(6) with PV0.05

Power supply modules ⁽¹⁾



Type of power supply module for	Premium					Atrium ⁽²⁾
Input voltage	24 VDC		100–240 VAC	100–120 / 200–240 VAC		24 VDC
Output voltage	5 VDC / 24 VDC					5 VDC
Total useful power	26 W	50 W	26 W	50 W	77 W	26 W
Format	Standard	Double	Standard	Double	Double	–
Catalog number	TSXPSY1610M	TSXPSY3610M	TSXPSY2600M	TSXPSY5500M	TSXPSY8500M	TSXPSI2010

(1) Process power supplies see chapter 6 “Power supply.”
(2) Only for Atrium slot-PLCs under Unity.

3

Racks



Type of rack	Non extensible		Extensible
For configuration	Mono-rack		Multi-rack (16 max.)
Catalog number	Dimensions W x D x P		
	4 positions	188 x 160 x 151.5 mm (3)	TSXRKY4EX
	6 positions	261.6 x 160 x 151.5 mm (3)	TSXRKY6EX
	8 positions	335.3 x 160 x 151.5 mm (3)	TSXRKY8EX
	12 positions	482.6 x 160 x 151.5 mm (3)	TSXRKY12EX

(3) Hight of I/O modules : 151.5 mm with HE 10 or SUB-D connectors, 165 mm with screw terminals.

Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators
Catalog number	–	Set of 2
	–	TSXTLYEX
	L = 1 m	TSXCBY010K
	L = 3 m	TSXCBY030K
	L = 5 m	TSXCBY050K
	L = 12 m	TSXCBY120K
	L = 18 m	TSXCBY180K
	L = 28 m	TSXCBY280K
	L = 38 m	TSXCBY380K
	L = 50 m	TSXCBY500K
	L = 72 m	TSXCBY720K
	L = 100 m	TSXCBY1000K

Modicon
Premium

Automation platform
Discrete I/O modules



3

Type of module		Discrete inputs				
Connection		By screw terminals TSXBLY01 (1)		By HE 10 connector (2) high density		
Number of isolated channels		8	16	16 (3)	32	64
Input voltage	24 VDC	TSXDEY08D2	TSXDEY16D2	TSXDEY16FK	TSXDEY32D2K	TSXDEY64D2K
	48 VDC	–	TSXDEY16D3	–	TSXDEY32D3K	–
	24 VAC	–	TSXDEY16A2 (4)	–	–	–
	48 VAC	–	TSXDEY16A3	–	–	–
	100–120 VAC	–	TSXDEY16A4	–	–	–
	200–240 VAC	–	TSXDEY16A5	–	–	–

- (1) Terminal block to be ordered separately.
(2) For use with Advantys Telefast ABE7 wiring system.
(3) Module with high-speed isolated inputs (filtering from 0.1 to 7.5 ms) able to activate the event-triggered task.
(4) Module also compatible with 24 VDC negative logic.



Type of module		Discrete outputs							
		Solid state				Relay		Triac	
Connection		By screw terminals TSXBLY01 (1)		By HE10 conn. (2)		By screw terminals TSXBLY01 (1)			
Number of protected channels		8	16	32	64	8	16	8	16
Output voltage/current	24 VDC/0.5 A	TSXDSY08T2	TSXDSY16T2	—	—	—	—	—	—
	24 VDC/2 A	TSXDSY08T2	—	—	—	—	—	—	—
	24 VDC/0.1 A	—	—	TSXDSY32T2K	TSXDSY64T2K	—	—	—	—
	48 VDC/1 A	TSXDSY08T3	—	—	—	—	—	—	—
	48 VDC/0.25 A	—	TSXDSY16T3	—	—	—	—	—	—
	24–48 VDC-24–240 VAC/5 A Th.c	—	—	—	—	TSXDSY08R5A	—	—	—
	24–120 VAC/5 A Th.c	—	—	—	—	TSXDSY08R4D	—	—	—
	24–120 VAC/1 A	—	—	—	—	—	—	—	TSXDSY16S4
	48–240 VAC/1 A	—	—	—	—	—	—	—	TSXDSY16S5
	48–240 VA /2 A	—	—	—	—	—	—	TSXDSY08S5	—
	24 VDC-24–240 VAC/3A	—	—	—	—	TSXDSY08R5	TSXDSY16R5	—	—

- (1) Terminal block to be ordered separately.
(2) For use with Advantys Telefast ABE7 wiring system.



Type of module		Discrete I/O	
Connection		By HE 10 connector (2) high density	
Number of inputs		16 high-speed	
Number of protected outputs		12 solid state	12 reflex or timed
Output voltage/current	24 VDC/0.5 A	TSXDMY28FK	TSXDMY28RFK

- (2) For use with Advantys Telefast ABE7 wiring system.
Connection accessories: See www.us.telemecanique.com



Analog I/O modules

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Premium



Type of module		Analog input					
		High level with common point			High level isolated	Low level isolated	
Connection		By 25-way SUB-D connector					
Number of channels		4 high-speed	8	16	8	16	By terminal block (1)
Resolution		16 bits	12 bits		16 bits	16 bits	16 bits
Isolation	Between channels	Common point	Common point	Common point	± 200 VDC	± 100 VDC	± 2830 Vrms
	Between channels and earth	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1780 Vrms
Catalog number	High level input (2)	TSXAEY420	TSXAEY800	TSYAEY1600	TSXAEY810	–	–
	Multi-range	–	–	–	–	TSXAEY1614 (3)	TSXAEY414 (4)

- (1) Screw terminals **TSXBLY01** to be ordered separately.
(2) ± 10 V, 0–10 V, 0–5 V, 1–5 V, 0–20 mA, 4–20 mA.
(3) ± 63 mV thermocouple (B, E, J, K, L, N, R, S, T, U).
(4) ± 10 V, ± 5 V, 0–10 V, 0–5 V, 1–5 V, 0–20 mA, 4–20 mA, -13–+63 mV, 0–400 W, 0–3850 W, thermal probe, thermocouple.



Type of module		Analog output	
		Isolated	With common point
Connection		By screw terminals TSXBLY01 (5)	By 25-way SUB-D connector
Number of channels		4	8
Resolution		11 bits + sign	13 bits + sign
Isolation	Between channels	~ 1500 Vrms	Common point
	Between channels and earth	~ 1500 Vrms	~ 1000 Vrms
Catalog number	Input signal (6)	TSXASY410	TSXASY800

- (5) Terminal block to be ordered separately.
(6) ± 10 V, 0–10 V, 0–20 mA, 4–20 mA.
Connection accessories: See www.us.telemecanique.com

Modicon Premium

Automation platform Counter modules



3	Type of module	Counter		Counter/measurement	Electronic cam
	Type of inputs for	Sensors (1) Incremental encoders (2)		Sensors (1) Encoders (2)(3)	Incremental encoders (2) Absolute encoders (4)
	Counting	40 kHz		500 kHz/200 kHz (4)	
	Cycle time module	5 ms	10 ms	1 ms	–
	Number of channels	2	4	2	128 cams
	Number of axes	–	–	–	1
	Catalog number	TSXCTY2A	TSXCTY4A	TSXCTY2C	TSXCCY1128

(1) For 2/3-wire PNP/NPN 24 VDC sensors.

(2) For 5 VDC RS422, 10–30 VDC Totem Pole incremental encoders.

(3) For SSI serial or parallel output absolute encoders.

(4) For RS485 serial or parallel output absolute encoders.

Motion control modules



Module type		For translators (amplifier for stepper motor)		For analog control servomotors (for asynchronous and brushless motors)			
Control outputs		RS 422		+/- 10 V			
Compatible with drives		Lexium 05, Twin Line		Lexium 05/17D, Twin Line			
Functions	Linear axes	–		Limited	Limited or infinite	Limited or infinite(5)	
	Slave axes	–		With static ratio	With dynamic ratio	–	
Frequency for each axis		187 kHz		500 kHz with incremental encoder, 200 kHz with absolute encoder (6)			
Number of axes		1	2	2	4	2	3
Catalog number		TSXCFY11	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY42
				TSXCAY33			

(5) With linear interpolation on 2 or 3 axes.

(6) SSI serial or with parallel outputs.



Module type	Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs	SERCOS® network ring		
Compatible with ranges	Lexium 17D		
Functions	Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing	4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (7)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis	4 Mb SERCOS® network ring		
Number of axes	8 (8)	8 (8)	16 (9)
Catalog number	TSXCSY84	TSXCSY85	TSXCSY164

(7) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(8) 8 real axes, 4 imaginary axes and 4 remote axes.

(9) 16 axes (real axes, imaginary and remote axes).

Weighing modules



Type of module	ISP Plus supplied uncalibrated		supplied calibrated and  offer
Load cell inputs / outputs	50 measurements (for 1 to 8 load cells) / 2 discrete and 1 RS 485 for display unit		
Catalog number	Without display unit	TSXISPY101	Please consult your Schneider Electric agency
	With display unit TSXXBTH100	TSXISPY111	Please consult your Schneider Electric agency

Connection accessories: See www.us.telemecanique.com

Communication modules

Modicon
Premium



Type of module		Ethernet TCP/IP				
Speed		10 Mbps	10/100 Mbps			
Standard services		Ethway, TCP/IP (Uni-TE, Modbus)	TCP/IP (Uni-TE, Modbus)			
Transparent Ready	Class	C10	B30	B30	C30	D10
	Global Data	–	Yes	Yes	Yes	–
	I/O Scanning	–	Yes	Yes	Yes	–
	TCP Open	Yes	–	–	Yes	–
Web server	Standard services	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	–	–	Yes	–
	FactoryCast HMI services	–	–	–	–	Yes
Catalog number		TSXETY110WS	TSXP57 (1)	TSXETY4103	TSXETY5103	TSXWMY100

(1) Catalog numbers: see pages 3/30 and 3/31, Premium processors with integrated Ethernet TCP/IP port.



Type of module		AS-Interface cabling system	CANopen machine bus	Fipio manager fieldbus	INTERBUS fieldbus	Profibus DP fieldbus
Name and description		In-rack	PCMCIA	Integrated port	In-rack	In-rack
Speed		167 Kbps	20 K–1 Mbps	1 Mbps	0.5 Mbps	9.6 K–12 Mbps
Catalog number		TSXSAY1000	TSXCPP110	TSXP57 (2)	TSXIBY100	TSXPBY100

(2) Catalog numbers: see pages 3/30 and 3/31, Premium processors with integrated Fipio port.



Type of module		Serial links Uni-Telway			Modbus		ASCII
Name and description		Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
Speed		19.2 Kbps	19.2 Kbps	1.2–19.2 Kbps	19.2 Kbps	1.2–19.2 Kbps	1.2–19.2 Kbps
Catalog number	With interface	RS 485	TSXSCY21601 (2)	TSXSACP114	TSXSCY11601	TSXSACP114	TSXSACP114
	RS 232D	–	–	TSXSACP111	–	TSXSACP111	TSXSACP111
	20mA CL	–	–	TSXSACP112	–	TSXSACP112	TSXSACP112

(1) Catalog numbers: see pages 3/30 and 3/31, Premium processors with integrated Ethernet TCP/IP port.

(2) Also designed for Modbus serial (channel 0).



Type of module		Other networks Modbus Plus		Fipway	Fipio (agent function)
Name and description		PCMCIA card		PCMCIA card	PCMCIA card
Speed		1 Mbps		1 Mbps	1 Mbps
Catalog number		TSXMBP100		TSXFPP20	TSXFPP10

Connection accessories: See www.us.telemecanique.com



3	Type of processor		Simple applications	Simple and medium complexity applications
	Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.) 2 racks (1 main + 1 extension)	
		Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
	Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)	
		Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
	Type of application-specific I/O		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
	Communication ports (2)	Integrated Modbus	2 RS 232/RS 485	2 RS 232
		Modbus Plus	1 integrated, 2 in local rack	1 integrated, 6 in local rack
		Ethernet TCP/IP	2 in local rack	6 in local rack
		Fieldbus	Profibus DP: 2 in local rack	INTERBUS/Profibus DP: 6 in local rack
	Memory capacity	Integrated	2 Mb	2 Mb
		With PCMCIA extension	—	—
		Data storage	—	—
	Catalog number		140CPU31110	140CPU43412U

(1) The maximum values for the number of discrete or analog I/O are not cumulative.

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model.

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro).

Processors under Concept/ProWORX software



Type of processor		Simple applications	
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.) 2 racks (1 main + 1 extension)	
	Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
Type of application-specific I/O		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	1 RS 232	
	Modbus Plus	1 integrated, 2 in local rack	
	Ethernet TCP/IP	2 in local rack	
	Fieldbus	INTERBUS/Profibus DP: 2 in local rack	
Memory capacity	Integrated	256 Kb	512 Kb
Catalog number		Concept/ProWORX 140CPU11302	140CPU11303

(1) The maximum values for the number of discrete or analog I/O are not cumulative.

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model.

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro).



	Complex applications	Hot Standby redundant applications
	Unlimited (26 slots max.) 2 racks (1 main + 1 extension)	
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
	Unlimited (27 slots max.)	
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
	1 RS 232/485	
	1 integrated, 6 in local rack	
	1 integrated, 6 in local rack	6 in local rack
	Profibus DP: 6 in local rack	
	2 Mb	
	7 Mb	
	8 Mb	
	140CPU65150	140CPU65160 140CPU67160

3



	Simple and medium complexity applications	Complex applications
	Unlimited (27 slots max.) 2 racks (1 main + 1 extension)	
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
	Unlimited (27 slots max.)	
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs , time-stamp, serial link, AS-Interface sensor/actuator bus	
	2 RS 232	
	1 integrated, 6 in local rack	
	6 in local rack	
	INTERBUS/Profibus DP: 6 in local rack	
	2 Mb	4 Mb
	140CPU43412A (3)	140CPU53414B (3)

Modicon Quantum

Automation platform Power supply modules ⁽¹⁾



3

Type of power supply module for				Quantum				
Input voltage				24 VDC	48–60 VDC	100–150 VDC	120–230 VAC	115/230 VAC
Output current				8 A/3 A	8 A	8 A/3 A	8 A/3 A	11 A
Catalog number	Type	Standalone (1)	140CPS21100	–	140CPS51100	140CPS11100	–	
		Summable	140CPS21400	140CPS41400	–	–	140CPS11420	
		Redundant	140CPS22400	140CPS42400	140CPS52400	140CPS12400	140CPS12420	

(1) The output current for the standalone power supply modules is 3 A.

PCMCIA memory extensions



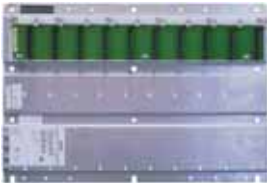
Type of PCMCIA card for Unity processors 140CPU65/67			Application		Additional data
Technology			SRAM	Flash EPROM	SRAM
Memory size	512 Kb/512 Kb (2)	–	TSXMRPC001M	TSXMFPP001M	–
	1 Mb (3)	–	TSXMRPC002M	TSXMFPP002M	–
	2 Mb (3)	–	TSXMRPC003M	–	–
	2 Mb/1 Mb (2)	–	–	TSXMRPC002M	–
	3 Mb (3)	–	–	TSXMRPC003M	–
	4 Mb	–	–	TSXMRPC004M	TSXMRPF004M
	7 Mb (3)	–	–	TSXMRPC007M	–
	8 Mb	–	–	–	TSXMRPF008M

(2) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc).

(3) By configuration the user can reserve part of the memory space for data storage (recipes, production data, etc).



Racks



Type			Racks	Rack extension module ⁽¹⁾
Dimensions W x D x H				
Catalog number	2 slots	104 x 104 x 290 mm	140XBP00200	–
	3 slots	143 x 104 x 290 mm	140XBP00300	–
	4 slots	184 x 104 x 290 mm	140XBP00400	–
	6 slots	265 x 104 x 290 mm	140XBP00600	–
	10 slots	428 x 104 x 290 mm	140XBP01000	–
	16 slots	671 x 104 x 290 mm	140XBP01600	–
	Rack extension		–	140XBE10000

(1) Local extension module, to be placed in main rack and secondary rack.

Connection accessories ⁽²⁾

Type		Cable for extension racks (main and secondary)
Catalog number	L = 1 m	140XCA71703
	L = 2 m	140XCA71706
	L = 3 m	140XCA71709

(2) Other accessories: See www.us.telemecanique.com

Modicon Quantum

Automation platform Discrete I/O modules



Type of module		Discrete inputs					
Connection		By screw terminals 140XTS00200 (to be ordered separately)					
Number of isolated channels		16	4 groups of 8	3 groups of 8	2 groups of 8	6 groups of 16	8 groups of 2
Input voltage	5 VDC TTL (negative logic)	–	140DDI15310	–	–	–	–
	24 VDC	–	140DDI35300(1)	–	–	140DDI36400	–
	10–60 VDC	–	140DDI85300	–	–	–	140DDI84100
	20–30 VDC	–	140DSI35300(1)	–	–	–	–
	125 VDC	–	–	140DDI67300	–	–	–
	24 VAC	140DAI34000	140DAI35300	–	–	–	–
	48 VAC	140DAI44000	140DAI45300	–	–	–	–
	115 VAC	140DAI54000	140DAI55300	–	140DAI54300	–	–
	230 VAC	140DAI74000	140DAI75300	–	–	–	–

(1) For negative logic, replace 00 at the end of the Catalog number with 10, for example **140DDI35300** becomes **140DDI35310**.



Type of module		Discrete outputs Solid state					
Connection		By screw terminals 140XTS00200 (to be ordered separately)					
Number of protected channels		16	4 groups of 8	4 groups of 4	2 groups of 8	6 groups of 16	2 groups of 6
Output voltage/current	5 VDC TTL/0.075 A (2)	–	140DDO15310	–	–	–	–
	24 VDC/0.5 A	–	140DDO35301(1)	–	–	–	–
	10–30 VDC/0.5 A (3)	–	140DVO85300	–	–	–	–
	19.2–30 VDC/0.5 A	–	–	–	–	140DDO36400	–
	10–60 VDC/2 A	–	–	–	140DDO84300	–	–
	24–125 VDC/0.75 A	–	–	–	–	–	140DDO88500
	24–48 VAC/4 A	–	–	140DAO84220	–	–	–
	24–115 VAC/4 A	140DAO84010	–	–	–	–	–
	24–230 VAC/ 4-3 A	140DAO84000	140DAO85300	–	–	–	–
	100–230 VAC/4-3 A	–	–	140DAO84210	–	–	–

(1) For negative logic, replace 01 at the end of the catalog number with 10, for example **140DDO35301** becomes **140DDO35310**.

(2) Negative logic.

(3) Controlled outputs.



Type of module		Discrete I/O – mixed Solid state			Discrete outputs Relay	
Connection		By screw terminals 140XTS00200 (to be ordered separately)			–	–
Number of I/O		2 groups of 8/2 groups of 4		1 group of 4/ 4 isolated	–/16 NO	–/8 NO/NC
Input voltage		24 VDC	125 VAC	125 VDC	–	–
Output voltage/current		30 VDC/15 A	125 VAC/4 A	125 VDC/4 A	150 VDC or 250 VAC/2 A	150 VDC or 250 VAC/5 A
Catalog number		140DDM39000	140DAM59000	140DDM69000	140DRA84000	140DRC83000

Connection accessories: See www.us.telemecanique.com

Analog I/O modules

Modicon
Quantum



Type of module	Analog inputs				
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	8	16	8		
Input signal	4–20 mA 1–5 V	0–25/20 mA 4–20 mA	(1)	Thermal probe Pt, Ni	Thermocouple (2)
Resolution	12 bits	0–25000 points	16 bits	12 bits + sign	16 bits
Catalog number	140ACI03000	140ACI04000	140AVI03000	140ARI03010	140ATI03000

(1) 0–25 mA, ± 20 mA, 4–20 mA, 0–10 V, ± 10 V, 0–5 V, ± 5 V, 1–5 V.
(2) Type B, E, J, K, R, S, T, mV.



Type of module	Analog output		
Connection	By screw terminals 140XTS00200 (to be ordered separately)		
Number of channels	4	8	4
Input signal	4–20 mA	0–25/20 mA 4–20 mA	0–10 V, ± 10 V 0–5 V, ± 5 V
Resolution	12 bits	0–25000 points	12 bits
Catalog number	140ACO02000	140ACO13000	140AVO02000



Type of module	Analog I/O
Connection	By screw terminals 140XTS00200 (to be ordered separately)
Number of inputs	4
Number of outputs	2
Input signal	0–20 mA, ± 20 mA, 4–20 mA, 0–10 V, ± 10 V, 0–5 V, ± 5 V, 1–5 V.
Resolution	Inputs 16 bits, outputs 12 bits
Catalog number	140AMM09000

Connection accessories: See www.us.telemecanique.com

Modicon Quantum

Automation platform Intrinsically safe I/O modules



3	Type of module	Inputs/Outputs				
		Discrete		Analog		
	Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50020, EN 50284, EN 50281-1				
	Zone D (dust)	Mounted outside zone (to be used in conjunction with products for zone 20, 21 or 22)				
	EC type examination certificate number / marking	SIRA 02ATEX2345X  II (1) G/D-[EEx ia] IIC				
	Connection	By screw terminal 140XTS33200 (to be ordered separately)				
	Number of inputs	8	–	8	–	
	Number of outputs	–	8	–	8	
	Signal inputs	–	–	Thermal probe Thermocouple (1)	0–25/20 mA 4–25 mA	–
Resolution	–	–	12 bits + sign	0–25000 points	15 bits	
Catalog number	140DII33000	140DIO33000	140AII33000	140AII33010	140AIO33000	

(1) Type J, K, E, T, S, R, B, mV.

Counter and special purpose modules



Type of module	High-speed counter		High-speed inputs with interrupt	Time-stamp system	
Type of inputs for	Incremental encoders		Discrete 24 VDC (2)	DCF 77 24 VDC (3)	Discrete 24–125 VDC
Counting frequency	100 kHz	500 kHz	–	–	–
Number of channels	5	2	16	1	32
Catalog number	140EHC10500	140EHC20200	140HLI34000	140DCF07700	140ERT85410

(2) 3 operating modes: Interrupt, latch, high-speed inputs, on rising or falling edge.

(3) For GPS or DCF time receiver.



Communication



Type of module		Ethernet TCP/IP network			
Speed		10/100 Mbps			
Standard services		TCP/IP(Modbus)			
Transparent Ready	Class	B30	B30	C30	D10
	Global Data	Yes	Yes	Yes	–
	I/O Scanning	Yes	Yes	Yes	–
	FDR server	Yes	Yes	Yes	–
	SNMP protocol	Yes	Yes	Yes	Yes
Web server	Standard services	Yes	Yes	Yes	Yes
	FactoryCast services	–	–	Yes	Yes
	FactoryCast HMI services	–	–	–	Yes
Catalog number		140CPU651 (1)	140NOE77101	140NOE77111	140NWM10000

(1) Catalog numbers: see pages 3/38 and 3/39, Quantum processors with integrated Ethernet TCP/IP.



Type of module	Modbus Plus network	AS-Interface cabling system	INTERBUS fieldbus (2)	Profibus DP V0 fieldbus (3)
Name and description	Integrated link	In-rack	In-rack	In-rack
Speed	1 Mbps	167 Kbps	1 Mbps	9,6 K–12 Mbps
Catalog number	140CPU (4)	140EIA92100	140NOA61100	140CRP81100

(2) Compatible with concept and ProWORK32 software.

(3) Available in Profibus DP V1 version, please consult your Schneider Electric agency.

(4) Catalog numbers: see pages 3/38 and 3/39, Quantum processors with integrated Modbus Plus.



Type of module	Serial link Modbus	ASCII
Name and description	Integrated link	In-rack
Speed	19.2 Kbps	19.2 Kbps
Catalog number	140CPU (5) (6)	140ESI06210

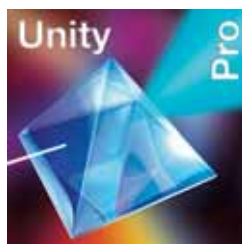
(5) Catalog numbers: see pages 3/38 and 3/39, Quantum processors with integrated Modbus.

(6) RS 232/RS 485 on 140CPU651pp and 140CPU67160 processors and RS 232 on 140CPU31110, 140CPU43412A, 140CPU53414A processors.

Connection accessories: See www.us.telemecanique.com

Automation

Unity™ software For Modicon Premium, Quantum and Atrium slot PLCs



3	Type of software		Unity Pro Medium version 2.2			
	Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)
	Catalog number	Software package	UNYSPUMFUCD22	UNYSPUMFGCD22	–	–
		Update (1)	UNYSPUMZUCD22	UNYSPUMZGCD22	–	–
	Type of software		Unity Pro Large version 2.2			
	Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)
	Catalog number	Software package	UNYSPULFUCD22	UNYSPULFGCD22	UNYSPULFTCD22	UNYSPULFFCD22
		Update (1)	UNYSPULZUCD22	UNYSPULZGCD22	UNYSPULZTCD202	UNYSPULZFCDD22
	Type of software		Unity Pro Extra large version 2.2			
	Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)
Catalog number	Software package	UNYSPUEFUCD22	UNYSPUEFGCD22	UNYSPUEFTCD22	UNYSPUEFFCD22	
	Update (2)	UNYSPUEZUCD22	UNYSPUEZGCD22	UNYSPUEZTCD22	UNYSPUEZFCD22	

(1) From Concept M et PL7 junior.

(2) From Concept M, PL7 junior, ProWORXNxT and ProWORX 32.



Unity Pro is the common programming, debugging and operating software for the Premium, Atrium and Quantum ranges of PLCs. It is based on the standards set by PL7 and Concept software and provides a comprehensive set of new functions for greater productivity and openness to other software.

The five IEC61131-3 languages are supported as standard in Unity Pro with all the debugging functions, on the simulator or directly online with the PLC.

Thanks to independent symbolic memory variables, structured data and user function blocks, the application objects directly reflect the application-specific components of the automated process.

Using graphic libraries, the Unity Pro operator screens are configured in the application by the user. Operator access is simple and direct.

Debugging and maintenance are made simple by animated graphic objects.

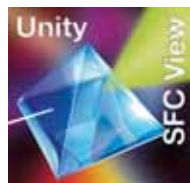
For diagnostics, a display window provides a clear display in chronological order (time-stamped at source) of all system and application faults. The navigation function for finding the causes of faults traces missing conditions back to the source.

The standard XML Web format for exchanging data has been adopted as the source format for Unity applications. All or part of the application can be exchanged with other software in the project simply using the Import/Export function.

The converters integrated in Unity Pro automatically convert IEC 61131-3 PL7 and Concept standards and applications.

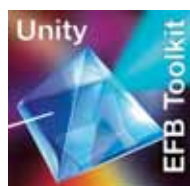
Unity software Specialist tools

Automation



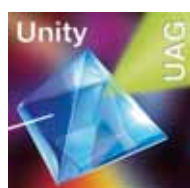
SFC View application diagnostic and monitoring software

Type of software		Unity SFC View		
Type of license version 2.0		Single (1 station)	Group (10 stations)	Site (100 stations)
Catalog number	Software package	UNYSDUMFUCD20	UNYSDUMFTCD20	UNYSDUMFFCD20



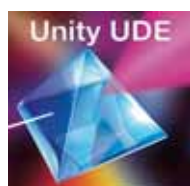
EF/EFB function development software in C language

Type of software		Unity EFB Toolkit		
Type of license		Single (1 station), English version (software and manual)		
Catalog number	Software package	UNYSPUZFUCD20E		
	Renewal	UNYCSPSPUDBU		



Software for designing and generating batch/process applications

Type of software		Unity UAG (Unity application generator)		
Type of license version 2.2		Single (1 station)	Site	
Catalog number	Medium Software package	UAGSEWMFUCD22	UAGSEWMFFCD22	
	Large Software package	UAGSEWLFUCD22	UAGSEWLFCD22	

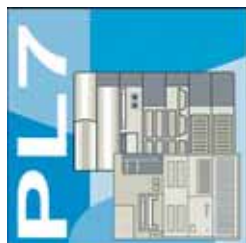


Pack for developing specific solutions

Type of software		Unity UDE (Unity Developer's Edition)		
Type of license		Single (1 station)		
Catalog number	Software package	UNYUDEVFUCD20E		

Automation

Programming software For Modicon TSX Micro and Premium



PL7 is the common programming, debugging and operating software for the TSX Micro and Premium ranges of PLCs (see pages 3/26 and 3/37).

PL7 offers 4 IEC languages: Instruction List (IL), Ladder Diagram (LD), Structured Text (ST) and Sequential Function Chart (SFC). You can use the most suitable language for each function in your application, making use of the multi-tasking structure of the processors.

For using application-specific functions, PL7 directly integrates the application-specific screens required for configuration and adjustment as well as supervisory and diagnostics activities.

3	Type of software		PL7 Micro for TSX Micro platform			
	Type of license version 4.5		Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
	Catalog number	Software package (1)	TLXCDPL7MPPU45M	TLXCDPL7MPPC45M	TLXCD3PL7MPPU45M	TLXOTPL7MP45M
		Update (2)	TLXRC DPL7MP45M	TLXRC DPL7MPC45M	TLXRC D3PL7MP45M	–
			PL7 Junior forTSX Micro/Premium and Atrium coprocessor platforms			
	Type of license version 4.5		Single (1 station)	Group (3 stations)		
	Catalog number	Software package (1)	TLXCDPL7JPU45M	TLXCD3PL7JPU45M		
		Update (2)	TLXRC DPL7JP45M	TLXRC3DPL7JP45M		
		Upgrade (3)	TLXUC DPL7JP45M	TLXUCD3PL7JP45M		
			PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms			
	Type of license version 4.5		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
	Catalog number	Software package (1)	TLXCDPL7PPU45M	TLXCD3PL7PPU45M	TLXOTPL7PP45M	TLXOSPL7PP45M
		Update (2)	TLXRC DPL7PP45M	TLXRC D3PL7PP45M	–	–
		Upgrade (3)	TLXUC DPL7PP45M	TLXUCD3PL7PP45M	–	–

(1) **PU** at the end of the catalog number : software package supplied with cable for USB port on PC, replace with **P** for cable for RS 232C port on PC.

(2) From the previous software version.

(3) From lower level, earlier version software.

Specialist tools

EF function development software in C language

Type of software		PL7 SDKC for EF function development software in C language
PL7 SDKC software extension		For PL7 Micro/Junior/Pro
Catalog number		TLXLSKCP741M

Development of applications in C language

Type of software		PL7 FUZ for processing process applications using fuzzy logic
PL7 FUZ software extension		For PL7 Micro/Junior/Pro, TSX Micro/Premium
Catalog number		TLXLPL7FUZ34M

Comparison of PL7 applications

Type of software		PL7 DIF for comparison of applications
PL7 DIF software extension		For PL7 Pro, TSX Micro/Premium
Type of license		Single (1 station) Site (> 10 stations)
Catalog number		TLXCDPL7DIF42 TLXOSPL7DIF42

Availability of control systems based on Premium platforms

Type of software		Warm Standby redundant
Warm Standby software extension		For PL7 Junior/Pro
Type of license		Single (1 station)
Catalog number		TLXCDWSBYP40F / E



Programming software **Automation** For Modicon Quantum, Momentum



Concept is the IEC programming software for the Momentum and Quantum range of PLCs. It provides advanced Microsoft Windows based tools that deliver a multi-language development environment for control system programming.

Uses familiar, standardized editors, bundled in a single application to create and integrate PLC control, communication and diagnostic logic.

Five IEC editors give users the freedom to choose the programming language that fits their application requirements: Function Block Diagram (FBD), Ladder Diagram (LD), Sequential Function Chart (SFC), Structured Text (ST) and Instruction List (IL).

Type of software		Concept for Quantum/Momentum platforms			
Type of license version 2.6		Single (1 station)	Group (3 stations)	10 users (10 stations)	Site
Software references	Concept S	372SPU47101V26	–	–	–
	Concept M	372SPU47201V26	–	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26	372SPU47431V26
Update references	Concept S (3)	372ESS47101	–	–	–
	Concept M (3)	372ESS47201	–	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ISS4740310	372ISS4741000

(3) From an earlier software version.

Specialist tools

EF/EFB function development software in C language

Type of software		Concept EFB Toolkit	
Type of license		Version 2.6	Upgrade version 2.6
Catalog number	Software package	332SPU47001V26	372ESS47001

Concept application loader software

Type of software		Concept Application Loader	
Type of license		Version 2.6	
Catalog number	Software package	372SPU47701V26	

Software for designing and generating batch/process applications

Type of software		Unity UAG (Unity application generator)	
Type of license version 2.2		Single (1 station)	Site
Catalog number	Medium Software package	UAGSEWMFUCD22	UAGSEWMFFCD22
	Large Software package	UAGSEWLFUCD22	UAGSEWLFFCD22

SFC View application diagnostic and monitoring software

Type of software		Concept SFC View		
Type of license version 3.0		Single (1 station)	Group (10 stations)	Site (100 stations)
Catalog number		372SFV16000V30	372SFV16020V30	372SFV16030V30

ProWORX for Modicon Quantum, Momentum

ProWORX 32 is the flexible, easy-to-use cross-platform LL984-programming software for Modicon range PLCs. It gives you the power to program your Modicon controllers online or offline, manage your I/O subsystems, and analyze your plant's activity in real-time, all in a familiar Windows environment.

ProWORX 32 provides client/server capabilities to organize user-groups and -rights, store projects at a central location and realize office-plant floor bridging.

The project emulator provides the ability to test projects prior to running them in the PLC run-time environment to ensure your system will run at peak efficiency.

Type of software		ProWORX for Quantum/Momentum platforms			
Type of license version 2.0		Single (1 station)	Group (3 stations)	Multi-user (10 stations)	Site
Software catalog numbers	ProWORX 32 Server	372SPU78001PSEV	–	–	–
	ProWORX 32 Suite	372SPU78001PSSV	–	–	–
	ProWORX 32 Client, Full Dev.	372SPU78001PDEV	372SPU78001PSTH	372SPU78001PSTE	372SPU78001SITE
	ProWORX 32 Online	372SPU78101PONL	–	–	–
	ProWORX 32 Lite	372SPU71001PLDV	372SPU71001PLTH	372SPU71001PLTE	–
Upgrade to ProWORX 32 catalog numbers (4)		372SPU78401LPUP	372SPU78401LPTH	372SPU78401LPTE	–

(4) Only possible for customers, who are "up-to-date" with CSP (continuing support program)

Accessories : See www.us.telemecanique.com

For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemecanique.com





3	Type of module	Discrete inputs			
	Connection	By screw terminals 170XTS00100 or spring teminals 170XTS00200 (to be ordered separately)			
	Input voltage	24 VDC		120 VAC	230 VAC
	Number of channels	16 (1 common point)	32 (2 common points)	16 (2 common points)	
	DimensionsW x D x H	125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)			
	Catalog number	170ADI34000	170ADI35000	170ADI54050	170ADI74050



Type of module		Discrete outputs							
		Solid state				Triac			
Connection		By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)							
Output voltage		5-24 VAC, 24-230 VAC		24 VDC		120 VAC		230 VAC	
Number of protected channels		6	16	32	8	16	8	16	
		(1 common pt)	(2 common pts)	(2 common pts)	(2 common pts)	(2 common pts)	(2 common pts)	(2 common pts)	
Output current	Per channel	5A	0.5 A	0.5 A	2 A	0.5 A	2 A	0.5 A	
	Per group of channels	—	4 A	8 A	4 A	4 A	4 A	4 A	
	Per module	21A	8 A	16 A	8 A	8 A	8 A	8 A	
DimensionsW x D x H		125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)							
Catalog number		170ADO83030	170ADO34000	170ADO35000	170ADO53050	170ADO54050	170ADO73050	170ADO74050	



Type of module		Discrete I/O						
		Solid state				Relay		Triac
Connection		By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)						
Number of channels	Inputs	16 (1 common pt)	16 (4 com. pts)	16 (1 com. pt)	10 (1 common pt)			
	Input logic	Positive	Positive (1)	Negative	Positive			—
	Outputs	16 (1 common pt)	16 (2 common pts)		8/4 (1 com. pt)	12	8 (2 common pts)	8 (1 com. pt)
Input voltage		12–48 VDC	24 VDC					120 VAC
Output voltage		12–48 VDC	24 VDC				24–230 VAC/20–115 VDC	120 VAC
Output current	Per output	0.5 A	0.5 A		2 A	0.5 A	2 A	0.5 A
	Per group of channels	—	4 A		4 A	4/2 A	8 A	4 A
	Per module	8 A	8 A		8 A	6 A	16 A	4 A
Dimensions W x D x H		125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)						
Catalog number		170ADM85010	170ADM35010	170ADM35015	170ADM37010	170ADM39010	170ADM39030	170ARM37030 170ADM69051

(1) For a version with high-speed positive logic, replace 0 at the end of the catalog number with 1. E.g. 170ADM35010 becomes 170ADM35011.

Connection accessories: See www.us.telemecanique.com

Analog I/O modules

Modicon
Momentum



Type of module	Analog inputs		
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)		
Number of channels	8 isolated	16 with common point	4 isolated
Input signal	$\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ mA}$, 1–5 V, 4–20 mA	$\pm 5\text{ V}$, $\pm 10\text{ V}$, 4–20 mA	Multi-range $\pm 25\text{ mV}$, $\pm 10\text{ mV}$ (1)
Resolution	14 bits + sign, 15 bits unipolar	12 bits + sign	15 bits + sign
Dimensions W x D x H	125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)		
Catalog number	170AAI03000	170AAI14000	170AAI52040

(1) Temperature probe: Pt 100, Pt 1000, Ni 100, Ni 1000, Thermocouple: B, E, J, K, N, R, S, T.



Type of module		Analog outputs		Analog I/O and discrete I/O		
Connection		By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	Inputs	–		4 differential + 4 discrete	6 with com pt + 8 discrete (24 VDC)	
	Outputs	4		2 + 2 discrete (24VDC)	4 with com pt + 8 discrete (24 VDC)	
Input signal		± 10 V, 0–20 mA	± 10 V, 4–20 mA	± 5 V, ± 10 V, ± 20 mA, 1–5 V, 4–20 mA	0–10 V	± 10 V
Output signal		–		± 10 V, 4–20 mA	0–10 V	± 10 V
Resolution		12 bits + sign		12–14 bits dep. on signal	14 bits	14 bits
Dimensions W x D x H		125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)				
Catalog number		170AAO12000	170AAO92100	170AMM09000	170ANR12090	170ANR12091

Application-specific I/O modules



Type of module	High-speed counter	Discrete I/O with Modbus port
Type of inputs for	Incremental or absolute encoders	RS 485 Modbus port
Operating voltage	24 VDC	120 VAC
Counting frequency	200 kHz	–
Number of channels	2 independent	–
Number of discrete I/O	2 x 3 inputs/2 x 2 outputs	6 inputs/3 outputs
Dimensions W x D x H	125 x 47.5 x 141.5 mm (with communication modules or M1/M1E processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)	
Catalog number	170AEC92000	170ADM54080

Modicon Momentum

Distributed I/O and processors Communication modules



3	Type of module	Ethernet TCP/IP network		Fipio fieldbus	INTERBUS (1) fieldbus	Profibus DP fieldbus
	Speed	10 Mbps	10/100 Mbps	1 Mbps	0.5 Mbps	9.6 K–12 Mbps
	Manager PLC	—		Premium	-	-
	Redundancy	No		No	No	No
	Standard services	Modbus TCP/IP		—	—	—
	Catalog number	170ENT11002	170ENT11001	170FNT11001	170INT11000 (1)	170DNT11000

(1) Generation 4, twisted pair medium: **170INT11003**, with optical fiber medium: **170INT12000**.



Type of module	Other networks		DeviceNet
	Modbus Plus		
Speed	1 Mbps		0.5 Mbps
Manager PLC	Premium or Quantum IEC	Quantum IEC	—
Redundancy	No	Yes	No
Standard services	—		—
Catalog number	170PNT11020 (2)	170PNT16020 (2)	170LNT71000

(2) For 984 data format, use 170NEF11021 (not redundant) or 170NEF16021 (redundant).

Optional modules for M1/M1E processors



Type of module (3)	Modbus Plus		Asynchronous serial link
Communication ports	1 Modbus Plus	2 redundant Modbus Plus	1 RS 232/RS 485 Modbus
Real-time clock	Integrated, ± 13 sec/day accuracy		
Connection	By 9-way SUB-D connector		
Catalog number	172PNN21022	172PNN26022	172JNN21032

(3) Include save battery of the M1/M1E processors application and data memories.

Connection accessories

Type	RS 232C communication cable		
Length	1 m	3 m	6 m
Catalog number	110XCA28201	110XCA28202	110XCA28203

Connection accessories: See www.us.telemecanique.com



M1/M1E processors

Modicon
Momentum



Type of processor		M1				
Number of I/O	Discrete	2048 I/O			2048 I/2048 Q	8192 I/O
	Registers	2048 words			4096 words	26048 words
Integrated communication ports	Modbus	1 RS 232C		1 RS 232C + 1 RS 485	1 RS 232C	1 RS 232C + 1 RS 485
	Ether netTCP/IP	–				
	I/O bus (1)	–			1 I/O port	–
Transparent Ready	Embedded Web server	–				
Memory capacity	RAM	64 Kb			256 Kb	512 Kb
	Flash	256 Kb			256 Kb	512 Kb
	User, 984 LL language (2)	2.4 K			12 K	18 K
	User, IEC language (3)	–			160 K	240 K
	Data	2 K			4 K	24 K
Cycle time		1 ms/K	0.63 ms/K	1 ms/K	0.63 ms/K	1 ms/K
Catalog number		171CCS70000	171CCS70010	171CCS78000	171CCS76000	171CCC78010

(1) I/O bus derived from INTERBUS bus.
(2) ProWORX 32 or Concept programming software.
(3) Concept programming software.



Type of processor		M1	M1E			
Number of I/O	Discrete	8192 I/O				
	Registers	26048 w words				
Integrated communication ports	Modbus	1 RS 232C	1 RS 485	—		
	EthernetTCP/IP	—	1 integrated Ethernet port		—	
	I/O bus (1)	1 I/O port	—	1 I/O port		
Transparent Ready	Embedded Web server	—	Standard services (class A10)			
Memory capacity	RAM	512 Kb	544 Kb			
	Flash	512 Kb	1 Mb	512 Kb	1 Mb	
	User, 984 LL language (2)	18 K				
	User, IEC language (3)	240 K	—	200 K	—	200 K
	Data	24 K				
Cycle time		1 ms/K	0.3 ms/K			
Catalog number		171CCC76010	171CCC98020	171CCC98030	171CCC96020	171CCC96030

Power supply module ⁽⁴⁾



Type of power supply module for	Momentum processors
Input voltage	120 or 230 VAC (selected by jumper)
Output voltage	24 VDC
Output current	0.7 A
Dimensions W x D x H	73 x 44.5 x 146 mm
Catalog number	170CPS11100

(4) Process power supplies see chapter 6 “Power supply”.



3

ConneXium Ethernet Switches			4 PORT			8 PORT		
			4 TX	3TX/1FX-MM(SM*)	2TX/2FX-MM(SM*)	8TX	7TX/1FX-MM(SM*)	6TX/2FX-MM(SM*)
Interfaces	Copper cable ports	Number and type	4 x 10BASE-T/ 100BASE-TX Ports	3 x 10BASE-T/ 100BASE-TX Ports	2 x 10BASE-T/ 100BASE-TX Ports	8 x 10BASE-T/ 100BASE-TX Ports	7 x 10BASE-T/ 100BASE-TX Ports	6 x 10BASE-T/ 100BASE-TX Ports
		Shielded connectors	RJ45			RJ45		
		Medium	Shielded twisted pair, CAT5E			Shielded twisted pair, CAT5E		
		Max. distances	100 m			100 m		
	Optical fiber ports	Number and type	–	1 X 100BASE-FX ports	1 X 100BASE-FX ports	–	1 X 100BASE-FX ports	1 X 100BASE-FX ports
		Connectors	–	SC	SC	–	SC	SC
		Medium	–	Multimode fiber (or Single Mode*)	Multimode fiber (or Single Mode*)	–	Multimode fiber (or Single Mode*)	Multimode fiber (or Single Mode*)
		Fiber length						
		50/125 μm	–	5000 m (1)	5000 m (1)	–	5000 m (1)	5000 m (1)
		62.2/125 μm	–	4000 m (1)	4000 m (1)	–	4000 m (1)	4000 m (1)
		9/125 μm	–			–		
	Ethernet services		FDR client, SNMP V3, SNTP, multicast filtering for optimization of the Global Data protocol, Web based configuration VLAN, IGMP Snooping, RSTP (Rapid Scanning Tree Protocol), Port priority, Flow control, Port security, PTP Client (Precision Time Protocol) according to IEEE 1588					
Topology	No. of Switches	Cascaded	Any					
		Redundant in a ring	50 max.					
Redundancy			P1 and P2 redundant power supplies					
Power supply	Voltage		24 VAC (9.6–60 VDC and 18–32 VDC), safety extra low voltage (SELV)					
	Power consumption		5.3 W	6.5 W	7.7 W	5.3 W	6.5 W	7.3 W
	Removable terminals 5-way		Yes					
Operating temperature			0 to 60 °C (+32 to +131°F)					
Relative humidity			10–95% non-condensing					
Degree of protection			IP20					
Dimensions W x H x D			47 x 131 x 111 mm			74 x 131 x 111 mm		
Conformity to standards			CE and IEC 61131-2, cUL 60950, UL 508 and CSA 14, UL 1604 and CSA 213 Class 1 Division 2, e, GL					
LED indicators			P1 and P2 power supplies, Ethernet link status, redundancy management					
Alarm contact			Power supply failure, permanent fault in hub, faulty link status of TP port (volt-free contact 1 A max. under 24 VAC)					
Catalog number			TCSESM043F23F0	TCSESM043F1CU0 *TCSESM043F1CS0	TCSESM043F2CU0 *TCSESM043F2CS0	TCSESM083F1CU0 *TCSESM083F1CS0	TCSESM083F2CU0 *TCSESM083F2CS0	TCSESM163F23F0

(1) Depends on the optical fiber budget and fiber attenuation (typical specification: 2 km).

(2) Depends on the optical fiber budget and fiber attenuation (typical specification: 15 km).



ConneXium Ethernet Switches			16 PORT		24 PORT	GIGABIT 10 PORT		GIGABIT
			16 TX	14TX/2FX-MM	22TX/2FX-MM	8TX/2TX-Gbit	8TX/2SFP-Gbit	Fiber modules
Interfaces	Copper cable ports	Number and type	16 x 10BASE-T/100BASE-TX Ports	14 x 10BASE-T/100BASE-TX Ports	22 x 10BASE-T/100BASE-TX Ports	8x10/100BASE-TX 2x10/100/1000-TX	8x10/100BASE-TX	2max.@1000-FX
		Shielded connectors	RJ45			RJ45		
		Medium	Shielded twisted pair, CAT5E			Shielded twisted pair, CAT5E		
		Max. distances	100 m			100 m		
	Optical fiber ports	Number and type	–	2 X 100BASE-FX ports	1 X 100BASE-FX ports	–	1 X 100BASE-FX ports	1 X 100BASE-FX ports
		Connectors	–	SC	SC	–	SFP	SFP
		Medium	–	Multimode fiber	Multimode fiber	–	Order 2 max. configurable fiber modules	Multimode or single mode fiber
		Fiber length						
		50/125 μm	–	5000 m (1)	5000 m (1)	–	choose options	550 m
		62.2/125 μm	–	4000 m (1)	4000 m (1)	–	choose options	675 m or 20 Km
		9/125 μm	–			–	choose options	72 Km
		Ethernet services	FDR client, SNMP V3, SNTP, multicast filtering for optimization of the Global Data protocol, Web based configuration VLAN, IGMP Snooping, RSTP (Rapid Scanning Tree Protocol), Port priority, Flow control, Port security, PTP Client (Precision Time Protocol) according to IEEE 1588					
Topology	Number of Switches	Cascaded	Any					
		Redundant in a ring	50 max.					
Redundancy			P1 and P2 redundant power supplies					
Power supply	Voltage		24 VAC (9.6–60 VDC and 18–32 VDC), safety extra low voltage (SELV)					
	Power consumption		9.4 W	11.8 W	15.5 W	8.9 W	8.3 w	–
	Removable terminals 5-way		Yes					
Operating temperature			0 to 60 °C (+32 to +131°F)					
Relative humidity			10–95% non-condensing					
Degree of protection			IP20					
Dimensions W x H x D			111 x 131 x 111 mm			74 x 131 x 111 mm		–
Conformity to standards			CE and IEC 61131-2, cUL 60950, UL 508 and CSA 14, UL 1604 and CSA 213 Class 1 Division 2, e, GL					
LED indicators			P1 and P2 power supplies, Ethernet link status, redundancy management					
Alarm contact			Power supply failure, permanent fault in hub, faulty link status of TP port (voltage-free contact 1 A max. under 24 VAC)					
Catalog number			TCSESM163F23F0	TCSESM163F2CU0	TCSESM243F2CU0	TCSESM103F23G0	TCSESM103F2LG0	TCSEAAF1LFU00 TCSEAAF1LFS00 TCSEAAF1LFH00

(1) Depends on the optical fiber budget and fiber attenuation (typical specification: 2 km).

(2) Depends on the optical fiber budget and fiber attenuation (typical specification: 15 km).

ConneXview Software



ConneXview™ is a user-friendly, powerful diagnostic software program that lets you visualize your entire network on a single screen, making it easy to monitor, edit and troubleshoot your industrial Ethernet networks. More than just a simple tool to visualize your network, ConneXview allows users to perform a wide variety of intelligent functions to keep your network traffic moving at peak efficiency, and your entire factory moving at optimum productivity.

- Reduce downtime & increase productivity
- Optimize network performance and efficiency
- Decrease maintenance and startup costs
- Increase system quality and performance

- TCSEAZ01PSFE10 Single user license
- TCSEAZ01PGFE10 Group license (3-user)
- TCSEAZ01PTFE10 Team license (10-user)
- TCSEAZ01PFFE10 Site license (Facility license)

Motion and Drives

The *simplicity* of a complete offer

Altistart, Altivar

A solution for every softstarting and adjustable speed application

Simple machines
>>> *compact*



Starters
Altistart 01
b 0.25 to 75 Hp



Drives
Altivar 11
b 0.25 to 3 Hp



Drives
Altivar 31
b 0.25 to 20 Hp

Pumping and ventilation
machines
>>> *tailor-made*



Starters
Altistart 48
b 2 to 1200 Hp



Drives
Altivar 21
b 1 to 40 Hp



Drives
Altivar 61
b 0.5 to 900 Hp

Complex machines,
high power
>>> *high performance*



Drives
Altivar 71
b 0.5 to 700 Hp

Lexium *High-performance* motion control

Lexium has added to its Telemecanique motion control offer by offering Lexium 05 drives for servo motors, available in four sizes. Combined with motors in the BSH series, this new range provides compact drive solutions ranging in power from 0.4 to 6 kW.

Complete offer for general *motion control*.



Lexium 05 drives from 4 A to 25 A
b Lexium 05 operates in either torque or speed control mode by means of its ± 10 V analog interface. Its encoder interface also performs the function of an electronic gearbox.



Lexium 17D drives from 1.5 A to 20 A and 40 A to 70 A
b High-technology digital drives for brushless motors.
b "All in one" concept integrating: EMC filters, braking resistors (reduction in system cost and dimensions), simple indexer and built-in transmission for simple applications.



Motors
4 ranges:
BSH from 0.5 to 36 Nm
BPL from 1.1 to 5.4 Nm
BPH from 0.4 to 100 Nm
SER from 1.1 to 13.4 Nm

The essentials
A simplified selection guide to help you quickly select your motion control products.



PowerSuite 2 :

Altivar drives and Altistart soft starters configuration software.

Customize your settings with **minimum effort!**

- b** Simplified definition of parameters
- b** Prepare and print parameter configurations
- b** Comparison of files
- b** Quick reproduction of settings on all similar applications
- b** Remote monitoring, etc.



Wide variety of control architectures:

- b** Fieldbus: FIPIO, CanOpen (native), Modbus Plus, Profibus DP
- b** SERCOS®: high-technology fully digital motion with Premium or Quantum processing

4 motor ranges are associated with the drives:

b BSH servo motors from 0.5 to 36 Nm:

- > Compact servomotors with low inertia
- > Extensive speed range from 1500 to 8000 min⁻¹
- > IP40 or IP65 protection, brake, single turn or multiturn SinCos encoder
- > Straight or right angle connectors

b BPL and BPH motors from 0.4 to 100 Nm:

- > Brushless motors with high torque-inertia ratio
- > Extensive power range: 0.4 to 100 Nm continuous operation, 1 to 230 Nm peak operation
- > IP67 protection, brake, high-resolution SinCos feedback

b SER motors from 0.3 to 13.4 Nm:

- > Specially adapted to the needs of OEMs
- > Wide power range: 1.1 to 13.4 Nm continuous operation, 2.5 to 38 Nm peak operation. High-resolution SinCos feedback as standard
- > IP 56 protection, brake, etc

Contents

Soft starters and variable speed drives

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Motion modules and servo drives

b Application-specific motion control modules for Modicon Premium™	4/32 and 4/33
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Selection guide

Type of machine		Simple machines		
				
Starters/drives		Variable speed drives Soft starters and soft start/soft stop units		
		Altistart® 01	Altivar® 11	Altivar 31
				
Supply voltage ranges for 50/60 Hz line supply		Single phase 110–480 V Three phase 110–690 V	Single phase 100–120 V Single phase 200–240 V Three phase 200–230 V	Single phase 200–240 V Three phase 200–240 V Three phase 380–500 V Three phase 525–600 V
Motor power		0.25–75 Hp	0.25–3 Hp	0.25–20 Hp
Drive	Output frequency	–	0.5–200 Hz	0.5–500 Hz
	Type of control Asynchronous motor	–	Sensorless flux vector control	
	Synchronous motor	–	–	–
	Transient overtorque	–	150–170% of nominal motor torque	170–200% of the nominal motor torque
Functions				
Number of functions		1	26	50
Number of preset speeds		–	4	16
Number of I/O	Analog inputs	–	1	3
	Logic inputs	3	4	6
	Analog outputs	–	–	1
	Logic outputs	1	1	–
	Relay outputs	1	1	2
Communication				
Integrated		–	–	Modbus and CANopen
Available as an option		Combined with TeSys U-line self-protected starter.	–	DeviceNet, EthernetTCP/IP, Fipio, Profibus DP
Cards (available as an option)		–	–	–
Standards and certifications		IEC/EN 60947-4/2 C-TICK - CSA - UL CE - CCC	EN 50178, EN 61800-3 EN 55011 - EN 55022 class B and class A gr.1 NOM 117 - C-TICK - CSA UL - N998 - CE	EN 50178, EN 61800-3 EN 55011 - EN 55022: class A, class B with option C-TICK - UL - N998 - CE - CSA
		pages 4/6–4/7	pages 4/10–4/11	pages 4/14–4/15

Selection guide

Pumping and ventilation machines



Complex, high-power machines



Soft start/soft stop units

Variable speed drives
Building (HVAC) (1)

Industry

Variable speed drives

Altistart 48



Altivar 21



Altivar 61



Altivar 71



Three phase 230–415 V
Three phase 208–690 V

Three phase 200–240 V
Three phase 380–480 V

Single phase 200–240 V
Three phase 200–240 V
Three phase 380–480 V

Single phase 200–240 V
Three phase 200–240 V
Three phase 380–480 V

2–1200 Hp

0.1–40 Hp

0.5–900 Hp

0.5–700 Hp

–

0.5–200 Hz

0.5–1600 Hz up to 50 Hp
0.5–500 Hz from 50 to 900 Hp

0.1–1600 Hz up to 50 Hp
0.1–500 Hz from 50 to 700 Hp

Sensorless flux vector control

–	–	–	Vector control without speed feedback
–	Transient overload: 110% of the nominal drive current for 60 seconds	Transient overload: 110–120% of the nominal drive current for 60 seconds	200% of the nominal motor torque for 2 s 170% for 60 seconds
36	50	> 150	> 150
–	8	16	16
1 PTC probe	2	2–4	2–4
4	3	6–20	6–20
1	1	1–3	1–3
2	–	0–8	0–8
3	2	2–4	2–4
Modbus	Modbus	Modbus and CANopen	Modbus and CANopen
DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP	LonWorks, METASYS N2, APOGEE FLN, BACnet	Ethernet TCP/IP, Fipio, Modbus Plus, INTERBUS, Profibus DP, Modbus/Uni-Telway, DeviceNet, LonWorks, METASYS N2, APOGEE FLN, BACnet	Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBUS
–	–	I/O extension cards “Controller Inside” programmable card, multi-pump cards	Encoder interface card I/O extension card “Controller Inside” programmable card
IEC/EN 60947-4-2 EMC class A and B DNV - C-TICK - GOST CCIB - NOM - UL - CE CCC - CSA	EN 50178, IEC/EN 61800-3 EN 55011, EN 55022: class A, class B with option CE, UL, C-Tick, N998	IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, C1 to C3) EN 55011, EN 55022, IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11 CE, UL, CSA, DNV, C-Tick, NOM 117, GOST	
pages 4/8-4/9	pages 4/12-4/13	pages 4/16-4/21	pages 4/22-4/27

(1) Heating Ventilation Air Conditioning

Selection Guide



Enclosed and MMC packaged products

Type of motor control Key application/market segment	Soft starts Commercial & Industrial – pumps – agitators – fans – mixers – conveyors – grinders – centrifuges – crushers – lifts – presses	Adjustable speed drives Commercial HVAC & retrofits – pumps – fans	Adjustable speed drive Commercial & Industrial HVAC – pumps – fans
Packaged products Integrated controls protected within enclosures, optimized with disconnect means, circuit breakers, push buttons, selector switches, control logic, communication and miscellaneous options designed to meet application requirements	Enclosed 48 	S-Flex™ 	E-Flex™ 
Product platform	Altistart 48	Altivar 31	Altivar 61 (variable torque)
Distribution voltage ranges for 50/60 Hz line supply	208, 240, 480, 600 Vac	480 Vac	208, 240, 480 Vac
Horsepower ratings	3 to 200 hp, 208 V 5 to 250 hp, 230 V 10 to 500 hp, 480V 15 to 600 hp, 575 V	<u>Variable torque:</u> 1 to 20 hp, 460 V	<u>Variable torque:</u> 1 to 100 hp, 460 V 1 to 50 hp, 208/230 V
Configurable options	Customizable product – non-reversing – reversing – shunt trip Extensive options	Standard product – drive with isolation/bypass Predefined options	Configurable product – drive with disconnect means – drive with isolation/bypass Limited options
Enclosure ratings	Type 1 general purpose Type 12 dust/drip proof Type 3R outdoor	Type 1 general purpose	Type 1 general purpose Type 12/12K dust/drip proof Type 3R outdoor
Communication networks	Modbus (native) Modbus Plus Ethernet TCP/IP (gateway) DeviceNet (gateway)	Modbus RJ45 CANopen	APOGEE FLN (P1) MetSYS N2 BACnet Modbus Plus Ethernet TCP/IP Profibus DP LonWorks
Standards and certifications	UL508 cUL/ CSA Seismic qualification ICC ES AC156 acceptance test protocol	UL508A Seismic qualification ICC ES AC156 acceptance test protocol	UL508C cUL Seismic qualification ICC ES AC156 acceptance test protocol
Catalog number	8636BR0401 8638CT0401	8839BR0501	8000HO0622 8800BR0601

Selection guide



Enclosed and MMC packaged products

Adjustable speed drives Industrial, Water/wastewater, Strategic Accounts – aggregates – industrial facilities – government – manufacturing process – healthcare – municipal pumping – schools – pharmaceutical	Adjustable speed drives (18-Pulse) Industrial, Water/wastewater – clean power technology – high horsepower – process control applications – fans	Soft starts & adjustable speed drives Industrial, Water/wastewater Pharmaceutical – high density construction – pumps – fans – intelligent networking
M-Flex™	PowerGard™ Series C	Model 6 motor control center
		
Altivar 61 (constant torque) Altivar 71 (constant torque)	Altivar 61 (constant torque) Altivar 71 (constant torque)	Altistart 48 Altivar 61 (variable torque) Altivar 71 (variable torque)
208, 240, 480 Vac	Three phase 480 Vac	208, 240, 480, 600 Vac Drive:
<u>Variable torque:</u> 1 to 500 hp, 460 V 1 to 50 hp, 208/230 V <u>Constant torque:</u> 1 to 450 hp, 460 V 1 to 40 hp, 208/230 V	<u>Variable torque:</u> 50 to 500 hp, 460 V <u>Constant torque:</u> 40 to 450 hp, 460 V	<u>Variable torque:</u> 1 to 500 hp, 460 V 1 to 50 hp, 208/230 V 1 to 40 hp, 208/230 V Soft start: 3 to 200 hp, 208 V 5 to 250 hp, 230 V 10 to 500 hp, 480V 15 to 600 hp, 575V
Customizable product – drive with disconnect means – drive with integrated bypass – drive with barriered bypass – drive with reduced voltage bypass – drive with soft start bypass	Customizable product – drive with disconnect means – drive with integrated bypass – drive with barriered bypass – drive with reduced voltage bypass – drive with soft start bypass – soft start with options	Customizable product – drive with disconnect means – drive with integrated bypass – drive with barriered bypass – drive with reduced voltage bypass – drive with soft start bypass
Extensive options Type 1 general purpose Type 1G general purpose with gasketing Type 12/12K dust/drip proof	Extensive options Type 1 general purpose Type 1B general purpose with fan filters	Extensive options Type 1 general purpose Type 12/12K dust/drip proof Type 3R outdoor
APOGEE FLN (P1) BACnet DeviceNet Ether net TCP/IP FIPIO Interbus S	APOGEE FLN (P1) BACnet DeviceNet Ethernet TCP/IP FIPIO Interbus S	APOGEE FLN (P1) BACnet DeviceNet Ether net TCP/IP FIPIO Interbus S
LonWork MetSYS N2 Modbus/Unitelway Profibus DP Profibus DP	LonWorks MetSYS N2 Modbus/Unitelway Modbus Plus Profibus DP	LonWorks MetSYS N2 Modbus/Unitelway Modbus Plus Profibus DP
UL508A UL508C cUL Seismic qualification ICC ES AC156 acceptance test protocol	UL508A UL508C cUL Seismic qualification ICC ES AC156 acceptance test protocol	UL845 CSA NOM Seismic qualification ICC ES AC156 acceptance test protocol
8000HO0623 8800BR0602	Pending release 3Q-2006	8998BR9701 8998CT9701

4

Altistart 01

0.25–75 Hp

0.37–75 kW

Simple machines Soft Starts

Dimensions (mm)		width x height x depth
ATS01	N103FT / N106 FT	22.5 x 100 x 100
	N109FT / N112 FT	45 x 124 x 130
	N206pp / N209pp / N212pp	
	N222pp / N232pp	45 x 154 x 130



4

Type of starter					Soft start	Soft start and soft stop				
Motor power					0.25–7.5 Hp	1.0–20 Hp				
Degree of protection					IP20					
Peak current reduction					No (1 controlled phase)	Yes (2 controlled phases)				
Adjustable starting time					1–5 s	1–10 s				
Adjustable stopping time					No: freewheel stop	Yes: 1–10 s				
Adjustable starting torque					30–80% of rated motor starting torque					
Logic inputs					–	3 logic inputs (start, stop and startup boost)				
Logic outputs					–	1 logic output				
Relay outputs					–	1 relay output				
Control supply voltage					110–240 VAC ± 10%, 24 VDC ± 10%	Built into the soft start				
Supply voltage					Single phase 110–230 V					
Motor power										
110 V		230V		Nominal current						
hp	kW	hp		(A)						
–	0.37	0.25		3						
					ATS01N103FT					
0.25					0.75	0.5	6	ATS01N106FT		
0.33					1.1	1	9	ATS01N109FT		
0.5					1.5	2	12	ATS01N112FT		
Supply voltage						Three phase 110–230 V	Three phase 200–240 V	Three phase 380–415 V	Three phase 440–480 V	
Motor power										
208 V	230 V		400 V		460 V	Nominal current				
hp	kW	hp	kW	hp	(A)					
0.5	0.37–0.55	0.5	1.1	1–1.5	3	ATS01N103FT	–	–	–	
1	0.75–1.1	1–1.5	2.2	2–3	6	ATS01N106FT	ATS01N206LU	ATS01N206QN	ATS01N206RT	
1.5–2	1.5	2	4	5	9	ATS01N109FT	ATS01N209LU	ATS01N209QN	ATS01N209RT	
3	2.2	3	5.5	7.5	12	ATS01N112FT	ATS01N212LU	ATS01N212QN	ATS01N212RT	
5	4–5.5	5–7.5	7.5–11	10–15	22	–	ATS01N222LU	ATS01N222QN	ATS01N222RT	
7.5–10	7.5	10	15	20	32	–	ATS01N232LU	ATS01N232QN	ATS01N232RT	



Altistart 01

0.25–75 Hp

0.37–75 kW

Starters



Dimensions (mm)		width x height x depth
ATS01	N230 pp/N244 pp	180 x 146 x 126
	N272 pp/N285 pp	180 x 254.5 x 126

Type of starter							Soft start and soft stop	
Motor power							10 TO 60 HP	
Degree of protection							IP20 on the front panel	
Peak current reduction							Yes	
Adjustable starting time							1–25 s	
Adjustable starting torque							30–80% of rated motor starting torque	
Logic inputs							2 logic inputs (start and stop)	
Relay outputs							1 relay output (1 more optional)	
Control supply voltage							110– 240 VAC ± 10%, 24 VDC ± 10%	Built into the soft start
Supply voltage							3-phase 230–690V	3-phase 400V
Motor power								
230 V	230 V	400 V	460 V	575 V	690V	Nominal current		
kW	Hp	kW	Hp	Hp	kW	(A)		
7.5	10	15	20	30	30	32	ATS01N230LY	–
11	15	22	30	40	37	44	ATS01N244LY	ATS01N244QN
18.5	25	37	50	60	55	72	ATS01N272LY	ATS01N272QN
22	30	45	60	75	75	85	ATS01N285LY	ATS01N285QN

Starters with TeSys model U



Dimensions (mm)		width x height x depth
ATSU01	N206LT/N209LT/N212LT	45 x 124 x 113
	N222LT/N232LT	45 x 154 x 113

Type of starter					Soft start and soft stop			
Motor power					1.0–20 HP			
Degree of protection					IP20			
Peak current reduction					Yes			
Adjustable starting and stopping times					1–10 s			
Adjustable starting torque					30–80% of rated motor starting torque			
Logic inputs					3 logic inputs (start, stop and startup boost)			
Logic outputs					1 logic output			
Relay outputs					1 relay output			
Control supply voltage					Built into the soft start			
Catalog number					Soft start	TeSys model U-line self-protected starter		Power connector
						Power base	Control unit (1)	between ATSU and TeSys model U
Supply voltage					Three phase 200–480 V			
Motor power								
230 V		400 V	460 V	Nominal				
kW	Hp	kW	Hp	current (IcL)				
0.75	1	1.5	2	6 A	ATSU01N206LT	LUB12	LUCp05BL	VW3G4104
1.1	1.5	2.2	3	6 A	ATSU01N206LT	LUB12	LUCp12BL	VW3G4104
1.5	2	3	–	9 A	ATSU01N209LT	LUB12	LUCp12BL	VW3G4104
–	–	4	5	9 A	ATSU01N209LT	LUB12	LUCp12BL	VW3G4104
2.2	3	–	–	12	ATSU01N212LT	LUB12	LUCp12BL	VW3G4104
3	–	5.5	7.5	12 A	ATSU01N212LT	LUB32	LUCp18BL	VW3G4104
4	5	7.5	10	22 A	ATSU01N222LT	LUB32	LUCp18BL	VW3G4104
5.5	7.5	11	15	22 A	ATSU01N222LT	LUB32	LUCp32BL	VW3G4104
7.5	10	15	20	32 A	ATSU01N232LT	LUB32	LUCp32BL	VW3G4104

(1) To compose your catalog number, replace **p** in the catalog number with: "A" for a standard control unit, "M" for a multifunction unit and "B" for an advanced unit.

Altistart 48

2–1200 Hp

3–900 kW

Large machines

Soft starts

Dimensions (W x H x D)	mm
ATS48 D17Y to D47Y	160 x 275 x 190
D62Y to C11Y	190 x 290 x 235
C14Y to C17Y	200 x 340 x 265
C21Y to C32Y	320 x 380 x 265
C41Y to C66Y	400 x 670 x 300
C79Y to M12Y	770 x 890 x 315



4

Supply voltage												3-phase 208–690 V	
Application duty cycle												Standard duty	Severe duty (1)
Starter control supply voltage												110–230 V	
Protection												IP 20: ATS48D17Y to ATS48C11Y soft starts	
												IP 00: ATS48C14Y to ATS48M12Y soft starts	
EMC												Class 10	
												On all soft starts	
												On all soft starts up to ATS48C17Y	
Starting mode												Torque ramp control	
I/O												1 PTC probe	
												4, 2 of which are configurable	
												2 configurable	
												1	
Dialog												3, 2 of which are configurable	
												Integrated or remote display terminal, or PowerSuite software (2)	
Communication (2)												Modbus	
												DeviceNet, Ethernet TCP/IP, Profibus DP, Fipio	
Motor power												Nominal current (A)	
208 V	230 V	460 V	575 V	230 V	400 V	440 V	500 V	525 V	660 V	690 V			
Hp				kW									
2	3	7.5	10	3	5.5	5.5	7.5	7.5	9	11	12	–	ATS48D17Y
3	5	10	15	4	7.5	7.5	9	9	11	15	17	ATS48D17Y	ATS48D22Y
5	7.5	15	20	5.5	11	11	11	11	15	18.5	22	ATS48D22Y	ATS48D32Y
7.5	10	20	25	7.5	15	15	18.5	18.5	22	22	32	ATS48D32Y	ATS48D38Y
10	–	25	30	9	18.5	18.5	22	22	30	30	38	ATS48D38Y	ATS48D47Y
–	15	30	40	11	22	22	30	30	37	37	47	ATS48D47Y	ATS48D62Y
15	20	40	50	15	30	30	37	37	45	45	62	ATS48D62Y	ATS48D75Y
20	25	50	60	18.5	37	37	45	45	55	55	75	ATS48D75Y	ATS48D88Y
25	30	60	75	22	45	45	55	55	75	75	88	ATS48D88Y	ATS48C11Y
30	40	75	100	30	55	55	75	75	90	90	110	ATS48C11Y	ATS48C14Y
40	50	100	125	37	75	75	90	90	110	110	140	ATS48C14Y	ATS48C17Y
50	60	125	150	45	90	90	110	110	132	160	170	ATS48C17Y	ATS48C21Y
60	75	150	200	55	110	110	132	132	160	200	210	ATS48C21Y	ATS48C25Y
75	100	200	250	75	132	132	160	160	220	250	250	ATS48C25Y	ATS48C32Y
100	125	250	300	90	160	160	220	220	250	315	320	ATS48C32Y	ATS48C41Y
125	150	300	350	110	220	220	250	250	355	400	410	ATS48C41Y	ATS48C48Y
150	–	350	400	132	250	250	315	315	400	500	480	ATS48C48Y	ATS48C59Y
–	200	400	500	160	315	355	400	400	560	560	590	ATS48C59Y	ATS48C66Y
200	250	500	600	–	355	400	–	–	630	630	660	ATS48C66Y	ATS48C79Y
250	300	600	800	220	400	500	500	500	710	710	790	ATS48C79Y	ATS48M10Y
350	350	800	1000	250	500	630	630	630	900	900	1000	ATS48M10Y	ATS48M12Y
400	450	1000	1200	355	630	710	800	800	–	–	1200	ATS48M12Y	–

(1) Starting time greater than 30 seconds (fans, high inertia machines and compressors).

(2) For more information concerning PowerSuite software and communication protocols, see page 4/28.

Accessory



Type of accessory	Remote display terminal [Includes 3 m (9.8') cable with connectors, with seals, plastic bezel, screws for IP 65 keypad mounting on door of enclosure.]
Catalog number	VW3G48101

Altistart 48

2–1200 Hp

3–900 kW

Soft start (1)

Dimensions (W x H x D)		mm
ATS48	D17p to D47p	160 x 275 x 190
	D62p to C11p	190 x 290 x 235
	C14p to C17p	200 x 340 x 265
	C21p to C32p	320 x 380 x 265
	C41p to C66p	400 x 670 x 300



Starter control supply voltage								3-phase 208–500 V	
Application duty cycle								Standard duty	Severe duty (2)
Starter control supply voltage								110–230 V	
Characteristics								Identical to 208–690 V soft starts	
Motor power									
208 V	230 V	460 V	230 V	400 V	440 V	500 V	Nominal current (A)		
Hp			kW						
–	7.5	15	5.5	11	11	15	12	–	ATS48D17YS316
7.5	10	20	7.5	15	15	18.5	17	ATS48D17YS316	ATS48D22YS316
10	10	30	9	18.5	22	22	22	ATS48D22YS316	ATS48D32YS316
15	20	40	15	22	30	37	32	ATS48D32YS316	ATS48D38YS316
20	25	50	18.5	30	37	45	38	ATS48D38YS316	ATS48D47YS316
25	30	60	22	45	45	55	47	ATS48D47YS316	ATS48D62YS316
30	40	75	30	55	55	75	62	ATS48D62YS316	ATS48D75YS316
40	50	100	37	55	75	90	75	ATS48D75YS316	ATS48D88YS316
50	60	125	45	75	90	110	88	ATS48D88YS316	ATS48C11YS316
60	75	150	55	90	110	132	110	ATS48C11YS316	ATS48C14YS316
75	100	200	75	110	–	160	140	ATS48C14YS316	ATS48C17YS316
100	125	250	90	132	200	200	170	ATS48C17YS316	ATS48C21YS316
125	150	300	110	160	220	250	210	ATS48C21YS316	ATS48C25YS316
150	–	350	132	220	250	315	250	ATS48C25YS316	ATS48C32YS316
200	200	450	160	250	355	400	320	ATS48C32YS316	ATS48C41YS316
–	–	600	220	315	500	500	410	ATS48C41YS316	ATS48C48YS316
–	–	–	250	355	560	630	480	ATS48C48YS316	ATS48C59YS316
–	–	–	–	400	710	710	590	ATS48C59YS316	ATS48C66YS316
–	–	–	315	500	710	800	660	ATS48C66YS316	ATS48C79YS316
–	–	–	475	630	900	900	790	ATS48C79YS316	ATS48M10YS316
–	–	–	–	710	–	–	1000	ATS48M10YS316	ATS48M12YS316
–	–	–	500	–	–	–	1200	ATS48M12YS316	–

(1) For wiring in series with the windings of a 6 or 12 lead delta-wound motor.

(2) Starting time greater than 30 seconds (fans, high inertia machines and compressors).

Altivar 11

0.25–3 Hp

0.18–2.2 kW

Simple machines Drives on heatsinks



Dimensions (W x H x D) (1)	mm
Size 1:	72 x 142 x 101
Size 2:	72 x 142 x 125
Size 3:	72 x 142 x 138
Size 4:	117 x 142 x 156

Range				E Range		U Range		A Range	
Output frequency				0.5–200 Hz					
Type of control				Sensorless flux vector control					
Speed range				1 to 20					
Degree of protection				IP 20					
I/O	Analog inputs			1 configurable analog input					
	Logic inputs			4 assignable logic inputs					
	Outputs			1 PWM open collector output assignable as logic or analog output					
	Relay outputs			1 protected relay logic output					
Dialog				Integrated display terminal or PowerSuite software workshop (2)					
EMC				Integrated class B filter		External filter available as an option		External filter available as an option	
Local controls (1)/negative logic				No		No		Yes	
Standard NEC 1999 Motor Current Rated				No		Yes		No	
Supply voltage				Single phase 100–120 V					
Motor power		kW	Hp	–		ATV11HU05F1U Size 1		ATV11HU05F1A Size 1	
		0.18	0.25						
		0.37	0.5						
		0.75	1						
Supply voltage				Single phase 200–240 V					
Motor power		0.18	0.25	ATV11HU05M2E Size 1		ATV11HU05M2U Size 1		ATV11HU05M2A Size 1	
		0.37	0.5	ATV11HU09M2E Size 2		ATV11HU09M2U Size 2		ATV11HU09M2A Size 2	
		0.55		ATV11HU12M2E Size 3		–		–	
		0.75	1	ATV11HU18M2E Size 3		ATV11HU18M2U Size 3		ATV11HU18M2A Size 3	
		1.5	2	ATV11HU29M2E Size 4		ATV11HU29M2U Size 4		ATV11HU29M2A Size 4	
		2.2	3	ATV11HU41M2E Size 4		ATV11HU41M2U Size 4		ATV11HU41M2A Size 4	
Supply voltage				Three phase 200–230 V					
Motor power		0.18	0.25	–		ATV11HU05M3U Size 1		ATV11HU05M3A Size 1	
		0.37	0.5	–		ATV11HU09M3U Size 2		ATV11HU09M3A Size 2	
		0.75	1	–		ATV11HU18M3U Size 3		ATV11HU18M3A Size 3	
		1.5	2	–		ATV11HU29M3U Size 4		ATV11HU29M3A Size 4	
		2.2	3	–		ATV11HU41M3U Size 4		ATV11HU41M3A Size 4	

(1) The A range has local controls with Run/Stop keys and potentiometer. Add 7 mm to depth (height of the potentiometer).

(2) PowerSuite software, see page 4/28.

AC drives with base plates



Dimensions (W x H x D) (1)	mm
Size 1:	72 x 142 x 101

Range			E Range	U Range	A Range
Supply voltage	kW	Hp	Single phase 100–120 V		
Motor power	0.37	0.5	–	ATV11PU09F1U	ATV11PU09F1A
Supply voltage			Single phase 200–240 V		
Motor power	0.37	0.5	ATV11PU09M2E	ATV11PU09M2U	ATV11PU09M2A
	0.55		ATV11PU12M2E	–	–
	0.75	1	ATV11PU18M2E	ATV11PU18M2U	ATV11PU18M2A
Supply voltage			Three phase 200–230 V		
Motor power	0.37	0.5	–	ATV11PU09M3U	ATV11PU09M3A
	0.75	1	–	ATV11PU18M3U	ATV11PU18M3A

(1) The A range has local controls with Run/Stop keys and potentiometer. Add 7 mm to depth (height of the potentiometer).



Altivar 11

0.25–3 Hp
0.18–2.2 kW

Additional EMC input filters



Supply voltage			Single phase 100–120 V	200–240 V	Three phase 200–230 V
E range	Drive type	ATV11	–	HU05M2E to HU41M2E	–
	Catalog numbers	Filters	–	Integrated	–
U range	Drive type	ATV11	HU05F1U, HU09F1U	HU05M2U to HU18M2U	HU05M3U to HU18M3U
	Catalog numbers	Filters	VW3A11401	VW3A11401	VW3A11403
	Drive type	ATV11	HU18F1U	HU29M2U - HU41M2U	HU29M3U to HU41M3U
A range	Catalog numbers	Filters	VW3A11402	VW3A11402	VW3A11404
	Drive type	ATV11	HU05F1A - HU09F1A	HU05M2A to HU18M2A	HU05M3A to HU18M3A
	Catalog numbers	Filters	VW3A11401	VW3A11401	VW3A11403
	Drive type	ATV11	HU18F1A - HU18F1A	HU29M2A - HU41M2A	HU29M3A to HU41M3A
	Catalog numbers	Filters	VW3A11402	VW3A11402	VW3A11404

4

Accessories



Accessory			Mounting plates for DIN rail		Grounding plate for EMC mounting	Braking module
Description			Width 35 mm			Minimum dynamic braking resistance value 75 Ω
Catalog number	Drive type	ATV11	HU05ppp HU09ppp HU12M2p HU18pp	HU18F1p HU29 ppp HU41 ppp –	All ATV11 models	All ATV11 models
	Accessories		VW3A11851	VW3A11852	VW3A11831	VW3A11701

Braking resistors and modules–other accessories: Please consult the «Variable speed drives and soft starts» catalog.

Altivar 21

1–40 Hp

0.75–30 kW

Building (HVAC)⁽¹⁾ UL Type 1/IP20 drives



Dimensions (mm)	width x height x depth
Size 1: 105 x 130 x 150	Size 4: 245 x 310 x 190
Size 2: 140 x 170 x 150	Size 5: 240 x 420 x 210
Size 3: 180 x 220 x 170	Size 6: 320 x 630 x 290

Drive		Three phase	
Supply voltage		200–240 V	380–480 V
Degree of protection		IP21 and IP41 on the top of the drive controller	
Output frequency		0.5–200 Hz	
Type of control		sensorless flux vector control	
Speed range		1 to 10	
I/O	Analog inputs	1 switch-configurable current or voltage analog input, and 1 voltage analog input configurable as a PTC probe input	
	Logic inputs	3 programmable logic inputs	
	Analog outputs	1 switch-configurable current or voltage analog output	
	Relay outputs	2 relay logic outputs	
Dialog		Integrated display terminal with local controls (2) or remote display terminal or PC software (see page 4/15)	
Communication (see page 4/15)	Integrated	Modbus RTU	
	Available as an option	HVAC protocols: LonWorks, METASYS N2, APOGEE FLN, BACnet	
EMC	Class A	External filter available as an option	Integrated class A filter
	Class B	External filter available as an option	External filter available as an option
Motor power (3)	kW	Hp	Type 1 conduit entry kit
	0.75	1	ATV21H075M3X Size 1 VW3A31814 Size 1 ATV21H075N4 Size 1
	1.5	2	ATV21HU15M3X Size 1 ATV21HU15N4 Size 1
	2.2	3	ATV21HU22M3X Size 1 ATV21HU22N4 Size 1
	3	–	ATV21HU30M3X Size 2 VW3A31815 Size 2 ATV21HU30N4 Size 2
	4	5	ATV21HU40M3X Size 2 ATV21HU40N4 Size 2
	5.5	7.5	ATV21HU55M3X Size 3 VW3A31816 Size 3 ATV21HU55N4 Size 2
	7.5	10	ATV21HU75M3X Size 3 ATV21HU75N4 Size 3
	11	15	ATV21HD11M3X Size 4 VW3A31817 Size 4 ATV21HD11N4 Size 3
	15	20	ATV21HD15M3X Size 4 ATV21HD15N4 Size 4
	18.5	25	ATV21HD18M3X Size 4 ATV21HD18N4 Size 4
	22	30	ATV21HD22M3X Size 5 VW3A9206 Size 5 ATV21HD22N4 Size 5
	30	40	ATV21HD30M3X Size 6 VW3A9208 Size 6 ATV21HD30N4 Size 6

(1) Heating Ventilation Air Conditioning. (3) 380–480 V drive controllers available up to 100 Hp in 2007.

(2) Drive with local controls, Run/Stop, Loc/Rem.keys

Dimensions (mm)	width x height x depth
S1: 215 x 297 x 192	S4: 310 x 665 x 315
S2: 230 x 340 x 208	S5: 284 x 720 x 315
S3: 290 x 560 x 315	

Type 12/IP54 drives



Available in 2007

Drive		Three phase	
Supply voltage		200–240 V	380–480 V
Degree of protection		IP54	
Description		IP54 drive available in two manufacturing variants, ATV21W–N4 class A or ATV21W–N4C class B	
EMC	Class A	Integrated class A filter	–
	Class B	–	Integrated class B filter
Motor power	kW	Hp	
	0.75	1	ATV21W075N4 Size 1 ATV21W075N4C Size 1
	1.5	2	ATV21WU15N4 Size 1 ATV21WU15N4C Size 1
	2.2	3	ATV21WU22N4 Size 2 ATV21WU22N4C Size 2
	3	–	ATV21WU30N4 Size 2 ATV21WU30N4C Size 2
	4	5	ATV21WU40N4 Size 2 ATV21WU40N4C Size 2
	5.5	7.5	ATV21WU55N4 Size 2 ATV21WU55N4C Size 2
	7.5	10	ATV21WU75N4 Size 2 ATV21WU75N4C Size 2
	11	15	ATV21WD11N4 Size 3 ATV21WD11N4C Size 3
	15	20	ATV21WD15N4 Size 3 ATV21WD15N4C Size 3
	18.5	25	ATV21WD18N4 Size 4 ATV21WD18N4C Size 4
	22	30	ATV21WD22N4 Size 5 ATV21WD22N4C Size 5
	30	40	ATV21WD30N4 Size 5 ATV21WD30N4C Size 5



Altivar 21

1–40 Hp
0.75–30 kW

Additional EMC input filters



Supply voltage			Three phase 200–240 V			380–480 V		
Maximum length of shielded cable m (1)				Class A	Class B		Class A	Class B
Catalog number	Type of drive	ATV21	H075M3X to HU22M3X	50 m	20 m	H075N4 to HU22N4	50 m	20 m
	Filters		VW3A31404			VW3A31404		
	Type of drive	ATV21	HU30M3X and HU40M3X	80 m	50 m	HU30N4 to HU55N4	50 m	20 m
	Filters		VW3A31406			VW3A31406		
	Type of drive	ATV21	HU55M3X and HU75M3X	80 m	50 m	HU75N4 and HD11N4	50 m	20 m
	Filters		VW3A31407			VW3A31407		
Catalog number	Type of drive	ATV21	HD11M3X to HD18M3X	50 m	1 m	HD15N4 and HD18N4	50 m	20 m
	Filters		VW3A31408			VW3A31409		
Catalog number	Type of drive	ATV21	HD22M3X	100 m	25 m	HD22N4 and HD30N4	200 m	100 m
	Filters		VW3A4406			VW3A4406		
Catalog number	Type of drive	ATV21	HD30M3X	100 m	25 m	–		
	Filters		VW3A4408					

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 6 to 16 kHz.

Communication cards

Type		LonWorks	METASYS N2	APOGEE FLN	BACnet
Structure	Connector	1 removable 3-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal
	Topology	TP/FT-10 (free topology)	–	–	–
	Transmission speed	78 Kbps	–	–	–
Diagnostics	With LEDs	1 LED on the card: "Service"	1 LED on the card: "COM" (network traffic)		
	Using the graphic display terminal	Command word received/reference received			
Description file		xif file supplied on CD-ROM	–	–	–
Catalog number		VW3A21312	VW3A21313	VW3A21314	VW3A21315

Remote display terminal

Description	The Altivar 21 drive can be connected to a remote display terminal. The display terminal can be mounted on the door of an enclosure with IP54 protection on the front panel. Max. operating temperature: 40°C Supplied with: – 1 cable with 2 RJ45 connectors, length 3.6 m – Seal and screws for IP54 mounting on an enclosure door
Catalog number	VW3A21101

Connection accessories

Modbus bus	Splitter box	Cables (L = 1 m)	T-junction boxes (L = 1 m)	Line terminator
Description	10 RJ45 connectors and 1 screw terminal	Equipped with 2 RJ45 connectors	T-junction boxes (with integrated cable)	Adaptation for RJ45 connector
Catalog number	LU9GC3	VW3A8306R10	VW3A8306TF10	VW3A8306RC

PC software for Altivar 21 drives

	Software	Connection Kit
Description	It includes various functions such as: Preparing configurations, setup and maintenance. Operates in the following PC environments and configurations: Microsoft Windows® 98, Microsoft Windows® 2000, Microsoft Windows® XP, Pentium® 233 MHz or more, hard disk with 10 Mb available, 32 Mb RAM, 256 colour 640 x 480 pixels or higher definition monitor.	
Catalog number	VW3A21104	VW3A8106

Altivar 31

0.25–20 Hp

0.18–15 kW

Simple machines Drives on heatsinks

Dimensions (W x H x D)	mm
Size 1:	72 x 145 x 120
Size 2 & 3:	72 x 145 x 130
Size 4:	72 x 145 x 140
Size 5:	105 x 143 x 130
Size 6:	105 x 143 x 150
Size 7:	140 x 184 x 150
Size 8:	180 x 232 x 170



Supply voltage			Single phase 200–240 V		Three phase 200–240 V		380–500 V		525–600 V			
Output frequency			0.5–500 Hz									
Type of control			Sensorless flux vector control									
Speed range			1 to 50									
Degree of protection			IP 31 and IP 41 on upper part and IP 21 on connection terminals									
I/O	Analog inputs		3 configurable analog inputs									
	Logic inputs		6 programmable logic inputs									
	Analog/logic outputs		Choice of: 1 current analog output or 1 voltage analog output (assignable as logic output)									
	Relay outputs		2 relay logic outputs									
Dialog			Integrated display terminal with or without local controls (1) or PowerSuite software workshop (2)									
Communication (3)	Integrated		Modbus and CANopen									
	Available as an option		DeviceNet, Ethernet TCP/IP, Fipio , Profibus DP									
EMC	Class A		Integrated class A filter		External filter avail.as an option		Integrated class A filter		–			
	Class B		External filter available as an option –									
Motor power			kW	Hp								
			0.18	0.25	ATV31H018M2	S3	ATV31H018M3X	S1	–	–		
			0.37	0.5	ATV31H037M2	S3	ATV31H037M3X	S1	ATV31H037N4	S6	–	
			0.55	0.75	ATV31H055M2	S4	ATV31H055M3X	S2	ATV31H055N4	S6	–	
			0.75	1	ATV31H075M2	S4	ATV31H075M3X	S2	ATV31H075N4	S6	ATV31H075S6X	S6
			1.1	1.5	ATV31HU11M2	S6	ATV31HU11M3X	S5	ATV31HU11N4	S5	–	
			1.5	2	ATV31HU15M2	S6	ATV31HU15M3X	S5	ATV31HU15N4	S6	ATV31HU15S6X	S6
			2.2	3	ATV31HU22M2	S7	ATV31HU22M3X	S6	ATV31HU22N4	S7	ATV31HU22S6X	S7
			3	–	–		ATV31HU30M3X	S7	ATV31HU30N4	S7	–	
			4	5	–		ATV31HU40M3X	S7	ATV31HU40N4	S7	ATV31HU40S6X	S7
			5.5	7.5	–		ATV31HU55M3X	S8	ATV31HU55N4	S8	ATV31HU55S6X	S8
			7.5	10	–		ATV31HU75M3X	S8	ATV31HU75N4	S8	ATV31HU75S6X	S8
			11	15	–		ATV31HD11M3X	S9	ATV31HD11N4	S9	ATV31HD11S6X	S9
			15	20	–		ATV31HD15M3X	S9	ATV31HD15N4	S9	ATV31HD15S6X	S9

(1) For drive with local controls (Run/Stop keys and potentiometer) add an "A" at the end of the catalog number.

(2) (3) PowerSuite software and communication protocols, see page 4/28.



Altivar 31

0.25–20 Hp

0.18–15 kW

Additional EMC input filters

Supply voltage			Single phase 200–240 V		Three phase 200–240 V		380–500 V	
Maximum length of shielded cable (1)	Class A		5 m	50 m	5 m		5 m	50 m
	Class B		–	20 m	–		–	20 m
Catalog numbers	Drive type	ATV31	H018M2 to H075M2		H018M3X to H075M3X		H037N4 to HU15N4	
	Filters		Integrated	VW3A31401	VW3A31402		Integrated	VW3A31404
	Drive type	ATV31	HU11M2 to HU15M2		HU11M3X to HU22M3X		HU22N4 to HU40N4	
	Filters		Integrated	VW3A31403	VW3A31404		Integrated	VW3A31406
	Drive type	ATV31	HU22M2		HU30M3X - HU40M3X		HU55N4 - HU75 N4	
	Filters		Integrated	VW3A31405	VW3A31406		Integrated	VW3A31407
	Drive type	ATV31	–		HU55M3X - HU75M3X		HD11N4 - HD15N4	
	Filters		–		VW3A31407		Integrated	VW3A31409
	Drive type	ATV31	–		HD11M3X - HD15M3X		–	
	Filters		–		VW3A31408		–	

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 2 to 16 kHz.

Minimum Dynamic Braking Resistance Values

Drive	PA to PB Min. Resistance Value Ω	Drive	PA to PB Min. Resistance Value Ω
ATV31H018M2, ATV31H037M2	40	ATV31HU30M3X	16
ATV31H055M2, ATV31H075M2		ATV31HU30N4	55
ATV31HU11M2, ATV31HU15M2	27	ATV31HU40N4	36
ATV31H018M3X, ATV31H037M3X	40	ATV31H/KU55N4	29
ATV31H055M3X, ATV31H075M3X			
ATV31HU11M3X, ATV31HU15M3X	27	ATV31H/KU75N4	19
ATV31H037N4, ATV31H055N4	80	ATV31HU55S6X	34
ATV31H075N4			
AATV31HU11N4, ATV31HU15N4	54	ATV31HU75S6X	23
ATV31HU22N4	25		
ATV31HU22M2		ATV31HU40M3X	16
ATV31HU22M3X	16		
ATV31HU30M3X		ATV31H/KD11N4, ATV31H/KD15N4	20
ATV31HU30N4	55	ATV31HD11S6X, ATV31HD15S6X	24
ATV31HU40N4	36	ATV31HU55M3X, ATV31HU75M3X	8
ATV31HU22M3X	25	ATV31HD11M3X, ATV31HD15M3X	5

		Type 1 conduit entry kit	ATV28 substitution kit	DIN rail kit
Drive size	1, 2	VW3A31811	VW3A31821	VW3A11851
	3, 4	VW3A31812	VW3A31821	VW3A11851
	5	VW3A31813	VW3A31822	VW3A31852
	6	VW3A31814	VW3A31822	VW3A31852
	7	VW3A31815	–	–
	8	VW3A31816	VW3A31823	–
	9	VW3A31817	–	–

Altivar 61

0.5–900 Hp, 0.37–630 kW

Pumping and ventilation machines IP21 drives

Dimensions (mm) width x height x depth		
Size 2: 130 x 230 x 175	Size 3: 155 x 260 x 187	
Size 4: 175 x 295 x 187	Size 5A: 210 x 295 x 213	
Size 5B: 230 x 400 x 213	Size 6: 240 x 420 x 236	
Size 7A: 240 x 550 x 266	Size 7B: 320 x 550 x 266	
Size 8: 320 x 630 x 290	Size 9: 320 x 920 x 377	
Size 10: 360 x 1022 x 377	Size 11: 340 x 1190 x 377	
Size 12: 440 x 1190 x 377	Size 13: 595 x 1190 x 377	
Size 14: 890 x 1390 x 377	Size 15: 1120 x 1390 x 377	



Type of drive			Single phase		Three phase		Three phase	
Supply voltage			200–240 V (3)		200–240 V (3)		380–480 V (3)	
Degree of protection			IP21 for unprotected drives and IP41 on the top of the drive controller					
Output frequency			0.5–1600 Hz up to 37 kW (50 Hp); 0.5–500 Hz from 45 to 630 kW (60 to 900 Hp)					
Type of control	Asynchronous motor		Flux vector control with or without sensor					
	Synchronous motor		Vector control without speed feedback					
Transient overtorque			110% to 120% of the nominal drive current for 60 seconds					
Speed range			1–100 in open loop mode					
I/O			6					
	Logic inputs (4)							
		Analog inputs	2					
		Analog outputs	1					
		Relay outputs	2					
		Safety input	1					
Dialog			Remote graphic display terminal or PowerSuite software workshop (see pages 4/25 and 4/28)					
Communication (see page 4/28)	Integrated		Modbus and CANopen					
	Available as an option		HVAC protocols: LonWorks, BACnet, METASYS N2, APOGEE FLN Industrial: Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBus					
Cards (available as an option)			Multi-pump cards, I/O extension cards, "Controller Inside" programmable card					
Reduction of current harmonics			DC choke integrated or supplied with the product (optional chokes and passive filters, see page 4/20)					
EMC	Class A		Integrated filter					
	Class B		External filter available as an option					
Motor power (kW/HP)	0.37	0.5	ATV61H075M3	Size 2	–		–	
	0.75	1	ATV61HU15M3	Size 2	ATV61H075M3	Size 2	ATV61H075N4 (3)	Size 2
	1.5	2	ATV61HU22M3	Size 3	ATV61HU15M3	Size 2	ATV61HU15N4 (3)	Size 2
	2.2	3	ATV61HU30M3	Size 3	ATV61HU22M3	Size 3	ATV61HU22N4 (3)	Size 2
	3	–	ATV61HU40M3 (1)	Size 3	ATV61HU30M3	Size 3	ATV61HU30N4 (3)	Size 3
	4	5	ATV61HU55M3 (1)	Size 4	ATV61HU40M3	Size 3	ATV61HU40N4 (3)	Size 3
	5.5	7.5	ATV61HU75M3 (1)	Size 5A	ATV61HU55M3	Size 4	ATV61HU55N4 (3)	Size 4
	7.5	10	–	–	ATV61HU75M3	Size 5A	ATV61HU75N4 (3)	Size 4
	11	15	–	–	ATV61HD11M3X (2)	Size 5B	ATV61HD11N4 (3)	Size 5A
	15	20	–	–	ATV61HD15M3X (2)	Size 5B	ATV61HD15N4 (3)	Size 5B
	18.5	25	–	–	ATV61HD18M3X (2)	Size 6	ATV61HD18N4 (3)	Size 5B
	22	30	–	–	ATV61HD22M3X (2)	Size 6	ATV61HD22N4 (3)	Size 6
	30	40	–	–	ATV61HD30M3X (2)	Size 7B	ATV61HD30N4 (3)	Size 7A
	37	50	–	–	ATV61HD37M3X (2)	Size 7B	ATV61HD37N4 (3)	Size 7A
	45	60	–	–	ATV61HD45M3X (2)	Size 7B	ATV61HD45N4 (3)	Size 8
	55	75	–	–	ATV61HD55M3X (2)	Size 9	ATV61HD55N4 (3)	Size 8
	75	100	–	–	ATV61HD75M3X (2)	Size 9	ATV61HD75N4 (3)	Size 8
	90	125	–	–	ATV61HD90M3X (2)	Size 10	ATV61HD90N4 (3)	Size 9
	110	150	–	–	–	–	ATV61HC11N4	Size 9
	132	200	–	–	–	–	ATV61HC13N4	Size 10
	160	250	–	–	–	–	ATV61HC16N4	Size 11
	200	300	–	–	–	–	ATV61HC22N4	Size 12
	220	350	–	–	–	–	ATV61HC22N4	Size 12
	250	400	–	–	–	–	ATV61HC25N4	Size 13
	280	450	–	–	–	–	ATV61HC31N4	Size 13
	315	500	–	–	–	–	ATV61HC31N4	Size 13
	355	–	–	–	–	–	ATV61HC40N4	Size 14
	400	600	–	–	–	–	ATV61HC40N4	Size 14
	500	700	–	–	–	–	ATV61HC50N4	Size 14
	560	800	–	–	–	–	ATV61HC63N4	Size 15
	630	900	–	–	–	–	ATV61HC63N4	Size 15

(1) Must be used with a line choke, see page 4/20.

(2) Drive supplied without EMC filter.

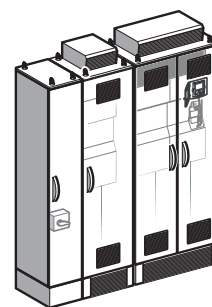
(3) To order a reinforced version of the drive for specific environmental conditions, conforming to IEC 60721-3-3 class 3c2, add **S337** at the end of the catalog number.

(4) Refer to page 4/24 for information on option cards if additional I/O is needed.

Altivar 61

IP54 drives

Available in 2007



Dimensions (mm) width x height x depth	
ATV61W...	ATV61E5C... in enclosure
Size A2: 235 x 490 x 272	A1 : 616 x 2000 x 600
Size A3: 235 x 490 x 286	A2 : 816 x 2000 x 600
Size B: 255 x 525 x 286	A3 : 1016 x 2000 x 600
Size C: 290 x 560 x 315	A3 : 1220 x 2000 x 600
Size D: 310 x 665 x 315	A3 : 2024 x 2000 x 600
Size E: 284 x 720 x 315	A4 : 1216 x 2000 x 600
Size F: 284 x 880 x 343	A4 : 1820 x 2000 x 600
Size G: 362 x 1000 x 364	A4 : 2224 x 2000 x 600

Type of drive				Three phase 380–480 V (3)		Three phase range in ready-assembled enclosure (5) 380–480 V	
Degree of protection				UL Type 12/IP54		IP54 enclosure	
Output frequency				0.5–1600 Hz up to 37 kW (50 Hp); 0.5–500 Hz from 45 to 630 kW (60 to 900 Hp)			
		Type of control	Asynchronous motor	Flux vector control with or without sensor			
		Synchronous motor	Vector control without speed feedback				
Transient overtorque				110% to 120% of the nominal drive current for 60 seconds			
Speed range				1–100 in open loop mode			
I/O				6			
		Logic inputs (4)					
		Analog inputs		2			
		Analog outputs		1			
		Relay outputs		2			
		Safety input		1			
Dialog				Remote graphic display terminal or PowerSuite software workshop (see page 4/32)			
Communication (see page 4/32)	Integrated		Modbus and CANopen				
	Available as an option		HVAC protocols: LonWorks, BACnet, METASYS N2, APOGEE FLN Industrial: Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBUS				
Cards (available as an option)				Multi-pump cards, I/O extension cards, "Controller Inside" programmable card			
Reduction of current harmonics				Integrated DC choke (optional chokes and passive filters, see page 4/20)			
EMC	Class A			Integrated filter		Integrated filter	
	Class B				Integrated filter	External filter available as an option	
Motor power	kW/Hp	0.75	1	ATV61W075N4 Size A2	ATV61W075N4C Size A2	–	
			1.5	2	ATV61WU15N4 Size A2	ATV61WU15N4C Size A2	–
		2.2	3	ATV61WU22N4 Size A2	ATV61WU22N4C Size A2	–	
			3	–	ATV61WU30N4 Size A3	ATV61WU30N4C Size A3	–
		4	5	ATV61WU40N4 Size A3	ATV61WU40N4C Size A3	–	
		5.5	7.5	ATV61WU55N4 Size B	ATV61WU55N4C Size B	–	
		7.5	10	ATV61WU75N4 Size B	ATV61WU75N4C Size B	–	
		11	15	ATV61WD11N4 Size C	ATV61WD11N4C Size C	–	
		15	20	ATV61WD15N4 Size D	ATV61WD15N4C Size D	–	
		18.5	25	ATV61WD18N4 Size D	ATV61WD18N4C Size D	–	
		22	30	ATV61WD22N4 Size E	ATV61WD22N4C Size E	–	
		30	40	ATV61WD30N4 Size F	ATV61WD30N4C Size F	–	
		37	50	ATV61WD37N4 Size F	ATV61WD37N4C Size F	–	
		45	60	ATV61WD45N4 Size G	ATV61WD45N4C Size G	–	
		55	75	ATV61WD55N4 Size G	ATV61WD55N4C Size G	–	
		75	100	ATV61WD75N4 Size G	ATV61WD75N4C Size G	–	
		90	125	ATV61WD90N4 Size G	ATV61WD90N4C Size G	–	
Ready-assembled enclosure with braking transistor integrated in the drive		110	150	–	–	ATV61HC11N4	A1
		132	200	–	–	ATV61HC13N4	A1
		160	250	–	–	ATV61HC16N4	A1
		220	350	–	–	ATV61HC22N4	A1
Ready-assembled enclosure with braking unit in the enclosure		250	400	–	–	ATV61HC25N4	A2
		315	500	–	–	ATV61HC31N4	A2
Ready-assembled enclosure without braking unit		250	400	–	–	ATV61HC25N4	A2
		315	500	–	–	ATV61HC31N4	A2
		400	600	–	–	ATV61HC40N4	A3
		500	700	–	–	ATV61HC50N4	A3
		630	900	–	–	ATV61HC63N4	A4

(5) The Altivar 61 range in ready-assembled enclosure consists of:

- An ATV61H... drive
- A switch and fast-acting fuses
- An IP65 remote mounting kit for graphic display terminal

Altivar 61

0.5–900 Hp
0.37–630 kW

Pumping and ventilation machines I/O extension and specific cards



Type of card	I/O extension	
	Logic	Extended
Description	1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 x 0–20 mA differential current analog input 1 software-configurable voltage (0–10VDC) or current (0–20 mA) analog input 2 software-configurable voltage (±10V, 0–10 VDC) or current (0–20 mA) analog outputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
Catalog number	VW3A3201	VW3A3202

“Controller Inside” programmable card



Type of card	Programmable “Controller Inside”
Description	10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs, 6 logic outputs, 2 analog outputs, a master port for the CANopen bus, a PC port for programming with the PS 1131 software workshop.
Catalog number	VW3A3501

Multi-pump cards



Type of card	Multi-pump
Description	Can be used to support all multi-pump applications The card's operating modes are: b OFF: no function is activated. This mode is used in particular during maintenance of the installation. b Single variable. b Multiple variable. b Single variable with changeover of auxiliary pumps. b Multiple variable with changeover of auxiliary pumps. b Single variable with limited operating time. b Multiple variable with limited operating time. b Single variable with changeover of auxiliary pumps and limited operating time. b Multiple variable with changeover of auxiliary pumps and limited operating time. b In addition to the existing operating modes, it is possible to develop new applications: booster station, irrigation, etc.
Catalog number	VW3A3502 VW3A3503



Altivar 61

0.5–900 Hp

0.37–630 kW

Dialog accessories



Accessory	Remote graphic display terminal	Remote mounting kit (1)
Description	This display terminal is attached to the front of the drive. It includes the integrated 7-segment display terminal for drives supplied without a graphic display terminal.	A remote mounting kit for mounting on an enclosure door with IP54 degree of protection. It includes: b All the mechanical fittings b Fixing accessories
References	VW3A1101	VW3A1102

(1) Use a VW3A1104Rpp remote-mounting connection cable, to be ordered separately (please consult the “Soft starters and variable speed drives” catalog).

Additional EMC input filters

The additional EMC input filters can be used to meet the requirements of the EMC “products” standard IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2.

Type of drive	Three phase 200–240 V 50/60 Hz			380–480 V 50/60 Hz	
		Class A	Class B	Class A	Class B
Maximum length of shielded cable (1)					
ATV61H075M3, HU15M3	VW3A4401	100 m	50 m	–	–
ATV61HU22M3–HU40M3	VW3A4402	100 m	50 m	–	–
ATV61HU55M3	VW3A4403	100 m	50 m	–	–
ATV61HU75M3	VW3A4404	100 m	50 m	–	–
ATV61HD11M3X, HD15M3X	VW3A4405	200 m	50 m	–	–
ATV61HD18M3X, HD22M3X	VW3A4406	200 m	50 m	–	–
ATV61HD30M3X–HD45M3X	VW3A4408	200 m	50 m	–	–
ATV61HD55M3X, HD75M3X	VW3A4410	100 m	50 m	–	–
ATV61HD90M3X	VW3A4411	100 m	50 m	–	–
ATV61p075N4(C)–pU22N4(C)	–			VW3A4401	100 m 50 m
ATV61pU30N4(C), pU40N4(C)	–			VW3A4402	100 m 50 m
ATV61pU55N4(C), pU75N4(C)	–			VW3A4403	100 m 50 m
ATV61pD11N4(C)	–			VW3A4404	100 m 50 m
ATV61pD15N4(C), pD18N4(C)	–			VW3A4405	300 m 100 m
ATV61pD22N4(C)	–			VW3A4406	300 m 100 m
ATV61pD30N4(C), pD37N4(C)	–			VW3A4407	300 m 100 m
ATV61pD45N4(C)–pD75N4(C)	–			VW3A4408	300 m 100 m
ATV61pD90N4(C)–HC16N4, ATV61E5C11N4...E5C16N4	–			VW3A4410	300 m 50 m
ATV61HC22N4–HC31N4, ATV61E5C22N4...E5C31N4	–			VW3A4411	300 m 50 m
ATV61HC40N4, HC50N4, ATV61E5C40N4, E5C50N4	–			VW3A4412	300 m 50 m
ATV61HC63N4, ATV61E5C63N4	–			VW3A4413	300 m 50 m

p Applies to the following drives: ATV61H–N4, ATV61H–N4C, ATV61W–N4, ATV61W–N4C.
1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 0.5 to 12 kHz.
These limites are given as examples only as they vary depending on the stray capacitance of the motors and the cables used.

Altivar 61

0.5–900 Hp

0.37–630 kW

Line reactors

Dimensions (mm)	width x height x depth
Size 1:	203 x 203 x 152
Size 2:	381 x 330 x 330
Size 3:	610 x 432 x 432

Supply voltage		Line reactors for variable torque or constant torque applications			
Degree of protection		Single-phase 200–240 V		Three phase 208–230 V	
Motor Power		Type 1 enclosed		Three phase 480 V	
Hp	0.5	RL00812	Size 1	–	–
	1	RL01212	Size 1	RL00412	Size 1
	2	RL01812	Size 1	RL00812	Size 1
	3	RL02512	Size 2	RL01212	Size 1
	(3 kW)	RL03512	Size 2	–	–
	5	RL04512	Size 2	RL01812	Size 1
	7.5	RL08012	Size 2	RL02512	Size 2
	10	–	–	RL03512	Size 2
	15	–	–	RL04512	Size 2
	20	–	–	RL05512	Size 2
	25	–	–	RL08012	Size 2
	30	–	–	RL10012	Size 2
	40	–	–	RL13012	Size 2
	50	–	–	RL16012	Size 2
	60	–	–	–	RL08013
	75	–	–	–	RL10013
	100	–	–	–	RL13013
	125	–	–	–	RL16013
	150	–	–	–	RL20013
	200	–	–	–	RL25013
	250	–	–	–	RL32013
	300	–	–	–	RL40013
	350-400	–	–	–	RL50013
	450-500	–	–	–	RL60013

For other versions or requirements above 500 Hp, please consult your nearest Schneider Electric/Square D sales office.



Altivar 61

0.5–900 Hp
0.37–630 kW

Motor protecting output filters

Dimensions (mm)	width x height x depth
Size 1:	311 x 318 x 171
Size 2:	486 x 394 x 394
Size 3:	562 x 521 x 619

Supply voltage		Motor protecting output filters for variable torque or constant torque applications Three phase 480 V	
Degree of protection		Type 1 enclosed	
Motor Power	Hp		
	1–2	KLCUL4A1	Size 1
	3	KLCUL6A1	Size 1
	5	KLCUL8A1	Size 1
	7.5	KLCUL12A1	Size 1
	10	KLCUL16A1	Size 1
	15	KLCUL25A1	Size 1
	20-25	KLCUL35A1	Size 1
	30	KLCUL45A1	Size 1
	40	KLCUL55A1	Size 1
	50-60	KLCUL80A1	Size 2
	75	KLCUL110A1	Size 2
	100	KLCUL130A1	Size 2
	125	KLCUL160A1	Size 2
	150	KLCUL200A1	Size 2
	200	KLCUL250A1	Size 2
	250	KLCUL300A1	Size 2
	300	KLCUL360A1	Size 2
	350	KLCUL420A1	Size 2
	400	KLCUL480A1	Size 2
	450-500	KLCUL600A1	Size 2

For other versions or requirements above 500 Hp, please consult your nearest Schneider Electric/Square D sales office.

Resistance braking units (integrated in ATV61 drives up to 220 kW)

ATV61HpppM3, ATV61HpppM3X and ATV61H075N4–HC22N4, ATV61WpppN4 and ATV61WpppN4C drives have a built-in braking transistor.
The braking resistor enables the Altivar 61 drive to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy.

Supply voltage	Three phase 380–480 V 50/60 Hz	
Type of drive	ATV61HC25N4, HC31N4	ATV61HC40N4, HC50N4, HC63N4
Continuous power/Max (kW)	200/420	400/750
Catalog number	VW3A7101	VW3A7102

Consult Square D / Schneider Electric Representative for Braking Resistor recommendations.

Altivar 71

0.5–700 Hp, 0.37–500 kW

Complex, high-power machines

IP21 drives



Dimensions (mm) width x height x depth			
Size 2	: 130 x 230 x 175	Size 3	: 155 x 260 x 187
Size 4	: 175 x 295 x 187	Size 5A	: 210 x 295 x 213
Size 5B	: 230 x 400 x 213	Size 6	: 240 x 420 x 236
Size 7A	: 240 x 550 x 266	Size 7B	: 320 x 550 x 266
Size 8	: 320 x 630 x 290	Size 9	: 320 x 920 x 377
Size 10	: 360 x 1022 x 377	Size 11	: 340 x 1190 x 377
Size 12	: 440 x 1190 x 377	Size 13	: 595 x 1190 x 377
Size 14	: 890 x 1390 x 377	Size 15	: 1120 x 1390 x 377

Type of drive				Single phase		Three phase		Three phase		Three phase on base plate	
Supply voltage				200–240 V (3)		200–240 V (3)		380–480 V (3)		380–480 V (3)	
Degree of protection				IP21 for unprotected drives and IP41 on the upper part							
Output frequency				0.1–1600 Hz up to 37 kW / 50 HP 0.1–500 Hz from 45 to 500 kW / 60 to 700 HP							
Type of control		Asynchronous motor		Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System							
		Synchronous motor		Vector control without speed feedback							
Transient overtorque				220% of nominal motor torque for 2 seconds, and 170% for 60 seconds							
Speed range				1–1000 in closed loop mode with encoder feedback, 1–100 in open loop mode							
I/O (4)		Analog inputs		2							
		Logic inputs		6							
		Analog outputs		1							
		Relay outputs		2							
		Safety input		1							
Dialog				Remote graphic display terminal or PowerSuite software workshop (see pages 4/25 and 4/28)							
Communication (see page 4/32)		Integrated		Modbus and CANopen							
		Available as an option		Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBUS							
Cards (available as an option)				Encoder interface cards, I/O extension cards, “Controller Inside” programmable card							
Reduction of current harmonics				DC choke integrated or supplied with the product, (optional chokes and passive filters, see page 4/26)							
EMC		Class A		Integrated filter							
		Class B		External filter available as an option							
Motor power		kW/HP		0.37	0.5	ATV71H075M3	Size 2	ATV71H037M3	Size 2	–	–
		0.75	1	ATV71HU15M3	Size 2	ATV71H075M3	Size 2	ATV71H075N4 (3)	Size 2	ATV71P075N4Z	Size 2
		1.5	2	ATV71HU22M3	Size 3	ATV71HU15M3	Size 2	ATV71HU15N4 (3)	Size 2	ATV71PU15N4Z	Size 2
		2.2	3	ATV71HU30M3	Size 3	ATV71HU22M3	Size 3	ATV71HU22N4 (3)	Size 2	ATV71PU22N4Z	Size 2
		3	–	ATV71HU40M3 (1)	Size 3	ATV71HU30M3	Size 3	ATV71HU30N4 (3)	Size 3	ATV71PU30N4Z	Size 3
		4	5	ATV71HU55M3 (1)	Size 4	ATV71HU40M3	Size 3	ATV71HU40N4 (3)	Size 3	ATV71PU40N4Z	Size 3
		5.5	7.5	ATV71HU75M3 (1)	Size 5A	ATV71HU55M3	Size 4	ATV71HU55N4 (3)	Size 4	ATV71PU55N4Z	Size 4
		7.5	10	–		ATV71HU75M3	Size 5A	ATV71HU75N4 (3)	Size 4	ATV71PU75N4Z	Size 4
		11	15	–		ATV71HD11M3X (2)	Size 5B	ATV71HD11N4 (3)	Size 5A	–	
		15	20	–		ATV71HD15M3X (2)	Size 5B	ATV71HD15N4 (3)	Size 5B	–	
		18.5	25	–		ATV71HD18M3X (2)	Size 6	ATV71HD18N4 (3)	Size 5B	–	
		22	30	–		ATV71HD22M3X (2)	Size 6	ATV71HD22N4 (3)	Size 6	–	
		30	40	–		ATV71HD30M3X (2)	Size 7B	ATV71HD30N4 (3)	Size 7A	–	
		37	50	–		ATV71HD37M3X (2)	Size 7B	ATV71HD37N4 (3)	Size 7A	–	
		45	60	–		ATV71HD45M3X (2)	Size 7B	ATV71HD45N4 (3)	Size 8	–	
		55	75	–		ATV71HD55M3X (2)	Size 9	ATV71HD55N4 (3)	Size 8	–	
		75	100	–		ATV71HD75M3X (2)	Size 10	ATV71HD75N4 (3)	Size 8	–	
		90	125	–		–		ATV71HD90N4	Size 9	–	
		110	150	–		–		ATV71HC11N4	Size 10	–	
		132	200	–		–		ATV71HC13N4	Size 11	–	
		160	250	–		–		ATV71HC16N4	Size 12	–	
		200	300	–		–		ATV71HC20N4	Size 13	–	
		220	350	–		–		ATV71HC25N4	Size 13	–	
		280	450	–		–		ATV71HC28N4	Size 13	–	
		315	500	–		–		ATV71HC31N4	Size 14	–	
		355	–	–		–		ATV71HC40N4	Size 14	–	
		500	700	–		–		ATV71HC50N4	Size 15	–	

(1) Must be used with a line choke, see page 4/26.

(2) Drive supplied without EMC filter.

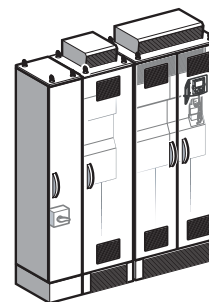
(3) To order a reinforced version of the drive for specific environmental conditions, conforming to IEC 60721-3-3 class 3c2, add **S337** at the end of the catalog number.

e.g. ATV71H075N4**S337**

(4) Refer to page 4/24 for information on option cards if additional I/O is needed.



IP54 drives



Dimensions (mm) width x height x depth	
ATV71W...	ATV71E5C... in enclosure
Size A2 : 235 x 490 x 272	A1 : 616 x 2000 x 600
Size A3 : 235 x 490 x 286	A2 : 816 x 2000 x 600
Size B : 255 x 525 x 286	A3 : 1016 x 2000 x 600
Size C : 290 x 560 x 315	A3 : 1220 x 2000 x 600
Size D : 310 x 665 x 315	A3 : 2024 x 2000 x 600
Size E : 284 x 720 x 315	A4 : 1216 x 2000 x 600
Size F : 284 x 880 x 343	A4 : 1820 x 2000 x 600
Size G : 362 x 1000 x 364	A4 : 2224 x 2000 x 600

Type of drive				Three phase 380—480 V (3)		Three phase range in ready-assembled enclosure(4) 380—480 V				
Degree of protection				UL Type 12/IP54			IP54 enclosure			
Drive	Output frequency			0.1–1600 Hz up to 37 kW, 0.1–500 Hz from 45 to 500 kW						
	Type of control	Asynchronous motor			Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System					
		Synchronous motor			Vector control without speed feedback					
	Transient overtorque				220% of nominal motor torque for 2 seconds, and 170% for 60 seconds					
Speed range				1–1000 in closed loop mode with encoder feedback, 1–100 in open loop mode						
I/O (4)		Analog inputs		2						
		Logic inputs		6						
		Analog outputs		1						
		Relay outputs		2						
		Safety input		1						
Dialog				Remote graphic display terminal or PowerSuite software workshop (see page 4/28)						
Communication (see page 4/28)	Integrated			Modbus and CANopen						
	Available as an option			Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBUS						
Cards (available as an option)				Encoder interface cards, I/O extension cards, “Controller Inside” programmable card						
Reduction of current harmonics				Optional chokes and passive filters (see page 4/26)						
EMC	Class A			Integrated filter						
	Class B			External filter available as an option						
Motor power	kW/HP	0.75	1	ATV71W075N4		Size A2	–			
		1.5	2	ATV71WU15N4		Size A2	–			
		2.2	3	ATV71WU22N4		Size A2	–			
		3	–	ATV71WU30N4		Size A3	–			
		4	5	ATV71WU40N4		Size A3	–			
		5.5	7.5	ATV71WU55N4		Size B	–			
		7.5	10	ATV71WU75N4		Size B	–			
		11	15	ATV71WD11N4		Size C	–			
		15	20	ATV71WD15N4		Size D	–			
		18.5	25	ATV71WD18N4		Size D	–			
		22	30	ATV71WD22N4		Size E	–			
		30	40	ATV71WD30N4		Size F	–			
		37	50	ATV71WD37N4		Size F	–			
		45	60	ATV71WD45N4		Size G	–			
		55	75	ATV71WD55N4		Size G	–			
75	100	ATV71WD75N4		Size G	–					
Ready-assembled enclosure with braking transistor integrated in the drive	90	125	–		ATV71HD90N4		ATV71E5D90N4	A1		
	110	150	–		ATV71HC11N4			A1		
	132	200	–		ATV71HC13N4			A1		
	160	250	–		ATV71HC16N4			A1		
	200	300	–		ATV71HC20N4			A2		
	220	350	–		ATV71HC25N4			A2		
	280	450	–		ATV71HC28N4			A2		
Ready-assembled enclosure with braking unit in the enclosure	200	300	–		ATV71HC20N4			A2		
	220	350	–		ATV71HC25N4			A2		
	280	450	–		ATV71HC28N4			A2		
Ready-assembled enclosure without braking unit	315	500	–		ATV71HC31N4			A3		
	400	600	–		ATV71HC40N4			A3		
	500	700	–		ATV71HC50N4			A4		

(4) The Altivar 71 range in ready-assembled enclosure consists of:

- An ATV71H... drive
- A switch and fast-acting fuses
- An IP65 remote mounting kit for graphic display terminal

Altivar 71

0.5–700 Hp
0.37–500 kW

Complex, high-power machines I/O extension and specific cards



Type of card	I/O extension	
	Logic	Extended
Description	1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 0–20 mA differential current analog input 1 software-configurable voltage (0–10 VDC) or current (0–20 mA) analog input 2 software-configurable voltage (±10V, 0–10VDC) or current (0–20 mA) analog outputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
Catalog number	VW3A3201	VW3A3202

“Controller Inside” programmable card



Type of card	Programmable “Controller Inside”
Description	10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs 6 logic outputs 2 analog outputs A master port for the CANopen bus A PC port for programming with the PS 1131 software workshop
Catalog number	VW3A3501

Encoder interface cards



Type of card		Encoder interface with		
		Differential outputs (RS422)	Open collector outputs (NPN)	Push-pull outputs
Operating frequency		300 kHz		
Catalog number	5 V	VW3A3401	–	–
	12 V	–	VW3A3403	VW3A3405
	15 V	VW3A3402	VW3A3404	VW3A3406
	24 V	–	–	VW3A3407



Altivar 71

0.5–700 Hp

0.37–500 kW

Dialog accessories



Accessory	Remote graphic display terminal	Remote mounting kit (1)
Description	This display terminal is attached to the front of the drive. It includes the integrated 7-segment display terminal for drives supplied without a graphic display terminal.	A remote mounting kit for mounting on an enclosure door with IP54 degree of protection. It includes b All the mechanical hardware and accessories.
Catalog number	VW3A1101	VW3A1102

(1) Use a VW3A1104Rpp remote-mounting connection cable, to be ordered separately (please consult the "Soft starters and variable speed drives" catalog).

4

Additional EMC input filters

The additional EMC input filters can be used to meet the requirements of the EMC "products" standard IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2.

Type of drive	Three phase			380–480 V 50/60 Hz	
	200–240 V 50/60 Hz			Class A	Class B
Maximum length of shielded cable (1)		Class A	Class B		
ATV71H037M3–HU15M3	VW3A4401	100 m	50 m	–	
ATV71HU22M3–HU40M3	VW3A4402	100 m	50 m	–	
ATV71HU55M3	VW3A4403	100 m	50 m	–	
ATV71HU75M3	VW3A4404	100 m	50 m	–	
ATV71HD11M3X, HD15M3X	VW3A4405	100 m	50 m	–	
ATV71HD18M3X, HD22M3X	VW3A4406	100 m	50 m	–	
ATV71HD30M3X–HD45M3X	VW3A4408	100 m	50 m	–	
ATV71HD55M3X, HD75M3X	VW3A4410	100 m	50 m	–	
ATV71p075N4–pU22N4, ATV71P075N4Z–PU22N4Z	–			VW3A4401	100 m 50 m
ATV71pU30N4, pU40N4, ATV71PU30N4Z, PU40N4Z	–			VW3A4402	100 m 50 m
ATV71pU55N4, pU75N4, ATV71PU55N4Z, PU75N4Z	–			VW3A4403	100 m 50 m
ATV71pD11N4	–			VW3A4404	100 m 50 m
ATV71pD15N4, pD18N4	–			VW3A4405	300 m 100 m
ATV71pD22N4	–			VW3A4406	300 m 100 m
ATV71pD30N4, pD37N4	–			VW3A4407	300 m 100 m
ATV71pD45N4–pD75N4	–			VW3A4408	300 m 100 m
ATV71HD90N4–HC13N4, ATV71E5D90N4–E5C13N4	–			VW3A4410	300 m 50 m
ATV71HC16N4–HC28N4, ATV71E5C16N4–E5C28N4	–			VW3A4411	300 m 50 m
ATV71HC31N4, HC40N4, ATV71E5C31N4, E5C40N4	–			VW3A4412	300 m 50 m
ATV71HC50N4, ATV71E5C50N4	–			VW3A4413	300 m 50 m

p Applies to the following drives: ATV71H–N4, ATV71W–N4.

1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 0.5 to 12 kHz.

These limits are given as examples only as they vary depending on the stray capacitance of the motors and the cables used.

Altivar 71

0.5–700 Hp
0.37–500 kW

Line reactors

Dimensions (mm)	width x height x depth
Size 1:	203 x 203 x 152
Size 2:	381 x 330 x 330
Size 3:	610 x 432 x 432

Supply voltage		Line reactors for variable torque or constant torque applications					
Degree of protection		Single-phase 200–240 V		Three phase 208–230 V		Three phase 480 V	
Motor Power		Type 1 enclosed					
Hp							
0.5		RL00812	Size 1	–		–	
1		RL01212	Size 1	RL00412	Size 1	RL00212	Size 1
2		RL01812	Size 1	RL00812	Size 1	RL00413	Size 1
3		RL02512	Size 2	RL01212	Size 1	RL00413	Size 1
(3 kW)		RL03512	Size 2	–			
5		RL04512	Size 2	RL01812	Size 1	RL00813	Size 2
7.5		RL08012	Size 2	RL02512	Size 2	RL01213	Size 2
10		–		RL03512	Size 2	RL01813	Size 2
15		–		RL04512	Size 2	RL02513	Size 2
20		–		RL05512	Size 2	RL03513	Size 2
25		–		RL08012	Size 2	RL03513	Size 2
30		–		RL10012	Size 2	RL04513	Size 2
40		–		RL13012	Size 2	RL05513	Size 2
50		–		VW3A4553	Size 2	RL08013	Size 2
60		–		–		RL08013	Size 2
75		–		–		RL10013	Size 2
100		–		–		RL13013	Size 2
125		–		–		RL16013	Size 2
150		–		–		RL20013	Size 2
200		–		–		RL25013	Size 2
250		–		–		RL32013	Size 2
300		–		–		RL40013	Size 2
350-400		–		–		RL50013	Size 2
450-500		–		–		RL60013	Size 2

For other versions or requirements above 500 Hp, please consult your nearest Schneider Electric/Square D sales office.



Altivar 71

0.5–700 Hp
0.37–500 kW

Motor protecting output filters

Dimensions (mm)	width x height x depth
Size 1:	311 x 318 x 171
Size 2:	486 x 394 x 394
Size 3:	562 x 521 x 619

Supply voltage		Motor protecting output filters for variable torque or constant torque applications	
Degree of protection		Three phase 480 V	
Motor Power		Type 1 enclosed	
Hp			
1–2		KLCUL4A1	Size 1
3		KLCUL6A1	Size 1
5		KLCUL8A1	Size 1
7.5		KLCUL12A1	Size 1
10		KLCUL16A1	Size 1
15		KLCUL25A1	Size 1
20-25		KLCUL35A1	Size 1
30		KLCUL45A1	Size 1
40		KLCUL55A1	Size 1
50-60		KLCUL80A1	Size 2
75		KLCUL110A1	Size 2
100		KLCUL130A1	Size 2
125		KLCUL160A1	Size 2
150		KLCUL200A1	Size 2
200		KLCUL250A1	Size 2
250		KLCUL300A1	Size 2
300		KLCUL360A1	Size 2
350		KLCUL420A1	Size 2
400		KLCUL480A1	Size 2
450-500		KLCUL600A1	Size 2

For other versions or requirements above 500 Hp, please consult your nearest Schneider Electric/Square D sales office.

4

Altivar/Altistart

Dialog and communication PowerSuite software workshop



Multilingual configuration software		For PC
Configuration of drives and starters		Altistart 48, Altivar (except Altivar 21) and TeSys model U
Environment		Microsoft Windows ®
Languages		English - French - German - Italian - Spanish
Catalog number	PowerSuite CD-ROM (1)	VW3A8104
	PowerSuite update CD-ROM	VW3A8105
	Connection kit for serial port	VW3A8106

(1) Contents: Software, technical documentation and the ABC configurator program.

4

Accessories

Multilingual configuration software		Bluetooth® adaptor
Description	Modbus - Bluetooth®	USB - Bluetooth® for PC
Catalog number	VW3A8114 (1)	VW3A8115

(1) Can also be used to communicate between a Twido PLC and the TwidoSoft software workshop.

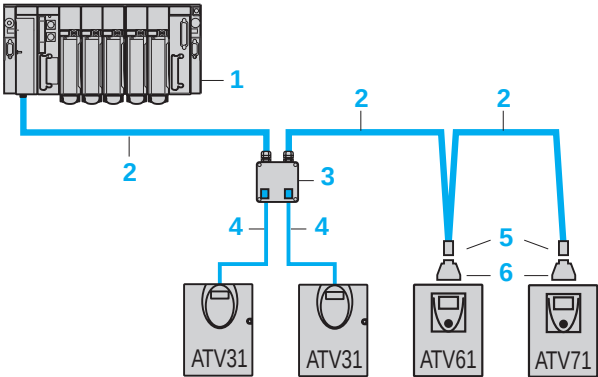
CANopen communication bus: connection accessories



Drives	Tap junction VW3CANTAP2		CANopen adaptor	CANopen connector
	0.3 m cable	1 m cable		
ATV31	2 RJ45 connectors		—	—
ATV61 and ATV71	—		RJ 45 to 9-way male SUB-D	9-way female SUB-D output for 2 cables at 180°
Catalog number	VW3CANCARR03	VW3CANCARR1	VW3CANA71	VW3CANKCDF180T

CANopen cables

		CANopen LSZH	CANopen UL/IEC332-2	LSZH HD flexible CANopen
Catalog number	L = 50 m	TSXCANCA50	TSXCANCB50	TSXCANCD50
	L = 100 m	TSXCANCA100	TSXCANCB100	TSXCANCD100
	L = 300 m	TSXCANCA300	TSXCANCB300	TSXCANCD300



- 1 PLC
- 2 CANopen trunk cable TSXCANCpp
- 3 CANopen tap junction VW3CANTAP2
- 4 CANopen drop cable VW3CANCARRpp
- 5 CANopen connector VW3CANKCDF180T
- 6 CANopen adaptor VW3CANA71



Altivar/Altistart

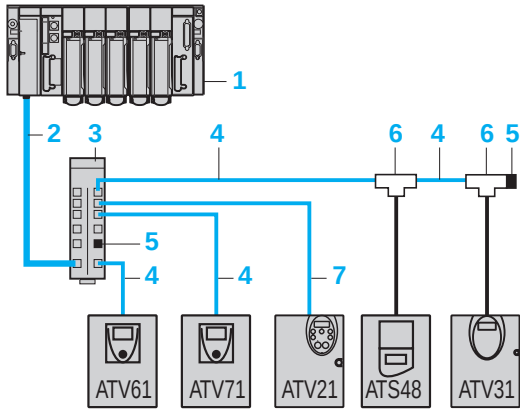
Modbus communication bus: connection accessories



Starters/drives Altistart 48, Altivar 21, 31, 61, 71	Splitter box	Tap junction	Subscriber socket	Line terminators	
Description	10 connectors RJ45 and 1 screw terminal	3 screw terminals line terminator RC	2 SUB-D connectors 15-way female and 2 screw terminals RC line terminator	For connector RJ 45 R = 120 Ω, C = 1 nF	For screw terminals R = 120 Ω, C = 1 nF
Catalog number	LU9GC3	TSXSCA50	TSXSCA62	VW3A8306RC	VW3A8306DRC

Modbus connection

Starters/drives Altistart 48, Altivar 21, 31, 61, 71	Cables	Double shielded twisted pair cables RS 485		T-junction boxes
Description	2 connectors RJ 45	1 connector RJ45 and one stripped end	Supplied without connector	With integrated cable
Catalog number	L = 0.3 m	VW3A8306R03	–	VW3A8306TF03
	L = 1 m	VW3A8306R10	–	VW3A8306TF10
	L = 3 m	VW3A8306R30	VW3A8306D30	–
	L = 100 m	–	TSXCSA100	–
	L = 200 m	–	TSXCSA200	–
	L = 500 m	–	TSXCSA500	–



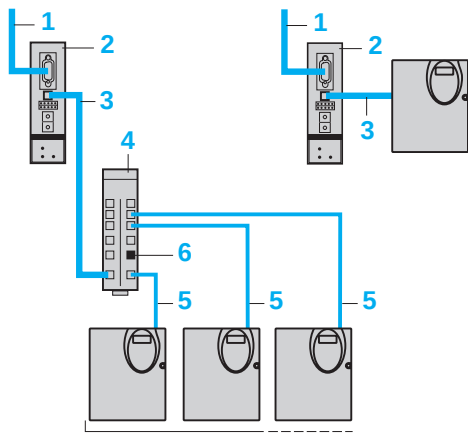
- Connection via splitter boxes and RJ 45 connectors
- 1 PLC
 - 2 Modbus cable depending on the type of PLC
 - 3 Modbus splitter box LU9GC3
 - 4 Modbus drop cables VW3A8306Rpp
 - 5 Line terminators VW3A8306RC
 - 6 Modbus T-junction boxes VW3A8306TFpp (with cable)
 - 7 Modbus drop cable VW3A58306Rpp

Altivar/Altistart

Dialog and communication
Communication modules



Starters/drives		Ethernet/Modbus	DeviceNet/Modbus	Fipio/Modbus	ProfibusDP/Modbus
Altistart 48/Altivar 31					
Parameter setting		—	—	—	ABC configurator program
Catalog number	Bridge	TSXETG100	—	—	—
	Gateway	—	LUFP9	LUFP1	LUFP7
Catalog number	L = 0.3 m	—	VW3A8306R03	VW3A8306R03	VW3A8306R03
	L = 1 m	—	VW3A8306R10	VW3A8306R10	VW3A8306R10
	L = 3 m	VW3A8306D30	VW3A8306R30	VW3A8306R30	VW3A8306R30



- 1 To network
- 2 Communication modules
- 3 PLC cables VW3A8 306 Rpp, VW3 P07 306 R10
- 4 Modbus splitter box LU9 GC3
- 5 Modbus drop cables VW3A8 306 Rpp
- 6 Line terminator VW3A8 306 RC

Altivar/Altistart

Communication cards and modules



Drives Altivar 61, Altivar 71	Ethernet	Modbus/Uni-Telway	Fipio
Maximum number of drives controlled	–	Uni-Telway: 27 Modbus: 31	62
Transmission speed	10/100 Mbps	4800–19200 bps	1 Mbps
Catalog number	VW3A3310	VW3A3303	VW3A3311

Drives Altivar 61, Altivar 71	Modbus Plus	Profibus DP	DeviceNet	INTERBUS
Maximum number of drives controlled	64	126	63	64
Transmission speed	1 Mbps	9600 bps–12 Mbps	125/250/500 Kbps	1 Mbps
Catalog number	VW3A3302	VW3A3307	VW3A3309	VW3A3304

Drives Altivar 61	LONWORKS	METASYS N2	APOGEE FLN	BACnet
Connector	1 removable 3-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal
Transmission speed	78 Kbps	–	–	–
Catalog number	VW3A3312	VW3A3313	VW3A3314	VW3A3315

For other connection accessories, please consult the "Soft starters and variable speed drives" catalog.

Motion control
Modules for Modicon Premium platform



Module type		For translators (amplifier for stepper motor)		For analog control servomotors (for asynchronous and brushless motors)				
Control outputs		RS 422		+/- 10 V				
Compatible with drives		Lexium 05		Lexium 05/17D				
Functions	Linear axes	–		Limited		Limited or infinite		Limited or infinite (1)
	Slave axes	–		With static ratio		With dynamic ratio		–
Frequency for each axis		187 kHz		500 kHz with incremental encoder, 200 kHz with absolute encoder (SSI serial or parallel output)				
Number of axes		1	2	2	4	2	4	3
Catalog number		TSXCFY11	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY42	TSXCAY33

(1) With linear interpolation on 2 or 3 axes.



Module type		Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs		SERCOS® network ring		
Compatible with ranges		Lexium 17D		
Functions		Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing		4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (2)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis		4 Mb SERCOS® network ring		
Number of axes		8 (3)	8 (3)	16 (4)
Catalog number		TSXCSY84	TSXCSY85	TSXCSY164

(2) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(3) 8 real axes, 4 imaginary axes and 4 remote axes.

(4) 16 axes (real axes, imaginary and remote axes).



SERCOS® Connection Accessories

Type		Fiber optic cables For Lexium 15 drives
Connection		Pre-equipped cable with SMA connectors
Catalog number	L = 0.3 m	990MCO00001
	L = 0.9 m	990MCO00003
	L = 1.5 m	990MCO00005
	L = 4.5 m	990MCO00015
	L = 16.5 m	990MCO00055
	L = 22.5 m	990MCO00075
	L = 37.5 m	990MCO00125

Lexium 05

Motion control
Servo drives for BSH servo motors



Servo drive type		Digital for servo motors		
		Size 1	Size 2	Size 3
Supply voltage		110–120 VAC single phase		
Output current	Continuous (RMS)	4 A	8 A	15 A
	Maximum (Peak)	10 A	17 A	28 A
Safety function		Integrated "Power Removal"		
Braking resistor		Integrated		
EMC filter		Integrated		
Catalog number with Integrated CANopen (1)		LXM05AD10F1	LXM05AD17F1	LXM05AD28F1



Servo drive type		Digital for servo motors					
		Size 1	Size 2	Size 3	Size 1	Size 2	Size 3
Supply voltage		200–240 VAC single phase			200–240 VAC 3-phase		
Output current	Continuous (RMS)	4 A	8 A	15 A	4 A	8 A	17 A
	Maximum (Peak)	10 A	17 A	28 A	10 A	17 A	42 A
Safety function		Integrated "Power Removal"					
Braking resistor		Integrated					
EMC filter		Integrated			Not integrated		
Catalog number with Integrated CANopen (1)		LXM05AD10M2	LXM05AD17M2	LXM05AD28M2	LXM05AD10M3X	LXM05AD17M3X	LXM05AD42M3X



Servo drive type		Digital for servo motors			
		Size 2	Size 2	Size 3	Size 4
Supply voltage		380–480 VAC 3-phase		380–480 VAC 3-phase	
Output current	Continuous (RMS)	6 A	9A	15 A	25 A
	Maximum (Peak)	14 A	22 A	34 A	57 A
Safety function		Integrated "Power Removal"			
Braking resistor		Integrated			
EMC filter		Integrated			
Catalog number with Integrated CANopen (1)		LXM05AD14N4	LXM05AD22N4	LXM05AD34N4	LXM05AD57N4

(1) To order a Lexium 05 servo drive with PROFIBUS DP bus, remplace "A" in the catalog number by "B". Exemple LXM05AD14N4 become LXM05BD14N4.



Motion control
Additional EMC input filters

Lexium 05



Supply voltage			Single phase	3-phase
Maximum cable length		Category C3	40 m	40 m
		Category C2	20 m	20 m
Catalog number	Drives	Size 1	LXM05AD10F1, LXM05AD10M2	LXM05AD10M3X
	Filters		VW3A31401	VW3A31402
	Drives	Size 2	LXM05AD17F1, LXM05AD17M2	LXM05AD17M3X, LXM05AD14N4
	Filters		VW3A31403	VW3A31404
	Drives	Size 3	LXM05AD28F1, LXM05AD28M2	LXM05AD42M3X, LXM05AD22N4, LXM05AD34N4
	Filters		VW3A31405	VW3A31406
		Size 4		LXM05AD57N4
		Filters	–	VW3A31407

4

Line inductances



Supply voltage			Single phase 110–120 V	200–240 V	3-phase 200–240 V	380–480 V
Catalog number	Drives	Size 1	LXM05AD10F1	LXM05AD10M2	LXM05AD10M3X	–
	Inductances		VZ1L007UM50	VZ1L007UM50	VW3A4551	
	Drives	Size 2	LXM05AD17F1	LXM05AD17M2	LXM05AD17M3X	LXM05AD10N4, LXM05AD22N4
	Inductances		VZ1L018UM20	VZ1L018UM20	VW3A4552	VW3A4551
	Drives	Size 3	LXM05AD28F1	LXM05AD28M2	LXM05AD42M3X	LXM05AD34N4
	Inductances		VZ1L018UM20	VZ1L018UM20	VW3A4553	VW3A4552
		Size 4				LXM05AD57N4
		Inductances	–	–	–	VW3A4552

Holding brake controller

Controller type	Holding brake
Power supply	24 VDC
Maximum current	1.6 A
Maximum power	50 W
Degree of protection	IP20
Catalog number	VW3M3103

External braking resistors

Resistor type			External braking for Lexium 05 drives						
Resistance			10 Ω	27 Ω				72 Ω	
Power			400 W	100 W	200 W	400 W	100 W	200 W	400 W
Catalog number (1)	cable length	L = 0.75 m	VW3 A7601R07	A7602R07	A7603R07	A7604R07	A7605R07	A7606R07	A7607R07
		L = 2 m	VW3 A7601R20	A7602R20	A7603R20	A7604R20	A7605R20	A7606R20	A7607R20
		L = 3 m	VW3 A7601R30	A7602R30	A7603R30	A7604R30	A7605R30	A7606R30	A7607R30

(1) In order to select the braking resistor, you need to calculate the continuous and peak power to be dissipated in it. Please consult our Lexium 05 catalog.

Lexium 05

Motion control PowerSuite software workshop



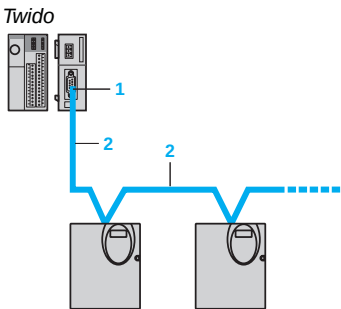
▲ Launch 1st quarter 2006

Multilingual configuration software		For PC
Configuration of drives and softstarters		Lexium 05 / Altivar / Altistart
Environment		Microsoft Windows ®
Languages		English - French - German - Italian - Spanish
Catalog number	PowerSuite CD-ROM	(1) ▲
	Connection kit	VW3A8106 ▲

(1) A dedicated PowerSuite software for Lexium is delivered with each servo drive.

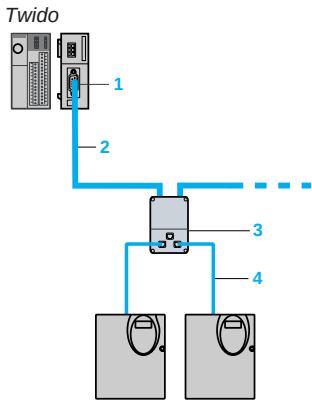
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CANopen communication bus connection



- 1 SUB-D connector
- 2 CANopen cable standard

Connection type		Via spring terminal (CN1)			
		Connector IP20	Cable		
Connector type		Bended at 90° SUB-D	–		
Type of cable		–	Halogen free	UL certification	For heavy duty
Catalog number		TSXCANKCDF90	–	–	–
L = 50 m		–	TSXCANCA50	TSXCANCB50	TSXCANCD50
L = 100 m		–	TSXCANCA100	TSXCANCB100	TSXCANCD100
L = 300 m		–	TSXCANCA300	TSXCANCB300	TSXCANCD300



- 1 SUB-D connector
- 2 CANopen cable standard
- 3 Junction box
- 4 Cable for CANopen bus

Connection type		Via RJ45 connector	
		Junction box	Cable
Description		2 RJ45 ports	2 RJ45 connectors
Catalog number		VW3CANTAP2	–
L = 0.3 m		–	VW3CANCARR03
L = 100 m		–	VW3CANCARR1



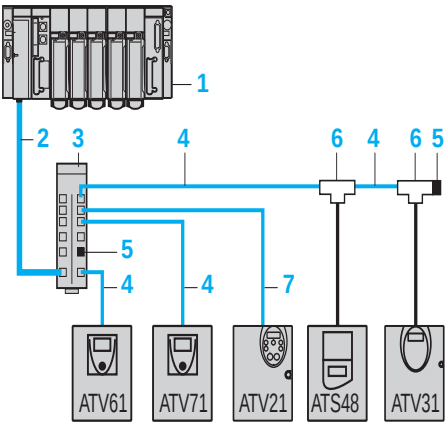
Motion control
Modbus serial link
connection accessories

Lexium 05



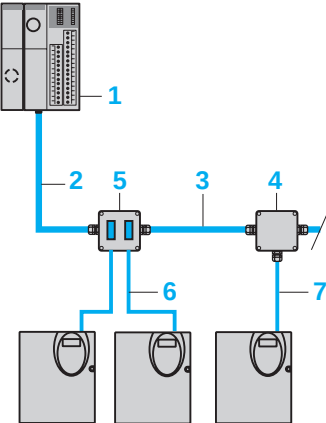
Drives		Lexium 05		
Connection type	Description	Splitter box with 10 RJ45 connectors and 1 screw terminal block	Junction box for drop cable VW3A8306D30	Subscriber socket for drop cable VW3A8306
	Catalog number	LU9GC3	TSXSCA50	TSXSCA62
Line terminators	For RJ 45 connector	R = 120 Ω, C = 1 nf		R = 150 Ω, C = 1 nf
	Catalog number	VW3A8306RC		VW3A8306R
	For screw terminals	R = 120 Ω, C = 1 nf		R = 150 Ω, C = 1 nf
T-junction boxes	With integrated cable 0.3 m	VW3A8306TF03		
	With integrated cable 1 m	VW3A8306TF10		
Cables	Description	2 RJ 45 connectors		
	Catalog number 0.3 m	VW3A8306R03		
	1 m	VW3A8306R10		
	3 m	VW3A8306R30		
RS 485 shielded twisted double pair cables	Description	1 RJ45 connector and one stripped end		
	Catalog number 3 m	VW3A8306D30		
	Description	Supplied without connector		
	Catalog number 100 m	TSXCSA100		
	200 m	TSXCSA200		
	500 m	TSXCSA500		

Connection with RJ45 splitter box and screw terminals



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus splitter box LU9 GC3
- 4 Modbus drop cables VW3 A8 306Rpp
- 5 Line terminators VW3 A8 306RC
- 6 Modbus T-junction boxes VW3 A8 306TFpp (with cable)

Connection with junction box or subscriber sockets



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus cables TSX CSA p00
- 4 T-junction box TSX SCA 50
- 5 Subscriber socket TSX SCA 62
- 6 Modbus drop cables VW3 A8 306
- 7 Modbus drop cables VW3 A8 306 D30

Connection via screw terminals

In this case, a Modbus drop cable (VW3 A8 306D30) and line terminators (VW3 A8 306DRC) are used.

Lexium 05 servo drives

Nominale speed	D10M2 0.75 kW	D17M2 1.2 kW	D28M2 2.5 kW	
6000 min ⁻¹	1.4 Nm			
1500 min ⁻¹	2.2 Nm			
4000 min ⁻¹	2.7 Nm			
6000 min ⁻¹	1.8 Nm			
1500 min ⁻¹	3.5 Nm			
4000 min ⁻¹	3.2 Nm			
6000 min ⁻¹		3.3 Nm		
3000 min ⁻¹	2.6 Nm			
6000 min ⁻¹		3.2 Nm		
1500 min ⁻¹	5.6 Nm			
3000 min ⁻¹	4.6 Nm	5.6 Nm		
6000 min ⁻¹		4.1 Nm	6.7 Nm	
1500 min ⁻¹	8.5 Nm			
3000 min ⁻¹		7.2 Nm	10.3 Nm	
6000 min ⁻¹			7.4 Nm	
6000 min ⁻¹			8.5 Nm	
2000 min ⁻¹			16 Nm	
2000 min ⁻¹			19.7 Nm	

	380/480 V three phase, with integrated EMC filter LXM 05 p			
Nominale speed	D14N4 1.4 kW	D22N4 2 kW	D34N4 3 kW	D57N4 6 kW
6000 min ⁻¹	2.7 Nm			
6000 min ⁻¹	3.9 Nm			
6000 min ⁻¹	5.6 Nm			
3000 min ⁻¹	8.5 Nm			
6000 min ⁻¹		8.7 Nm		
2000 min ⁻¹	7.1 Nm			
4000 min ⁻¹		8.5 Nm		
2000 min ⁻¹	13.3 Nm			
4000 min ⁻¹		13.9 Nm		
2000 min ⁻¹		23 Nm		
4000 min ⁻¹			23 Nm	
3000 min ⁻¹			23.4 Nm	35.7 Nm
2500 min ⁻¹			28 Nm	
1250 min ⁻¹			57 Nm	
2500 min ⁻¹			38.6 Nm	54.3 Nm
1250 min ⁻¹			70.3 Nm	84.3 Nm
3000 min ⁻¹				62.2 Nm
1500 min ⁻¹				102 Nm
3000 min ⁻¹				63.8 Nm
1500 min ⁻¹				82 Nm

Motion control

BSH servo motors for Lexium 05

Lexium 05

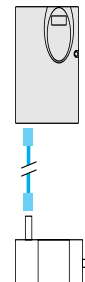
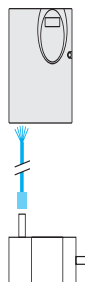


To order a BSH motor, please use these catalog numbers

Catalog number to be completed :		BSH	ppp	p	p	p	p	p	p
A									
Flange size	55 mm	055							
	70 mm	070							
	100 mm	100							
	140 mm	140							
	205 mm	205							
Length (Number of magnet stacks)	1		1						
	2		2						
	3		3						
	4		4						
Winding type	Lowest speed			M					
	Medium speed			P					
Shaft (1)	Highest speed			T					
	w/o key (smooth) : IP40 (IP65)				0				
	with key : IP40 (IP65)				1				
	w/o key : IP65				2				
Encoder	with key IP65				3				
	Absolute SinCos, single turn (128 periods per revolution)					1			
Brake	Absolute SinCos multi turn (4096 revolutions)					2			
	w/o brake						A		
Connection System	with brake						F		
	Straight connector							1	
Mounting	right angle turnable connector							2	
	International standard mounting								A

(1) Other possibilities to be detailed: see www.us.telemecanique.com

Connecting cables



Cable type		Power cable Equiped with 1 connector (motor side)			Encoder cable Equiped with 2 connectors
Servo motor type	BSH...	055pp / 070pp / 100pp / 1401P / 1402M / 1402P / 1403M / 1404M	1401T / 1402T / 1403P / 1404P	2051M	All type
Servo drive type	LXM05...	All type	D42M3X / D57N4	D57N4	All type
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²	4x4 mm ² + 2x1 mm ²	5x(2x2.5 mm ²) + 2x0.5 mm ²
Catalog number	L = 3 m	VW3M5101R30	VW3M5102R30	VW3M5103R30	VW3M8101R30
	L = 5 m	VW3M5101R50	VW3M5102R50	VW3M5103R50	VW3M8101R50
	L = 10 m	VW3M5101R100	VW3M5102R100	VW3M5103R100	VW3M8101R100
	L = 15 m	VW3M5101R150	VW3M5102R150	VW3M5103R150	VW3M8101R150
	L = 20 m (2)	VW3M5101R200	VW3M5102R200	VW3M5103R200	VW3M8101R200

(2) For cable lengths of > 20 m, see www.us.telemecanique.com.

Lexium 17D

Motion control
Drives for SER and BPH/BPL brushless motors



Drive type		Digital for SER and BPH/BPL brushless motors Lexium 17D				
Supply voltage		208–480 VAC 3-phase 50/60 Hz (230 VAC single phase authorized with derating)				
Output current	Continuous	1.5 A	3 A	6 A	10 A	20 A
	Maximum (discontinuous, 5 s)	3 A	6 A	10 A	20 A	40 A
Anti-start		With or without				
Braking resistor		Integrated				
EMC filter		Integrated				
Catalog number (1)		MDHA1004p00	MDHA1008p00	MDHA1017p00	MDHA1028p00	MDHA1056p00

(1) For a drive without anti-start function, replace the p at the end of the catalog number with N, or for one with integrated anti-start function, with A.



Drive type		Digital for BPH brushless motors Lexium 17D HP	
Supply voltage		208–480 VAC 3-phase	
Output current	Continuous	40 A	70 A
	Maximum (discontinuous, 5 s)	80 A	140 A
Anti-start		Integrated	
Braking resistor		Not integrated	
EMC filter		Not integrated	
Catalog number		MDHA1112A00	MDHA1198A00

Control and connectivity of Lexium 17D drives

Drive connectivity	Connectivity type	
Integrated	+/- 10 V, Pulse/direction, CANopen	Catalog number
Via an optional card (1 slot available)	High-speed SERCOS® digital ring	AM0SER001V000
	Fipio fieldbus	AM0FIP001V000
	Modbus Plus network	AM0MBP001V000
	Profibus DP fieldbus	AM0PBS001V000
	CANopen machine bus (standard medium)	AM02CA001V000
	Card with 14 I/O for controlling the integrated position indexer	AM0INE001V000



Motion control
Additional EMC input filters

Lexium 17D



Supply voltage	3-phase 208–480 VAC	
Type of Lexium 17D HP drive	MDHA1112	MDHA1198
Input rms current	42 A	75 A
Catalog number	AM0EMC118	AM0EMC212

Line reactors



Supply voltage	3-phase 208–480 VAC	
Type of Lexium 17D HP drive	MDHA1112	MDHA1198
Input current	60 A	75 A
Catalog number (1)	AM0CHK170	AM0CHK212

(1) Must be ordered with the drive, unless an isolation transformer is being used with IT connection.

External braking resistors

Resistor type	External braking for Lexium 17D/17 D HP drives				
Drive type	MDHA1004/1008		MDHA1017/1028/1056	MDHA1112	MDHA1198
Resistance	33 Ω		33 Ω	15 Ω	10 Ω
Power	250 W		500W	1500W	860 W
Catalog number (1)	Standard	AM0RFE001V025	AM0RFE001V050	AM0RFE001V150	AM0RFE002V086
	UL (Recognized)	AM0RFE003V025	AM0RFE003V050	AM0RFE003V150	AM0RFE002V160

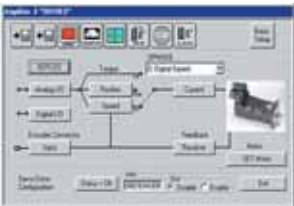
(1) In order to select the braking resistor, you need to calculate the continuous and peak power to be dissipated in it. Please consult our Lexium 17 catalog.

Motor reactor

Supply voltage	3-phase 208–480 VAC
Type of Lexium 17D drive	MDHA1004/1008/1017/1028/1056
Use	Reactor for drive-motor cable length > 25 m
Catalog number	AM0FIL001V056

Lexium 17D

Motion control Unilink software for Lexium 17D drives



Unilink software is used to configure, set parameters and make adjustments on Lexium MHDA drives according to the associated SER/BPH brushless motor and the requirements of the application. During these debugging phases,

the PC-compatible terminal, supporting the Unilink software in Windows 95/98, 2000, NT 4.0 or XP, is connected to the MHDA drives via a serial link (9-way SUB-D connector marked X6).

There are three possible configurable operating modes:

- b +/- 10 V analog control mode controlled by Premium or Quantum motion control module.
- b Off line mode with integrated position indexer controlled by:
 - 5 I/2 O integrated in the Lexium 17D drive (or by 14 I/8 O option card)
 - CANopen, Fipio, Modbus Plus or Profibus DP bus
- b SERCOS® mode, high-speed digital ring on optical fiber.

The initial screen providing access to the Unilink software services and functions is divided into three zones:

- 1 Banner at the top of the screen for accessing the main functions.
- 2 Mimic diagram for accessing configuration/parameter setting and realtime display of the various drive values.
- 3 Zone at the bottom of the screen indicating the drive status

Configuration and adjustment software	“Lexium motion tools” for PC
Drive configuration	Lexium 17D
Environment	Microsoft Windows ®
Language	English, French, German, Italian and Spanish
Catalog number	AM0CSW001V350

(1) Contents: Unilink software + documentation.

Accessories

Type of accessory	Backup key
Use	Saving and instant retrieval of drive parameters (without a PC)
Catalog number	AM0PCM001V000



Motion control

Lexium 17D

SER brushless motors for Lexium 17D



Motor type			SER brushless type			
Compatible Lexium 17 drive type			MDHA1004p00	MDHA1008p00	MDHA1017 p00	MDHA1028p00
Catalog number (1)	Torque at standstill continuous/peak	Mechanical speed				
	1.1/2.5 Nm	6000 rpm	SER39A4L7Sppppp			
	1.1/4 Nm	6000 rpm		SER39A4L7Sppppp		
	2.2/2.4 Nm	6000 rpm		SER39B4L3Sppppp		
	2.2/8 Nm	6000 rpm			SER39B4L3S ppppp	
	2.9/4.7 Nm	6000 rpm		SER39C4L3Sppppp		
	2.9/9.4 Nm	6000 rpm			SER39C4L3S ppppp	
	4.2/8.2 Nm	5500 rpm		SER3BA4L5Sppppp		
	4.5/15 Nm	5500 rpm			SER3B A4L5Sppppp	
	4.6/9.2 Nm	6000 rpm			SER3B A4L3Sppppp	
	4.6/15.3 Nm	6000 rpm				SER3BA4L3Sppppp
	6/12 Nm	6000 rpm			SER3BB4L3S ppppp	
	6.6/20 Nm	6000 rpm				SER3BB4L3Sppppp
	6.6/15.8 Nm	5800 rpm			SER3BB4L5S ppppp	
	6.6/25 Nm	5800 rpm				SER3BB4L5Sppppp
	8.3/16 Nm	2500 rpm		SER3BC4L7S ppppp		
	8.6/17 Nm	4800 rpm			SER3BC4L5S ppppp	
	10/28 Nm	4800 rpm				SER3BC4L5Sppppp
	10/32 Nm	2500 rpm			SER3BC4L7S ppppp	
	13.4/24 Nm	2750 rpm			SER3BD4L7S ppppp	
	13.4/29 Nm	5000 rpm				SER3BD4L5Dppppp
	13.4/38 Nm	2750 rpm				SER3BD4L7Sppppp

(1) Complete the catalog numbers using the table below.

To order an SER motor, complete the above catalog number											
Catalog number to be completed:			SER39/3B	A/B/C/D	4L	3/5/7	S/D	pp	p	p	
p											
Sensor integrated		Resolver with 1 pair of poles					RA				
in the motor		SinCos multi-turn absolute encoder					MO				
Shaft seal		IP41	without holding brake					A			
			with holding brake					1			
		IP56	without holding brake					B			
			with holding brake					2			
Without speed reduction gear									O		
With speed reduction gear		Shaft extension	Untapped								1
		Type	PLE80, PLE120, PLE160							(2)	
		Reduction ratio	3:1, 5:1, 8:1								(2)

(2) For an SER motor with speed reduction gear: see the "Lexium 17D motion control" catalog.

Lexium 17D

Motion control Connection cables between Lexium 17D drive and SER motor

Lexium 17			MHDA drive		Cable length			
					L = 3 m	L = 10 m	L = 20 m/30 m (3)	30 m < L < 75 m
Cable type (1)	Power	MDHA1004A00	LXACPAAAppp1					(4)
		MDHA1008A00						
		MDHA1017A00	LXACPAABppp1					
		MDHA1028A00						
Cable type (2)	Resolver	LXACFACappp1						(4)
	Sincos Hiperface encoder	LXACFABappp1						(4)

(1) Cables equipped with 1 connector (motor end) and 1 connector to be fitted (drive end).

(2) Cables equipped with connectors at both ends.

(3) For cable lengths between drive and motor > 25 m, use of a motor reactor is compulsory, placed as close to the drive as possible.

(4) For cable lengths > 30 m, please consult your Schneider Electric agency.

Connection cables between Lexium 17D drive and SER motor

Cable type		Power		Resolver	SinCos Hiperface encoder
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²	—	
Cables equipped with		1 connector at the motor end (1 connector to be fitted at the drive end)		1 connector at each end	
Catalog number	L = 3 m	LXACPAAA0031	LXACPAA0031	LXACFACA0031	LXACFABA0031
	L = 5 m	LXACPAAA0051	LXACPAA0051	LXACFACA0051	LXACFABA0051
	L = 10 m	LXACPAAA0101	LXACPAA0101	LXACFACA0101	LXACFABA0101
	L = 20 m	LXACPAAA0201	LXACPAA0201	LXACFACA0201	LXACFABA0201
	L = 30 m	—	—	LXACFACA0301	LXACFABA0301



Motion control

Lexium 17D

BPH brushless motors for Lexium 17D



Motor type			BPH brushless type						
Compatible Lexium 17 drive type		MDHA	1004A00	1008A00	1017A00	1028A00	1056A00	1112A	1198A
Catalog number (1)	Torque at standstill	Mechanical speed							
	continuous/peak	BPH							
	0.4/1.1 Nm	8000 r pm	0552S5pppp0p						
	0.9/1.7 Nm	6000 r pm	0751N5ppppAp						
	1.3/3.4 Nm	6000 r pm		0751N5ppppAp					
	1.3/2.5 Nm	6000 r pm	0752N5ppppAp						
	2.3/4.8 Nm	6000 r pm		0752N5ppppAp					
	3.7/7.2 Nm	6000 r pm		0952N5ppppAp					
	4.3/13.4 Nm	6000 r pm			0952N5ppppAp				
	6/13.4 Nm	6000 r pm			0953N5ppppAp				
	6/20.3 Nm	6000 r pm				0953N5ppppAp			
	7.4/13.6 Nm	6000 rpm			1152N5ppppAp				
	7.4/19.3 Nm	6000 r pm				1152N5pppp0p			
	6.8/13.5 Nm	6000 r pm			1153N5ppppAp				
	10.5/19.4 Nm	6000 r pm				1153N5ppppAp			
	11.4/18 Nm	4000 r pm				1442N5ppppAp			
	12/30 Nm	4000 r pm				1442N5ppppAp			
	14.5/24.2 Nm	4000 r pm				1423N5ppppAp	1423N5ppppAp		
	17/42 Nm	4000 r pm					1902N5ppppAp		
	25/37.5 Nm	4000 r pm					1903K5ppppAp		
	36/57 Nm	4000 r pm					1904K5ppppAp		
	46/76.2 Nm	4000 r pm						1907K5ppppAp	
	75/157 Nm	4000 r pm						1907K5ppppAp	
	90/163 Nm	4000 r pm						190AK5ppppAp	
	100/230 Nm	4000 r pm							0190AK5ppppAp

(1) Complete the catalog numbers using the tables below.

To order a BPH motor, complete the above catalog numbers									
Catalog number to be completed:		BPH0552S5		p		pp		p	0
Sensor integrated in the motor	Resolver with 1 pair of poles			U					p
Holding brake	Without					A2			
	With					F2			
Shaft extension	Key							C	
	Untapped							L	
Degree of protection	IP65 (casing) IP54 (shaft extension)								0

To order a BPH motor, complete the above catalog numbers									
Catalog number to be completed:		BPH0751N5-BPH190AK5		p		pp		p	A
Sensor integrated in the motor	Resolver with 1 pair of poles			M					p
	Multi-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)			A					
	Single-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)			B					
Holding brake	Without					A2			
	With					F2			
Shaft extension	Key							C	
	Untapped							L	
Degree of protection	IP65 (casing and shaft extension)								1
	IP67 (casing and shaft extension)								2

Lexium 17D

Motion control
BPL compact brushless motors for Lexium 17D



Motor type			BPL brushless type	
Compatible Lexium 17 drive type			MDHA1008A00	MDHA101700
Catalog number (1)	Torque at standstill continuous/peak	Mechanical speed		
	1.1/2.4 Nm	6000 rpm	BPL0751V5pA2pAp	
	1.7/3.5 Nm	6000 rpm	BPL0951V5pA2pAp	
	2.8/7.3 Nm	6000 rpm		BPL0753N5pA2pAp
	2/5.5 Nm	6000 rpm		BPL0951V5pA2pAp
	5.4/13.4 Nm	6000 rpm		BPL0953N5pA2pAp

(1) Complete the catalog numbers using the tables below.

To order a BPL motor, complete the above catalog numbers									
Catalog number to be completed:		BPL0751V5–953N5			p		A2		p
Sensor integrated in the motor	Resolver with 1 pair of poles		M						
	Multi-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)		A						
	Single-turn high-resolution absolute encoder, Sincos Hiperface		B						
Holding brake	Without						A2		
Shaft extension	Key							C	
	Untapped							L	
Degree of protection	IP65								1
(casing and shaft extension)	IP67								2



Motion control

Lexium 17D

Connection cables between Lexium 17D drives and BPH/BPL motor

Equipped with a connector at the motor end and a connector to be fitted at the drive end

Cable type		Power			
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²		
Drive type		MDHA1004	MDHA1004/1008/ 10017/1028	MDHA1028/1056	MDHA1112/1198 (1)
Motor type		BPH0552	BPH0751-1153 BPL0751-953	BPH1422-1904	BPH1907-190A
Catalog number	L = 5 m	AGOKIT001M005	AGOKIT018M005	AGOKIT019M005	AGOKIT020M005
	L = 10 m	—	—	—	AGOKIT020M010
	L = 15 m	AGOKIT001M015	AGOKIT018M015	AGOKIT019M015	AGOKIT020M015
	L = 25 m (2)	AGOKIT001M025	AGOKIT018M025	AGOKIT019M025	AGOKIT020M025
	L = 50 m (2)	—	AGOKIT018M050	AGOKIT019M050	AGOKIT020M050
	L = 75 m (2)	—	AGOKIT018M075	AGOKIT019M075	AGOKIT020M075

(1) Cable supplied without connector to be fitted at the drive end, connection is made to the drive via screw terminals.

(2) For cable lengths between drive (MDHA1004-1056) and motor > 25 m, use of an AM0FIL001V056 motor reactor is compulsory, placed as close to the drive as possible.

Cable type		Resolver	SinCos Hiperface encoder	
Composition		4x2.5 mm ² + 2x1 mm ²		
Drive type		MDHA1004	MDHApppp	MDHApppp
Motor type		BPH0552	BPH0751-190A BPL0751-953	BPH0751-190A BPL0751-953
Catalog number	L = 5 m	AGOKIT025M005	AGOKIT024M005	AGOKIT023M005
	L = 15 m	AGOKIT025M015	AGOKIT024M015	AGOKIT023M015
	L = 25 m (2)	AGOKIT025M025	AGOKIT024M025	AGOKIT023M025
	L = 50 m (2)	—	AGOKIT024M050	AGOKIT023M050
	L = 75 m (2)	—	AGOKIT024M075	AGOKIT023M075

(2) For cable lengths between drive (MDHA1004-1056) and motor > 25 m, use of an AM0FIL001V056 motor reactor is compulsory, placed as close to the drive as possible.

Connection cables between Lexium 17 D drives and BPH/BPL motor

Equipped with 2 connectors at the motor end and drive end

Cable type		Power		Resolver	SinCos Hiperface encoder
Drive type		MDHA1004/1008/ 10017/1028	MDHA1004/1008/ 10017/1028	MDHApppp	MDHApppp
Motor type		BPH0751-1153 BPL0751-953	BPH1422-1904K	BPH0751-190AK BPL0751-953	BPH0751-190AK BPL0751-953
Catalog number	L = 10 m	AGOFRU015M010	AGOFRU016M010	AGOFRU014M010	AGOFRU013M010

Lexium 17D

Lexium drives For SER and BPH brushless motors



Type of MHDA drive			Digital for controlling brushless motors						
			Lexium 17D				Lexium 17D HP		
Power supply	Voltage		208–480 Vac 3-phase						
	Current		1.8 A rms	3.6 A rms	7.2 A rms	12 A rms	24 A rms	48 A rms	84 A rms
Output current	Continuous		1.5 A rms	3 A rms	6 A rms	10 A rms	20 A rms	40 A rms	70 A rms
	Intermittent (5 s)		3 A rms	6 A rms	12 A rms	20 A rms	40 A rms	80 A rms	140 A rms
Anti-start			Integrated (1)					Integrated	
Braking resistor			Integrated					Not integrated	
EMC filter			Integrated					Not integrated	
Catalog number	Analog control mode		MHDA 1004A00	MHDA 1008A00	MHDA 1017A00	MHDA 1028A00	MHDA 1056A00	MHDA 1112A00	MHDA 1198A00
	Optional card for SERCOS mode (2)		AM0SER001V000						
	Communication cards (2)		Fipio bus: AM0FIP001V000, Modbus Plus network: AM0MBP001V000, Profibus DP bus: AM0PBS001V000,						
Type of associated brushless motor (3)									
Lexium SER (IP41 or IP56)		Lexium BPH (IP65 or IP67)	Continuous torque at standstill/peak torque at standstill						
	BPH0552S	8000 rpm	3.5/9.7 in-lb						
	BPH0751N	6000 rpm	8/16.8 in-lb	11.5/30.1 in-lb					
SER39A4L7S 6000 rpm			9.7/22.1 in-lb	9.7/35.4 in-lb					
SER39B4L3S 6000 rpm				19.5/38.9 in-lb	19.5/70.8 in-lb				
	BPH0752N	6000 rpm	11.5/22.1 in-lb	20.4/42.5 in-lb					
SER39C4L3S 6000 rpm				25.7/41.6 in-lb	25.7/83.2 in-lb				
	BPH0952N	6000 rpm		32.7/63.7 in-lb	38.1/119 in-lb				
SER3BA4L3S 6000 rpm					40.7/80.4 in-lb	40.7/135 in-lb			
SER3BA4L5S 6000 rpm				41/73 in-lb	41/133 in-lb				
	BPH0953N	6000 rpm			53/119 in-lb	53/180 in-lb			
SER3BB4L3S 6000 rpm					58/106 in-lb	58/177 in-lb			
SER3BB4L5S 6000 rpm					58/140 in-lb	58/221 in-lb			
	BPH1152N	6000 rpm			65/120 in-lb	65/171 in-lb			
	BPH1153N	6000 rpm			60/119 in-lb	93/168 in-lb			
SER3BC4L5S 6000 rpm					89/150 in-lb	89/248 in-lb			
SER3BC4L7S 3000 rpm				89/142 in-lb	89/283 in-lb				
	BPH1422N	4000 rpm				101/159 in-lb	106/266 in-lb		
SER3BD4L5D 6000 rpm						119/257 in-lb			
SER3BD4L7S 3000 rpm					119/212 in-lb	119/336 in-lb			
	BPH1423N	4000 rpm				128/212 in-lb	150/372 in-lb		
	BPH1902N	4000 rpm					221/332 in-lb		
	BPH1903K	4000 rpm					319/504 in-lb		
	BPH1904K	4000 rpm					407/674 in-lb		
	BPH1907K	4000 rpm						664/1390 in-lb	
	BPH190AK	4000 rpm						797/1443 in-lb	885/2036 in-lb

(1) For drives without integrated anti-start function, replace the **A** in the catalog number with **N**. Example: **MHDA1004A00** becomes **MHDA1004N00**.

(2) Exclusive use (1 slot only).

(3) Complete catalog numbers with type of integrated sensor, degree of protection: See the "Lexium motion control" Catalog #AUTCD21124207EN.

Accessories

Type of accessory	External braking resistor				
Use for drives	MDHA1004/1008		MDHA1017/1028/1056	MDHA1112	MDHA1198
Power	250 W	500 W	1500 W	860 W	1600 W
Catalog number	AM0RFE001V025	AM0RFE001V050	AM0RFE001V150	AM0RFE002V086	AM0RFE002V160
Type of accessory	Input choke (compulsory)				
Use for drives	MDHA1112		MDHA1198		
Characteristics	60 A rms continuous		75 A rms continuous		
Catalog number	AM0CHK170		AM0CHK212		

Connection accessories and cables: See our "Lexium motion control" Catalog #AUTCD21124207EN.

Twin Line™ drives For SER brushless motors

Lexium 17D



Type of drive		Digital for brushless motors Control integrated in the PLC			
Power supply	Voltage	230 Vac single phase	230–480 Vac 3-phase		
Motor	Power	0.75 kW rms	1.5 kW rms	3 kW rms	8 kW rms
Output current	Continuous	3 A rms	3 A rms	6 A rms	16 A rms
	Discontinuous (5 s)	6 A rms	6 A rms	20 A rms	32 A rms
Degree of protection		IP20			
Catalog number (1)		TLD13	22F2p p1p1	42F3p p1p1	62F3p p1p1
Type of associated brushless motor (2)	SER364/366/368/36A	12000 rpm			
	SER39A/39B/39C/39D	6000 rpm	6000 rpm		
	SER3BA/3BB/3BC/3BD	6000/4500 rpm	6000/4500 rpm	6000/4500 rpm	

(1) Complete the catalog numbers using the table below

(2) Complete catalog numbers of brushless motors: See the "Twin Line motion control" Catalog #8000CT0101R8/02.



Type of drive		Digital for brushless motors Command via discrete control, fieldbus or integrated programmable motion controller			
Power supply	Voltage	230 Vac single phase	230–480 Vac 3-phase		
Motor	Power	0.75 kW rms	1.5 kW rms	3 kW rms	8 kW rms
Output current	Continuous	3 A rms	3 A rms	6 A rms	16 A rms
	Discontinuous (5 s)	6 A rms	6 A rms	20 A rms	32 A rms
Degree of protection		IP 20	IP 20	IP 20	
Command via (1)	Discrete control	TLC43	22F21pppp	42F31pppp	62F31pppp
	Fieldbus	TLC53	22F2ppppp	42F3ppppp	62F3ppppp
Programmable motion controller (1)		TLC63	22F2ppppp	42F3ppppp	62F3ppppp
Type of associated brushless motor (2)	SER364/366/368/36A	12000 rpm			
	SER39A/39B/39C/39D	6000 rpm	6000 rpm	6000 rpm	
	SER3BA/3BB/3BC/3BD	6000/4500 rpm	6000/4500 rpm	6000/4500 rpm	

(1) Complete the catalog numbers using the table below

(2) Complete catalog numbers of brushless motors: See our "Twin Line motion control" Catalog #8000CT0101R8/02.

Complete each of the above catalog numbers		p		p		p		p		p
Slot M1	No module	1								
	RS 422C encoder module	2								
	PULSE-C module	3								
Slot M2	Sincos Hiperface		2							
Slot M3	No module (TLD13)				1					
	No encoder simulation (TLD43/53/63)				1					
	ESIM3-C encoder simulation				2					
Slot M4 communication	No module					1				
	RS 485C (TLC43/53/63), ESIM1-C module (TLD13)					2				
	INTERBUS (TLC43/53/63), ESIM2-C module (TLD13)					3				
	CANopen/DeviceNet (TLC43/53/63), SSI-C module (TLD13)					4				
	Profibus DP (TLC43/53/63)					5				
Integrated holding brake controller	None (TLD43/53/63)								1	

Connection accessories: See the "Twin Line motion control" Catalog #8000CT0101R8/02.

Lexium 15

Motion control
BDH servo motors

BDH servo motors

The BDH servo motors shown below are supplied without a gearbox. For GBX gearboxes see page 52.

Continuous stall torque	Peak stall torque	Maximum mechanical speed	Associated servo drive LXM 15	Maximum nominal speed (1)	Catalog number (2)
Nm	Nm	rpm		rpm	
0.18	0.61	8000	LD13M3	8000	BDH 0401B ●5A2●
0.31	1.08	8000	LD13M3	8000	BDH 0402C ●5A2●
0.41	1.46	8000	LD13M3	8000	BDH 0403C ●5A2●
0.84	2.34	8000	LU60N4	7680	BDH 0582C ●●●2●
0.87	2.42	8000	LD13M3	6880	BDH 0582E ●●●2●
1.08	2.62	8000	LD21M3	8000	BDH 0583F ●●●2●
1.13	3.2	8000	LU60N4	6000	BDH 0583C ●●●2●
1.15	3.34	8000	LU60N4	5360	BDH 0701C ●●●2A
1.16	3.58	8000	LD13M3	4080	BDH 0583D ●●●2●
			LD10N4	8000	
1.18	3.52	8000	LD21M3	8000	BDH 0583F ●●●2●
1.2	3.24	8000	LD13M3	5360	BDH 0701E ●●●2A
1.38	3.94	8000	LU60N4	5120	BDH 0584C ●●●2●
1.41	4.4	8000	LD13M3	3520	BDH 0584D ●●●2●
			LD10N4	8000	
1.42	3.57	8000	LD21M3	6000	BDH 0584F ●●●2●
	4.46	8000	LD21M3	6560	
1.5	3.14	6000	LD21M3	6000	BDH 0841H ●●●2●
1.95	5.12	6000	LU60N4	2820	BDH 0841C ●●●2●
2	5.74	8000	LU60N4	3440	BDH 0702C ●●●2A
2.02	5.13	6000	LD13M3	5640	BDH 0841E ●●●2●
	5.33	6000	LD10N4	2460	
2.04	6.51	8000	LD13M3	2320	BDH 0702D ●●●2A
			LD10N4	5520	
2.06	4.78	6000	LD21M3	5340	BDH 0841H ●●●2●
2.08	4.52	8000	LD21M3	4400	BDH 0703H ●●●2A
2.1	5.36	8000	LD21M3	6560	BDH 0702H ●●●2A
2.71	7.83	8000	LU60N4	2560	BDH 0703C ●●●2A
2.79	8.55	8000	LD13M3	2000	BDH 0703E ●●●2A
			LD10N4	4800	
2.88	7.35	8000	LD21M3	4960	BDH 0703H ●●●2A
2.96	6.54	6000	LD21M3	3000	BDH 0842G ●●●2●
3.35	9.37	6000	LU60N4	1680	BDH 0842C ●●●2●
3.42	9.41	6000	LD10N4	3480	BDH 0842E ●●●2●
	9.72	6000	LD13M3	1500	
3.53	8.66	6000	LD17N4	6000	BDH 0842G ●●●2●
	9.56	6000	LD21M3	2760	
3.56	7.56	6000	LD28M3	5400	BDH 0842J ●●●2●
			MD28N4	5400	
3.96	8.8	6000	LD21M3	2220	BDH 0843G ●●●2●
	9.41	6000	LD21M3	1680	BDH 1081G ●●●2●
4.7	10.71	6000	LD10N4	2880	BDH 1081E ●●●2●
	11.7	6000	LD10N4	2700	BDH 0843E ●●●2●
4.75	10.82	6000	LD21M3	2340	BDH 1081G ●●●2●
			LD17N4	5160	
4.76	10.55	6000	LD21M3	1860	BDH 0844G ●●●2●
4.8	11.68	6000	LD17N4	4980	BDH 0843G ●●●2●
	13.2	6000	LD21M3	2160	
4.9	9.02	6000	LD28M3	4920	BDH 0843K ●●●2●
			MD28N4	4920	
	9.22	6000	LD28M3	4800	BDH 1081K ●●●2●
			MD28N4	4800	
5.76	14.1	6000	LD10N4	2400	BDH 0844E ●●●2●
5.88	13.97	6000	LD17N4	4380	BDH 0844G ●●●2●
	16.1	6000	LD21M3	1860	
6	12.8	6000	LD28M3	3660	BDH 0844J ●●●2●
			MD28N4	3660	
7.16	17.31	6000	LD21M3	1140	BDH 1082G ●●●2●

(1) Derating possible according to the power supply voltage.

(2) Complete each catalog number based on the available options, see table page 49.



BDH 0401



BDH 0701



BDH 1081



BDH servo motors

BDH servo motors (continued)

1 090101



BDH 1882

Continuous stall torque	Peak stall torque	Maximum mechanical speed	Associated servo drive LXM 15	Maximum nominal speed (1)	Catalog number (2)
Nm	Nm	rpm		rpm	
8.34	18.08	6000	LD10N4	1860	BDH 1082E ●●●2●
8.43	19.51	6000	LD21M3	1320	BDH 1082G ●●●2●
			LD17N4	3000	
8.6	16.7	6000	LD17N4	4080	BDH 1082M ●●●2●
	16.9	6000	LD28M3	2820	BDH 1082K ●●●2●
			MD28N4	2820	
11.4	22.1	6000	MD40N4	3180	BDH 1083M ●●●2●
	22.2	6000	MD56N4	4740	BDH 1083P ●●●2●
	25.83	6000	LD17N4	2340	BDH 1083G ●●●2●
11.6	22.9	6000	LD28M3	2100	BDH 1083K ●●●2●
			MD28N4	2100	
11.9	25.6	6000	LD17N4	1800	BDH 1382G ●●●2●
12.2	22.7	6000	LD28M3	1860	BDH 1382K ●●●2●
			MD28N4	1860	
	22.8	6000	MD40N4	5820	BDH 1382M ●●●2●
12.3	23.2	6000	MD56N4	3840	BDH 1382P ●●●2●
14.1	25.5	6000	MD56N4	3780	BDH 1084N ●●●2●
	27.28	6000	MD40N4	4260	BDH 1084L ●●●2●
14.3	31.7	6000	LD17N4	1980	BDH 1084G ●●●2●
14.4	28.1	6000	LD28M3	1800	BDH 1084K ●●●2●
16.5	38.4	6000	LD17N4	1440	BDH 1383G ●●●2●
16.8	31	6000	LD28M3	1500	BDH 1383K ●●●2●
			MD28N4	1500	
17	31.4	6000	MD40N4	4500	BDH 1383M ●●●2●
	34.8	6000	MD56N4	5580	BDH 1383N ●●●2●
20.4	40.2	6000	MD56N4	5280	BDH 1384P ●●●2●
20.8	41.2	6000	MD28N4	2460	BDH 1384K ●●●2●
21	41.9	6000	MD40N4	3420	BDH 1384L ●●●2●
24.3	50.2	6000	MD56N4	4260	BDH 1385N ●●●2●
24.8	46.8	6000	MD28N4	2280	BDH 1385K ●●●2●
25	47.6	6000	MD40N4	3180	BDH 1385M ●●●2●
29.4	58.4	6000	MD56N4	3360	BDH 1882P ●●●2●
29.7	59.4	6000	MD28N4	1620	BDH 1882K ●●●2●
30	59.8	6000	MD40N4	2220	BDH 1882M ●●●2●
41.6	79.4	6000	MD56N4	2580	BDH 1883P ●●●2●
42	80.7	6000	MD40N4	1740	BDH 1883M ●●●2●
52.5	106	6000	MD56N4	1980	BDH 1884P ●●●2●
53	108	6000	MD40N4	1320	BDH 1884L ●●●2●

To order a BDH servo motor complete each catalog number with:

BDH 0583D				2		
Shaft end	IP 54	Untapped (3)	0			
		Keyed (5) (6)	1			
	IP 67	Untapped (3)	2			
		Keyed (5) (6)	3			
Integrated sensor	Single turn, SinCos Hiperface® 4096 points/turn (4)		1			
	Multiturn, SinCos Hiperface® 4096 points/turn, 4096 turns (4)		2			
	2-pole resolver		5			
Holding brake	None			A		
	With (4)			F		
Connection	Angled connectors that can be rotated through 90°				2	
Flange	International IEC standard (6)					A
	NEMA (5) (6) (7)					B

Note: The example above is for a BDH 0583D servo motor. Replace BDH 0583D with the relevant catalog number for other servo motors.

(1) Derating possible according to the power supply voltage.

(2) To complete each catalog number see the above table.

(3) Not available in NEMA mounting for BDH 084, BDH 108, BDH 138 and BDH 188 servo motors.

(4) Not available for BDH 040 servo motors.

(5) Not available in NEMA mounting for BDH 040 servo motors and BDH 058

(6) The type of key differs according to the type of mounting (IEC or NEMA) and the servo motor rating:

EMC mounting: BDH 040, open shaft key; other BDH servo motors, closed shaft key.

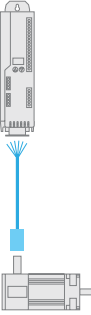
NEMA mounting: BDH 084, BDH 108, BDH 138 and BDH 188, open shaft key. Shaft key option not available for BDH 040 and BDH 058

(7) Not available for BDH 070 servo motors.

Lexium 15

Motion control
BDH servo motors

Power supply connection cables

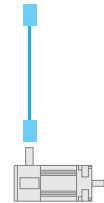
		Description	From servo motor	To servo drive	Composition	Length m	Catalog number
 VW3 M5 101 R ●●●	Cables fitted with a connector on servo motor side		BDH 040 ●●	LXM 15L●●●●●	[(4 x 1.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 101 R30
			BDH 058 ●●			5	VW3 M5 101 R50
			BDH 070 ●●			10	VW3 M5 101 R100
			BDH 084 ●●			15	VW3 M5 101 R150
			BDH 108●E			20	VW3 M5 101 R200
			BDH 108●G			25 (1)	VW3 M5 101 R250
			BDH 108●K			50 (1)	VW3 M5 101 R500
			BDH 138●G				
			BDH 138●K				
 VW3 M5 201/202/203 R ●●●	Cables fitted with two connectors		BDH 084 ●●	LXM 15MD●●N4	[(4 x 1.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 201 R30
			BDH 108●K			5	VW3 M5 201 R50
			BDH 138●K			10	VW3 M5 201 R100
			BDH 188●K			15	VW3 M5 201 R150
						20	VW3 M5 201 R200
						25 (1)	VW3 M5 201 R250
						50 (1)	VW3 M5 201 R500
						75 (1)	VW3 M5 201 R750
			BDH 108●L	LXM 15MD●●N4	[(4 x 2.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 202 R30
			BDH 108●M			5	VW3 M5 202 R50
			BDH 138●L			10	VW3 M5 202 R100
			BDH 138●M			15	VW3 M5 202 R150
			BDH 188●L			20	VW3 M5 202 R200
			BDH 188●M			25 (1)	VW3 M5 202 R250
						50 (1)	VW3 M5 202 R500
						75 (1)	VW3 M5 202 R750
			BDH 108●N	LXM 15MD●●N4	[(4 x 4 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 203 R30
			BDH 108●P			5	VW3 M5 203 R50
			BDH 138●N			10	VW3 M5 203 R100
			BDH 138●P			15	VW3 M5 203 R150
			BDH 188●P			20	VW3 M5 203 R200
						25 (1)	VW3 M5 203 R250
						50 (1)	VW3 M5 203 R500
						75 (1)	VW3 M5 203 R750

(1) For cables longer than 20m, a motor choke is compulsory.



BDH servo motors

Control connecting cables



VW3 M8 301 R●●●



VW3 M8 401 R ●●●

Description	From servo motor	To servo drive	Composition	Length m	Catalog number
SinCos Hiperface® encoder cables fitted with two connectors	BDH, all ratings	LXM 15, all ratings	5x(2 x 0.25 mm²) + (2 x 0.5 mm²)	3	VW3 M8 301 R30
				5	VW3 M8 301 R50
				10	VW3 M8 301 R100
				15	VW3 M8 301 R150
				20	VW3 M8 301 R200
				25	VW3 M8 301 R250
				50	VW3 M8 301 R500
				75	VW3 M8 301 R750
Resolver cables fitted with two connectors	BDH, all ratings	LXM 15, all ratings	5x(2 x 0.25 mm²) + (2 x 0.5 mm²)	3	VW3 M8 401 R30
				5	VW3 M8 401 R50
				10	VW3 M8 401 R100
				15	VW3 M8 401 R150
				20	VW3 M8 401 R200
				25	VW3 M8 401 R250
				50	VW3 M8 401 R500
				75	VW3 M8 401 R750

Lexium 15

Motion control
BDH servo motors
Option: GBX planetary gearboxes

Catalog number

539526



GBX

Size	Speed reduction ratio	Catalog number (1)
GBX 40	3:1, 4:1, 5:1 and 8:1	GBX 040 ●●● ●●● ●D
	9:1, 12:1, 15:1, 16:1, 20:1, 25:1, 32:1 and 40:1	GBX 040 ●●● ●●● ●D
GBX 60	3:1, 4:1, 5:1 and 8:1	GBX 060 ●●● ●●● ●D
	9:1, 12:1, 15:1, 16:1, 20:1, 25:1, 32:1 and 40:1	GBX 060 ●●● ●●● ●D
GBX 80	3:1, 4:1, 5:1 and 8:1	GBX 080 ●●● ●●● ●D
	9:1, 12:1, 15:1, 16:1, 20:1, 25:1, 32:1 and 40:1	GBX 080 ●●● ●●● ●D
GBX 120	3:1, 4:1, 5:1 and 8:1	GBX 120 ●●● ●●● ●D
	9:1, 12:1, 15:1, 16:1, 20:1, 25:1, 32:1 and 40:1	GBX 120 ●●● ●●● ●D
GBX 160	3:1, 4:1, 5:1 and 8:1	GBX 160 ●●● ●●● ●D
	9:1, 12:1, 15:1, 16:1, 20:1, 25:1, 32:1 and 40:1	GBX 160 ●●● ●●● ●D

●●●

To order a GBX planetary gearbox, complete each catalog number with:

		GBX	●●●	●●●	●●●	●	B
Size	Junction box diameter (see associations table with BDH servo motor, pages 140 and 141)	40 mm	040				
		60 mm	060				
		80 mm	080				
		115 mm	120				
		160 mm	160				
Speed reduction ratio		3:1		003			
		4:1		004			
		5:1		005			
		8:1		008			
		9:1		009			
		12:1		012			
		15:1		015			
		16:1		016			
		20:1		020			
		25:1		025			
		32:1		032			
		40:1		040			
Associated BDH servo motor	Type	BDH 040			040		
		BDH 058			058		
		BDH 070			070		
		BDH 084			084		
		BDH 108			108		
		BDH 138			138		
	Model	BDH●●● 1				1	
		BDH●●● 2				2	
		BDH●●● 3				3	
		BDH●●● 4				4	
		BDH●●● 5				5	
		BDH servo motor adaptation					



BSH servo motors

BSH servo motors

The BSH servo motors shown below are not equipped with gearboxes.



BSH 055



BSH 070



BSH 100

Continuous stall torque	Peak stall torque	Maximum mechanical speed	Associated servo drive LXM 15	Maximum nominal speed (1)	Catalog number (2)
Nm	Nm	rpm		rpm	
0.5	1.4	8000	LD13M3	3200	BSH 0551P ●●●● A
			LU60N4	3200	
			LD13M3	7040	BSH 0551T ●●●● A
0.9	2.25	8000	LU60N4	4080	BSH 0552M ●●●● A
	2.26	8000	LU60N4	3760	BSH 0552P ●●●● A
	2.54	8000	LD13M3	7120	BSH 0552T ●●●● A
	2.7	8000	LD13M3	3360	BSH 0552P ●●●● A
1.3	3.5	8000	LU60N4	4240	BSH 0553M ●●●● A
	3.87	8000	LD10N4	7280	BSH 0553P ●●●● A
	4.2	8000	LD13M3	3600	
1.4	2.91	8000	LD10N4	6000	BSH 0701T ●●●● A
	3.19	8000	LD13M3	5040	
			LD21M3	5040	
1.41	2.66	8000	LD13M3	2960	BSH 0701P ●●●● A
			LU60N4	3040	
2.12	4.47	8000	LD17N4	5920	BSH 0702T ●●●● A
	5.45	8000	LD21M3	5280	
	5.63	8000	LU60N4	2960	BSH 0702M ●●●● A
2.2	4.85	8000	LD10N4	6880	BSH 0702P ●●●● A
	5.63	8000	LD13M3	2880	
2.83	5.99	8000	LD21M3	2960	BSH 0703P ●●●● A
	7.38	8000	LD28M3	5520	BSH 0703T ●●●● A
	7.71	8000	LD17N4	6480	BSH 0703P ●●●● A
	9.28	8000	LD21M3	2560	
3.39	6.19	6000	LD10N4	2580	BSH 1001P ●●●● A
	7.08	6000	LD21M3	2400	
	8.5	6000	LD28M3	3960	BSH 1001T ●●●● A
5.5	11.59	6000	LD28M3	4080	BSH 1002T ●●●● A
5.8	12.13	6000	LD17N4	4740	BSH 1002P ●●●● A
	14.79	6000	LD21M3	1920	
7.76	15.19	6000	LD10N4	2040	BSH 1003M ●●●● A
	22.95	6000	LD17N4	2040	
7.8	19.69	6000	LD28M3	2100	BSH 1003P ●●●● A
			MD28N4	4620	
	23.17	6000	MD40N4	4320	
9.31	19.8	6000	LD10N4	1620	BSH 1004M ●●●● A
	21.04	6000	MD40N4	3480	BSH 1004T ●●●● A
	25.7	6000	MD28N4	4020	BSH 1004P ●●●● A
	29.87	6000	LD17N4	1740	BSH 1004M ●●●● A
	33.83	6000	MD40N4	3600	BSH 1004P ●●●● A
	34.17	6000	MD40N4	1620	BSH 1004M ●●●● A

(1) Derating possible according to the power supply voltage.
(2) To complete each catalog number, see the table on page 54.



Lexium 15

Motion control
BSH servo motors

BSH servo motors (continued)

105984



BSH 2051

Continuous stall torque	Peak stall torque	Maximum mechanical speed	Associated servo drive LXM 15	Maximum nominal power (1)	Catalog number (2)
Nm	Nm	rpm		rpm	
11.1	23.33	4000	MD56N4	2520	BSH 1401T ●●● A
			MD28N4	3080	BSH 1401P ●●● A
			MD40N4	3080	
	26	4000	MD28N4	1320	BSH 1401M ●●● A
19.5	39.33	4000	MD40N4	3320	BSH 1402P ●●● A
	47.5	4000	MD40N4	1480	BSH 1402M ●●● A
			MD56N4	3040	BSH 1402P ●●● A
27.8	57.32	4000	MD56N4	3240	BSH 1403P ●●● A
	71.76	4000	MD40N4	1400	BSH 1403M ●●● A
33.4	82.32	4000	MD40N4	1400	BSH 1404M ●●● A
	95	4000	MD56N4	1320	
36	68.33	3800	MD40N4	1672	BSH 2051M ●●● A
			MD56N4	1672	
			HC11N4X	1672	
	82	3800	HC11N4X	3190	BSH 2051P ●●● A
65	118.54	3800	HC11N4X	3000	BSH 2052P●●●3A (3)
	193.45	3800	HC20N4X	3000	
	200	3800	HC11N4X	1710	BSH 2052M●●●3A (3)
		3800	HC20N4X	1710	
90	202.96	3800	HC20N4X	3000	BSH 2053P●●●3A (3)
	227.18	3800	HC11N4X	1980	BSH 2053M●●●3A (3)
	300	3800	HC20N4X	1890	

To order a BSH servo motor complete each catalog number with:

BSH 0701P			●	●	●	●	A
Shaft end	IP 40	Untapped	0				
		Keyed	1				
	IP 65	Untapped	2				
		Keyed	3				
Integrated sensor	Single turn, SinCos Hiperface® 4096 points/turn			1			
	Multiturn, SinCos Hiperface® 4096 points/turn, 4096 turns			2			
Holding brake	None				A		
	With				F		
Connection (3)	Straight connectors					1	
	Rotatable right-angled connectors					2	
Flange	International standard						A

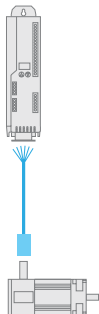
Note: The example above is for a BSH 0701P servo motor. Replace BSH 0701P by the relevant catalog number for other servo motors.

- (1) Derating possible according to the power supply voltage.
(2) To complete each catalog number see the table above.
(3) The BSH 2052 and BSH 2053 servo motors are supplied with a power connection terminal and an angled connector for the control connection (sensor).
The product catalog number is BSH 205 ●● ●●3A.

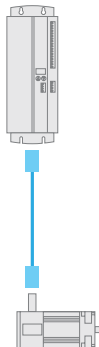


BSH servo motors

Power connection cables



VW3 M5 101/103 R ●●●



VW3 M5 201/202/203 R ●●●

Description	From servo motor	To servo drive	Composition	Length m	Catalog number
Cables fitted with a connector on servo motor side	BSH 055 ●● BSH 070 ●● BSH 100 ●●	LXM 15L●●●●●●	[(4 x 1.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 101 R30
				5	VW3 M5 101 R50
				10	VW3 M5 101 R100
				15	VW3 M5 101 R150
				20	VW3 M5 101 R200
				25 (1)	VW3 M5 101 R250
				50 (1)	VW3 M5 101 R500
	BSH 2051M BSH 2051P	LXM 15HC●●N4X	[(4 x 4 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 103 R30
				5	VW3 M5 103 R50
				10	VW3 M5 103 R100
				15	VW3 M5 103 R150
				20	VW3 M5 103 R200
				25	VW3 M5 103 R250
				50	VW3 M5 103 R500
				75	VW3 M5 103 R750
Cables fitted with two connectors	BSH 1003P BSH 1004 ● BSH 1401M BSH 1401P BSH 1402M BSH 1402P BSH 1403M BSH 1404M	LXM 15MD●●N4	[(4 x 1.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 201 R30
				5	VW3 M5 201 R50
				10	VW3 M5 201 R100
				15	VW3 M5 201 R150
				20	VW3 M5 201 R200
				25 (1)	VW3 M5 201 R250
				50 (1)	VW3 M5 201 R500
				75 (1)	VW3 M5 201 R750
	BSH 1401T BSH 1402T BSH 1403P BSH 1404P	LXM 15MD●●N4	[(4 x 2.5 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 202 R30
				5	VW3 M5 202 R50
				10	VW3 M5 202 R100
				15	VW3 M5 202 R150
				20	VW3 M5 202 R200
				25 (1)	VW3 M5 202 R250
				50 (1)	VW3 M5 202 R500
				75 (1)	VW3 M5 202 R750
	BSH 2051M	LXM 15MD●●N4	[(4 x 4 mm ²) + (2 x 1 mm ²)]	3	VW3 M5 203 R30
				5	VW3 M5 203 R50
				10	VW3 M5 203 R100
				15	VW3 M5 203 R150
				20	VW3 M5 203 R200
				25 (1)	VW3 M5 203 R250
				50 (1)	VW3 M5 203 R500
				75 (1)	VW3 M5 203 R750

(1) For cables longer than 20 m, a motor choke is compulsory.



Lexium 15

Motion control
BSH servo motors

Power connection cables (continued)

Description	From servo motor	To servo drive	Composition	Length m	Catalog number
Cable	BSH 2052M	LXM 15HC●●N4X	[(4 x 10 mm²) + (2 x 1 mm²)]	10	VW3 M5 304 R100
	BSH 2052P			25	VW3 M5 304 R250
	BSH 2053M			50	VW3 M5 304 R500
	BSH 2053P			100	VW3 M5 304 R1000



VW3 M5 304 R ●●●

Control connecting cables

Description	From servo motor	To servo drive	Composition	Length m	Catalog number
SinCos Hiperface® encoder cables fitted with two connectors	BSH, all ratings	LXM 15, all ratings	5x(2 x 0.25 mm²) + (2 x 0.5 mm²)	3	VW3 M8 301 R30
				5	VW3 M8 301 R50
				10	VW3 M8 301 R100
				15	VW3 M8 301 R150
				20	VW3 M8 301 R200
				25	VW3 M8 301 R250
				50	VW3 M8 301 R500
				75	VW3 M8 301 R750



VW3 M8 301 R ●●●

Motor control

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TeSys range provide you more *simplicity*, *compactness*, *openness* and *flexibility*

... so many evolutions and new items to aid your productivity.

TeSys For a *new* start!



*A range
of simple,
compact and
advanced
components
for power control
and protection.*

New horizons are opening up to you. Increase your productivity - adopt our solutions which help to simplify setting-up.

Motor starters

- b** Ready-to-use component combinations, designed to work together in perfect harmony.
- b** Safe operation and level of coordination guaranteed by a major manufacturer.

Power circuit control

- b** A wide range of components.
- b** Solutions for a variety of power control applications: lighting, capacitor switching, heating, changeover contactor pairs, resistive loads, upstream protection.

The essential guide

*A simplified
selection guide
enabling you to
quickly select
motor starters.*

Contents

Motor control components

TeSys contactors 5/2 to 5/9

 b Contactors , **models K, D, F**

TeSys protection components 5/10 to 5/21

 b Manual motor starters

 b Switch-disconnector-fuses

 b Thermal overload relays

 b Electronic thermal overload relays

 b Multifunction protection relays

 b Switch disconnectors **Mini Vario and Vario**

TeSys starters 5/22 to 5/25

 b Self-protected starter, **U-Line**

 b Solid state overload relay system, **U-Line**

IEC type industrial control relays 5/26 to 5/29

 b TeSys type CA2K, CA3K and CA4K

 b TeSys type CAD

NEMA type 5/30 to 5/49

 b Contactors and starters

 b Combination starters

 b Solid state overload relays Motor Logic®

 b Definite purpose contactors

 b Lighting contactors

 b Manual starters and switches

 b Accessories

 b Industrial control relays

 b Circuit breaker operating mechanisms

 b Disconnect switches

TeSys U - LU9
Control increases in power



Simply Smart benefits

Introducing the 1st **intelligent** starter capable of integrating motor control, control and changeover functions in a unit 45 mm wide! **Simple** in its modular format, it is also **open** to standard buses and can monitor your applications via the web.

Applications

 b Industry: ideal solution when the motor starter needs to be decentralized in the machine or the process



Connections

■ screw clamp terminals

Rated operational current	Ie max AC-3 (Ue - 440V)	6 A	9 A	12 A
	Ie AC-1 (θ - 40° C)	-	20 A	-
Rated operational power	220/240 V	2 Hp	3 Hp	4 Hp
in category AC3	380/400 V–415/440 V	3 Hp	5 Hp	7.5 Hp
	660/690 V–500 V	4 Hp	5 Hp	5 Hp
Contactor type(1)(2)	AC	LC1K06**	LC1K09**	LC1K12**
	DC	LP1K06** or LP4K06**	LP1K09 or LP4K09**	LP1K12 or LP4K12**
Reversing contactor type (2) with mechanical interlock	AC	LC2K06	LC2K09	LC2K12
	DC	LP2K06 or LP5K06	LP2K09 or LP5K09	LP2K12 or LP5K12

■ spring terminals

Add the figure 3 before the voltage code. Example **LC1K0610**** becomes **LC1K06103****

■ slip-on connectors, 1 x 6.35 or 2 x 2.8

Add the figure 7 before the voltage code. Example **LC1K0610**** becomes **LC1K06107****

■ solder pins for printed circuit boards

Add the figure 5 before the voltage code. Example **LC1K0610**** becomes **LC1K06105****

(1) Basic catalog number, to be completed by adding 01 for N.C. auxiliary contact, or 10 for N.O. auxiliary contact.

(2) Basic catalog number to be completed by adding the coil voltage. Example (including auxiliary contact) LC1RO601G7.

Standard control circuit voltages

AC supply

Contactors LC1K (0.8–1.15 Uc) (0.85–1.1UC)

Volts	12	20	24	36	42	48	110	115	120	127	200/208	220/230	230	230/240
50/60 Hz	J7	Z7	B7	C7	D7	E7	F7	FE7	G7	FC7	L7	M7	P7	U7
Volts	256	277	380/400	400	400/415	440	480	500	575	600	660/690			
50/60 Hz	W7	UE7	Q7	V7	N7	R7	T7	S7	SC7	X7	Y7			

Example of complete catalog number **LC1K0910P7**.

DC supply

Contactors LP1K (0.8–1.15 Uc)

Volts	12	20	24	36	48	60	72	100	110	125	155	174	200	220	230	240	250
Code	JD	ZD	BD	CD	ED	ND	SD	KD	FD	GD	PD	QD	LD	MD	MPD	MUD	UD

Coil with integral suppression device available, add 3 to the code required. Example **JD3**

Low consumption

Contactors LP4K (0.7–1.30 Uc), coil suppression as standard

Volts	12	20	24	48	72	110	120
Code	JW3	ZW3	BW3	EW3	SW3	FW3	GW3

Example of complete catalog number **LC1K0910BD**.





Auxiliary contact blocks

■ instantaneous, screw clamp connections

	■ for LC1, LP1K, LP4			■ for LC1, LP1K				
Composition	2 N.O.	- 2 N.C.	1 N.O. 1 N.C.	4 N.O.	3 N.O. 1 N.C.	2 N.C. 2 N.C.	1 N.O. 3 N.C.	- 4 N.C.
Catalog number	LA1KN20	LA1KN02	LA1KN11	LA1KN40	LA1KN31	LA1KN22	LA1KN13	LA1KN04

■ electronic time delay

Relay outputs, with common point changeover contact, AC or DC 24–48, 2 A maximum

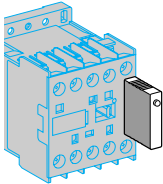
Control voltage 0.85–1.1Uc

Maximum switching capacity 250 VA or 150 W

Operating temperature -10 to + 60°C

Reset time: 1.5 s for 0.5 s after the time delay period

Type	On-delay							
Timing range	1–30 s							
Composition	1							
Voltage	AC or DC 24–48 V				AC 110–240			
Reference	LA2KT2E				LA2KT2U			



Suppressor modules

For LC1, LP1K

Type	Varistor (AC and DC)				Diode (DC) + zener		RC (AC)
Voltage	12–24 V	32–48 V	50–129 V	130–250 V	12–24 V	32–48 V	110–250 V
Catalog number	LA4KE1B	LA4KE1E	LA4KE1FC	LA4KE1UG	LA4KC1B	LA4KC1E	LA4KA1U



Connections

■ screw clamp terminals or connectors

Rated operational voltage		690 V				
Rated operational current	Ie max AC-3 (Ue - 440V)	9 A	12 A	18 A	25 A	32 A
	Ie AC-1 (θ - 60° C)	25 A		32 A	40 A	50 A
Rated operational power in category AC3	220/240 V	3 Hp	4 Hp	5 Hp	7.5 Hp	10 Hp
	380/400 V	5 Hp	7.5 Hp	10 Hp	15 Hp	20 Hp
	415/440 V	5 Hp	7.5 Hp	12 Hp	15 Hp	20 Hp
	500 V	7.5 Hp	10 Hp	13 Hp	20 Hp	25 Hp
	660/690 V	7.5 Hp	10 Hp	13 Hp	20 Hp	25 Hp
	1000 V	-	-	-	-	-
Contactor type(1)		LC1D09	LC1D12	LC1D18	LC1D25	LC1D32
Reversing contactor type * with mechanical interlock		LC2D09	LC2D12	LC2D18	LC2D25	LC2D32

■ spring terminals (1)

Add the figure 3 before the voltage code. Example **LC1D09P7** becomes **LC1093P7**

■ ring tongue terminals (2)

Add the figure 6 before the voltage code. Example **LC1D09P7** becomes **LC1096P7**

■ slip-on connectors (3) 2 x 6.35 (power) and 1 x 6.35 (control) up to D12 only

Add the figure 9 before the voltage code. Example **LC1D09P7** becomes **LC1099P7**

(1) Basic catalog number to be completed by adding the coil voltage. Example: **LC1D09P7**.



(1) LC1D093P7



(2) LC1D096P7



(3) LC1D099P7

Standard control circuit voltages

AC supply

Volts	24	42	48	110	115	220	230	240	380	400	415	440	500
Contactors LC1D09–D50 (coils D115 and D150 with integral suppression device fitted as standard)													
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7	-
Contactors LC1D40–D115													
50 Hz	B5	D5	E5	F5	FE5	M5	P5	U5	Q5	V5	N5	R5	S5
60 Hz	B6	-	E6	F6	-	M6	-	U6	Q6	-	-	R6	-

DC supply

Volts	12	24	36	48	60	72	110	125	220	250	440
Contactors LC1D09–D38 (coils with integral suppression device fitted as standard)											
U 0.7–1.25 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
Contactors LC1D40–D95											
U 0.85–1.1 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
U 0.75–1.2 Uc	JW	BW	OW	EW	-	SW	FW	-	MW	-	-
Contactors LC1D115 and D150 (coils with integral suppression device fitted as standard)											
U 0.75–1.2 Uc	-	BD	-	ED	ND	SD	FD	GD	MD	UD	RD

Low consumption

Contactors LC1D09–D38 (coils with integral suppression device fitted as standard)											
Volts DC	5	12	20	24	48	110	120	250			
U 0.7–1.25 Uc	AL	JL	ZL	BL	EL	FL	ML	UL			

Example of complete catalog number **LC1D09P7**.

For enclosed version of d-Line starters up to 80A, reference catalog 8502CT9901.

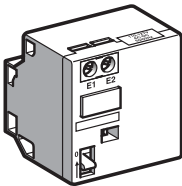




1000 V on AC supply, 690 V on DC supply							
38 A	40 A	50 A	65 A	80 A	95 A	115 A	150 A
	60 A	80 A		125 A		200 A	
12 Hp	15 Hp	20 Hp	25 Hp	30 Hp	30 Hp	40 Hp	50 Hp
25 Hp	25 Hp	30 Hp	40 Hp	50 Hp	60 Hp	75 Hp	100Hp
25 Hp	30 Hp	30/40 Hp	50 Hp	60 Hp	60 Hp	75 Hp	100 Hp
25 Hp	30 Hp	40 Hp	50 Hp	75 Hp	75 Hp	100 Hp	125Hp
25 Hp	40 Hp	44 Hp	50 Hp	60 Hp	60 Hp	100 Hp	125Hp
-	30 Hp	40 Hp	50 Hp	60 Hp	60 Hp	100 Hp	125 Hp
LC1D38	LC1D40	LC1D50	LC1D65	LC1D80	LC1D95	LC1D115	LC1D150
LC2D38	LC2D40	LC2D50	LC2D65	LC2D80	LC2D95	LC2D115	LC2D150

Mounting accessories for 3-pole reversing contactors

2 identical contactors with screw clamp terminals or connectors, horizontally mounted		
Mechanical interlock	Set of connections	Mechanical interlock
■ with an electrical interlocking kit for the contactors		
LC1D09–D38	LAD9R1V	included
■ with integral electrical interlocking		
LC1D40–D65	LA9D6569	LA9D4002
LC1D80 and D95 (AC)	LA9D8069	LA9D4002
LC1D80 and D95 (DC)	LA9D8069	LA9D8002
LC1D115 and D150	LA9D11569	LA9D11502
■ without electrical interlocking		
LC1D09–D38	LA99R1	included
LC1D40–D65	LA9D6569	LA9D50978
LC1D80 and D95 (AC)	LA9D8069	LA9D50978
LC1D80 and D95 (DC)	LA9D8069	LA9D80978



Mechanical latch blocks

Clip-on front mounting, manual or electrical unlatching control		
For use on contactor	Catalog number	Standard control circuit voltages
LC1D40–D65 3P AC or DC, LC1D65 4P AC, LC1D65 4P DC	LA6DK10•	B E F M Q
LC1D80–D150 3P AC, LC1D80 and D115 3P AC, LC1D115 4P DC	LA6DK20•	B E F M Q
LC1D09–D38 AC or DC, LC1DT20–DT40 AC or DC	LA66K10•	B E F M Q



Auxiliary contact blocks

■ instantaneous, for connection by screw clamp terminals

■ time delay

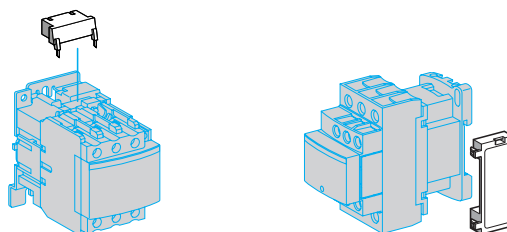
■ front mounting				■ side mounting				■ front mounting		
Composition	Catalog number	Composition	Catalog number	Composition	Catalog number	Composition	Catalog number	Type	Range	Catalog number
N.O. N.C.		N.O. N.C.		N.O. N.C.		N.O. N.C.				
1 -	LADN10	1 1	LADN11	2 2	LADN22	1 1	LAD8N11	On-delay	0.1–3 s	LADT0
- 1	LADN01	2 -	LADN20	1 3	LADN13	2 -	LAD8N20		0.1–30 s	LADT2
		- 2	LADN02	4 -	LADN40	- 2	LAD8N02		10–180 s	LADT4
				- 4	LADN04			Off-delay	0.1–3 s	LADR0
				3 1	LADN31				0.1–30 s	LADR2
									10–180 s	LADR4

5

Maximum number of auxiliary contacts that can be fitted

Contactors

Type	Instantaneous auxiliary contact blocks					Time delay
	Number of poles and size	Side mounting	Front mounting			Front mounting
			1 contact	2 contacts	4 contacts	
AC	3PLC1D09–D38	1 on LH side and	-	1	or 1	or 1
	LC1D40–D95 (50/60 Hz)	1 on each side or	2	and 1	or 1	or 1
	LC1D40–D95 (50 or 60 Hz)	1 on each side and	2	and 1	or 1	or 1
	LC1D115 and D150	1 on LH side	-	and 1	or 1	or 1
	4PLC1DT20–DT40	1 on LH side	-	1	or 1	or 1
	LC1D65 and D80	1 on each side or	1	or 1	or 1	or 1
	LC1D115	1 on each side and	1	or 1	or 1	or 1
DC	3PLC1D09–D38	-	-	1	or 1	or 1
	LC1D40–D95	-	1	or 1	or 1	or 1
	LC1D115 and D150	1 on LH side and	-	1	or 1	or 1
	4PLC1DT20–DT40	-	-	1	or 1	or 1
	LP1D65 and D80	-	2	and 1	or 1	or 1
	LC1D115	1 on each side	-	and 1	or 1	or 1
Low Consumption	3PLC1D09–D38	-	-	1	-	-
	4PLC1DT20–DT40	-	-	1		



Suppressor modules

Varistors (peak limiting)

Protection provided by limiting the transient voltage to 2 Uc max.

Maximum reduction of transient voltage peaks.

Slight increase in drop-out time (1.1 to 1.5 times the normal time)

Mounting	For use with contactor Rating	Type VAC	VDC	Catalog number
Clip-on	D09–D38 (3P)	12–24 V	-	LAD4VE
	DT20–DT40 (4P)	50–127 V	-	LAD4VG
		110–240 V	-	LAD4VU
Screw clamp	D40–D115 (3P)	24–48 V	-	LA4DE2E
	and	50–127 V	-	LA4DE2G
	D65–D115 (4P)	110–250 V	-	LA4DE2U
	D40–D115 (3P)	-	24–48 V	LA4DE3E
	and	-	50–127 V	LA4DE3G
	D65–D115 (4P)	-	110–250 V	LA4DE3U

Diodes

No overvoltage or oscillating frequency.

Increase in drop-out time (6 to 10 times the normal time).

Polarised component.

Screw clamp	D40–D95 (3P)	-	24–250 V	LA4DC3U
	D65 and D80 (4P)	-		

Bidirectional peak limiting diode

Protection provided by limiting the transient voltage to 2 Uc max.

Maximum reduction of transient voltage peaks.

Clip-on	D09–D38 (3P)	24 V	-	LAD4TB
	DT20–DT40 (4P)	72 V	-	LAD4TS
Screw clamp	D40–D95 (3P)	24 V	-	LA4DB2B
	D65 and D80 (4P)	72 V	-	LA4DB2S
	D40–D95 (3P)	-	24 V	LA4DB3B
	D65 and D80 (4P)	-	72 V	LA4DB3S

RC circuits (Resistor-Capacitor)

Effective protection for circuits highly sensitive to "high frequency" interference.

For use only in cases where the voltage is virtually sinusoidal, i.e. less than - 5% total harmonic distortion.

Voltage limited to 3 Uc max and oscillating frequency limited to 400 Hz max.

Slight increase in drop-out time (1.2 to 2 times the normal time)

Clip-on	D09–D38 (3P)	12–24 V	-	LAD4RCE
	DT20–DT40 (4P)	110–240 V	-	LAD4RCU
Screw fixing	D40–D150 (3P)	24–48 V	-	LA4DA2E
	and	50–127 V	-	LA4DA2G
	D65–D115 (4P)	110–240 V	-	LA4DA2U
		380–415 V	-	LA4DA2N



5

Rated operational current	Ie max AC-3 (Ue - 440V)	185 A	225 A	265 A	330 A
	Ie AC-1 (θ - 40° C)	275 A	315 V	350 A	400 A
Rated operational voltage		1 000 V	1 000 V	1 000 V	1 000 V
Number of poles		3 or 4	3 or 4	3 or 4	3 or 4
Rated operational power	220/240 V	75 Hp	75 Hp	100 Hp	125 Hp
in category AC3	380/400 V	125 Hp	150 Hp	200 Hp	250 Hp
	415 V	125 Hp	150 Hp	175 Hp	220 Hp
	440 V	125 Hp	150 Hp	175 Hp	300 Hp
	500 V	150 Hp	175 Hp	250 Hp	300 Hp
	660/690 V	150 Hp	175 Hp	250 Hp	350 Hp
	1000 V	125 Hp	125 Hp	200 Hp	250 Hp
Contactor type(1)		LC1F185	LC1F225	LC1F265	LC1F330
Reversing contactor type (1)		LC2F185	LC2F225	LC2F265	

(1) Basic catalog number to be completed by adding the coil voltage code. Example: **LC1F18567**.

Standard control circuit voltages													
AC supply													
Volts	24	48	110	115	120	208	220	230	240	380	400	415	440
Contactors LC1F115–F225(0.85–1.1UC)													
50 Hz (coil LX1)	B5	E5	F5	FE5	-	-	M5	P5	U5	Q5	V5	N5	-
60 Hz (coil LX1)	-	E6	F6	-	G6	L6	M6	-	U6	Q6	-	-	R6 U7
40–400 Hz (coil LX9)	-	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1F265–F330 U7													
40–400 Hz (coil LX1)	B7	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1F400–F630 U7													
40–400 Hz (coil LX1)	-	E7	F7	FE7	G7 (1)	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1F780 U7													
40–400 Hz (coil LX1)	-	-	F7	FE7	F7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1F800 U7													
40–400 Hz (coil LX1)	-	-	FE7	FE7	FE7	-	P7	P7	P7	V7	V7	V7	V7 Y7
DC supply													
Volts	24	48	110	125	220	230	250	400	440				
Contactors LC1F115–F330(0.85–1.1UC)													
(coil LX4F)	BD	ED	FD	GD	MD	MD	UD	-	RD				
Contactors LC1F400–F630(0.85–1.1UC)													
(coil LX4F)	-	ED	FD	GD	MD	-	UD	-	RD				
Contactor LC1F780(0.85–1.1UC)													
(coil LX4F)	-	-	FD	GD	MD	-	UD	-	RD				
Contactor LC1F800(0.85–1.1UC)													
(coil LX4F)	-	-	FW	FW	MW	MW	-	QW	-				
Example: For a 630 A contactor with a 110 VAC coil, order LC1F630F7 .													

Example: For a 630 A contactor with a 110 VAC coil, order **LC1F630F7**.

(1) F7 for LC1F630.





	400 A	500 A	630 A	780 A	800 A
	500 A	700 A	1 000 A	1 600 A	1 000 A
	1 000 V	1 000 V	1 000 V	1 000 V	1 000 V
	2, 3 or 4	2, 3 or 4	2, 3 or 4	3 or 4	3
	150 Hp	200 Hp	300 Hp	350 Hp	400 Hp
	300 Hp	400 Hp	450 Hp	600 Hp	600 Hp
	350 Hp	450 Hp	500 Hp	500 Hp	600 Hp
	400 Hp	400 Hp	600 Hp	500 Hp	600 Hp
	300 Hp	475 Hp	600 Hp	600 Hp	600 Hp
	450 Hp	450 Hp	600 Hp	600 Hp	600 Hp
	250 Hp	450 Hp	600 Hp	600 Hp	600 Hp
	LC1F400	LC1F500	LC1F630	LC1F780	LC1F800
For customer assembly					

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Auxiliary contact blocks

■ instantaneous

Composition	Catalog number	Composition	Catalog number	Composition	Catalog number
N.O. N.C.		N.O. N.C.		N.O. N.C.	
1 -	LADN10	1 1	LADN11	2 2	LADN22
- 1	LADN01	2 -	LADN20	1 3	LADN13
		- 2	LADN02	4 -	LADN40
				- 4	LADN04
				3 1	LADN31
				2 2	LADC22

dust & damp protected contacts

Composition	Catalog number
N.O. N.C.	
2 - - -	LA1DX20
2 2 - -	LA1DY20
2 - 2 -	LA1DZ40
2 - 1 1	LA1DZ31

■ time delay 1N.O. + 1 N.C.

Type	Range	Catalog number
On-delay	0.1–3 s	LADT0
	0.1–30 s	LADT2
	10–180 s	LADT4
	1–30 s	LADS2
Off-delay	0.1–3 s	LADR0
	0.1–30 s	LADR2
	10–180 s	LADR4

Mounting accessories for 3-pole reversing contactors for motor control

2 identical contactors, horizontally mounted

Mechanical interlock with an electrical interlocking kit for the contactors

Contacteur type	Set of connections	Mechanical interlock
LC1F115	LA9FF976	LA9FF970
LC1F150	LA9F15076	LA9FF970
LC1F185	LA9FG976	LA9FG970
LC1F225	LA9F22576	LA9FG970
LC1F265	LA9FH976	LA9FJ970
LC1F330	LA9FJ976	LA9FJ970
LC1F400	LA9FJ976	LA9FJ970
LC1F500	LA9FK976	LA9FJ970
LC1F630 or LC1F800	LA9FL976	LA9FL970

TeSys
Type GVZME
and GV2P

Manual motor starters
0.1–30 Hp



Manual motor starters GV2ME and GV2P for connection by screw clamp terminals

GV2ME with pushbutton control, GV2P control by rotary knob

Horsepower ratings of 3-phase motors 50/60 Hz

200 V	230 V	460 V	575 V	Setting range	Magnetic	Catalog Number	
				of thermal	tripping	Push button	Rotary Handle
				trips	current		
				A	A		
-	-	-	-	0.1–0.16	1.5	GV2ME01	GV2P01
-	-	-	-	0.16–0.25	2.4	GV2ME02	GV2P02
-	-	-	-	0.25–0.40	5	GV2ME03	GV2P03
-	-	-	-	0.40–0.63	8	GV2ME04	GV2P04
-	-	0.5	0.5	0.63–1	13	GV2ME05	GV2P05
-	-	0.75	1	1–1.6	22.5	GV2ME06	GV2P06
0.5	0.5	1	1.5	1.6–2.5	33.5	GV2ME07	GV2P07
0.75	1	2	3	2.5–4	51	GV2ME08	GV2P08
1.5	1.5	3	5	4–6.3	78	GV2ME10	GV2P10
2	3	5	7.5	6–10	138	GV2ME14	GV2P14
3	3	10	10	9–14	170	GV2ME16	GV2P16
5	5	10	15	13–18	223	GV2ME20	GV2P20
5	7.5	15	20	17–23	327	GV2ME21	GV2P21
5	7.5	15	20	20–25	327	GV2ME22	GV2P22
10	10	20	30	24–32	416	GV2ME32	GV2P32

Thermal-magnetic circuit-breakers GV2ME for connection by spring terminals

Add the number **3** to the end of the catalog number. Example **GV2ME223** (available up to **GV2ME22**)

Thermal-magnetic circuit-breakers GV2ME for connection by spring terminals

Add the figure **3** to the end of the catalog number. Example **GV2ME223** (available up to **GV2ME22**)



Fuse holder—30 A rated, type CC or KTK-R fuses

	Catalog Number
With screw terminals	LS1D30
With spring terminals	LS1D303
Auxiliary pole (screw terminals; mount on left or right side)	LA8D324



TeSys

Type GVZME and GV2P



Accessories				
Combination block				
For mounting on		LC1K or LP1K	LC1D09–D38	LAD31 and LC1D09–D38
		GV2AF01	GV2AF3	GV2AF4
Sets of 3-pole busbars				
63 A	Pitch	45 mm	54 mm	72 mm
Number of tap-offs	2	GV2G245	GV2G254	GV2G272
	3	GV2G345	GV2G354	
	4	GV2G445	GV2G454	GV2G472
	5		GV2G554	
Protective end cover				
For unused busbar outlets	GV1G10			
Terminal blocks				
For supply to one or more GV2G busbar sets		connection from the top	can be fitted with current limiter GV1L3 (GV2ME and GV2P)	
		GV1G09	GV1G05	
Padlockable external operator for GV2P (150 to 290 mm)				
Padlocking		In “On” and “Off” position	In “Off” position	
Handle		black	red	
Legend plate		blue	yellow	
IP 54		GV2AP01	GV2AP02	
Padlocking device				
For all GV2 devices		For use with up to 6 padlocks (padlocks not supplied) Ø 6 mm shank max		
		GV2V03		

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Add-on blocks						
Contact blocks						
Contact types		N.O. or N.C.	N.O. + N.C.	N.O. + N.O.	(fault) + N.C.	N.C. + N.O.
Instantaneous auxiliary contacts						C.O. common point
Mounting	front	GVAE1	GVAE11	GVAE20		
	LH side		GVAN11	GVAN20		
Fault signalling contact + instantaneous auxiliary contact						
LH side				GVAD1010	GVAD1001	GVAD0110
					GVAD0101	
Short-circuit signalling contact						
LH side						GVAM11
Electric trips						
Undervoltage or shunt trips (1)						
Side mounting (1 block on RH side of circuit-breaker)		50 Hz		60 Hz		
Voltage (AC)	24 V	GVA•025		GVA•026		
	48 V	GVA•055		GVA•056		
	100 V	GVA•107				
	100–110 V			GVA•107		
	110–115 V	GVA•115		GVA•116		
	120–127 V	GVA•125				
	127 V			GVA•115		
	200 V	GVA•207				
	200–220 V			GVA•207		
	220–240 V	GVA•225		GVA•226		
	380–400 V	GVA•385		GVA•386		
	415–440 V	GVA•415				
	415 V			GVA•416		

(1) Undervoltage trips: replace the • with U, shunt trips: replace the • with S

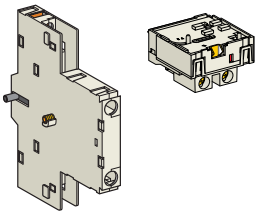


Manual motor starters GV3ME for connection by screw clamp terminals

Pushbutton control

Horsepower ratings of 3-phase motors 50/60 Hz				Setting range of thermal trips	Catalog Number
200 V	230 V	460 V	575 V	A	
-	-	0.75	1	1–1.6	GV3ME06
0.5	0.5	1	1.5	1.6–2.5	GV3ME07
0.75	1	2	3	2.5–4	GV3ME08
1.5	1.5	3	-	4–6	GV3ME10
2	3	5	7.5	6–10	GV3ME14
3	5	10	10	10–16	GV3ME20
5	7.5	15	20	16–25	GV3ME25
10	10	30	30	25–40	GV3ME40
20	20	40	60	40–63	GV3ME63
20	25	50	60	56–80	GV3ME80

5



Add-on blocks

Contact blocks

Instantaneous auxiliary contacts (1 per breaker)

Normal early break type contacts	N.C. + N.O.	N.O. + N.O.	N.C.+N.O.+N.O.	N.O.+N.O.+N.O.	N.O. + N.O. (1)	N.C. + N.O. (1)
	GV3A01	GV3A02	GV3A03	GV3A05	GV3A06	GV3A07

Fault signalling contact

Normal early break type contacts	N.C.	N.O.
	GV3A08	GV3A09

Electric trips

Voltage	50 Hz	110, 120, 127 V	220, 240 V	380, 415 V
	60 Hz	120, 127 V	277 V	440, 480 V
Undervoltage trip		GV3B11	GV3B22	GV3B38
Shunt trip		GV3D11	GV3D22	GV3D38

Padlocking device

Start button (for bare device)	GV1V02

(1) + 2 volt free terminals



Manual motor starters

1–120 Hp

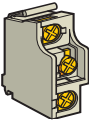
TeSys
Type GV7R



Manual motor starters GV7R for connection by screw clamp terminals

Control by rocker lever

Horsepower ratings of 3-phase motors 50/60 Hz			Setting range of thermal trips	Catalog Number
230 V	460V	575 V	A	
5	10	15	12–20	GV7RE20
5	10	15	12–20	GV7RS20
7.5	15	20	15–25	GV7RE25
7.5	15	20	15–25	GV7RS25
10	30	30	25–40	GV7RE40
10	30	30	25–40	GV7RS40
15	30	40	30–50	GV7RE50
30	60	75	48–80	GV7RE80
30	60	75	48–80	GV7RS80
30	75	100	60–100	GV7RE100
30	75	100	60–100	GV7RS100
50	100	150	90–150	GV7RE150
50	100	150	90–150	GV7RS150
75	150	200	132–220	GV7RE220
75	150	200	132–220	GV7RS220



Add-on blocks

Contact blocks

Auxiliary contacts	Contact type	C.O.
		GV7AE11
Thermal or magnetic fault discrimination	24–48 VAC/DC or 24–72 VDC	110–240 VAC/DC
	GV7AD111	GV7AD112

Electric trips

Voltage	50/60 Hz	48 V	110–130 V	200–240 V	380–440 V	525 V
	50 Hz					
Undervoltage trip (1)		GV7AU055	GV7AU107	GV7AU207	GV7AU387	GV7AU525
Shunt trip (1)		GV7AS055	GV7AS107	GV7AS207	GV7AS387	GV7AS525

(1) For mounting of a GV7AD or a GV7AU or AS

Accessories

Terminal shields IP 405

Supplied with the sealing accessory	GV7AC01

Phase barriers

used when fitting of shields is impossible	GV7AC04

Insulating screens

Ensure insulation between the connections and the backplate	GV7AC05

Kit for combination with contactor

Allowing link between the circuit-breaker and the contactor	LC1F115 to F185	LC1F225 and F26	LC1D115 and D150
	GV7AC06	GV7AC07	GV7AC08

Rotary handles

Handle		black	red
Legend plate		black	yellow
■ direct	IP 40	GV7AP03	GV7AP04
■ extended	IP 55	GV7AP01	GV7AP02

Conversion accessory

for mounting on enclosure door	IP 43	GV7AP05

Locking device

For starter not fitted with a rotary handle	GV7V01





GS1 fusible disconnect switch 30–800 A

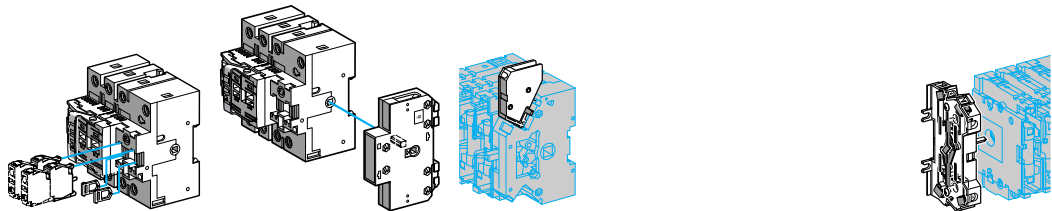
Catalog number	GS1DDU3	GS1DU3	GS1EERU20	GS1EERU30	GS1EEU3
Switch Type	Compact fused	Compact fused	Fused	Fused	Fused
Fuses	CC	J	CC	CC	CC
Amps	30	30	30	30	30
Poles	3	3	2	3	3
Operator Style	Thru-the-door	Thru-the-door	Side handle	Side handle	Thru-the-door
Max. HP 3 Phase:					
kW/hp at 240V	5.5/7.5	5.5/7.5	n/a	5.5/7.5	5.5/7.5
kW/hp at 480V	11/15	11/15	n/a	11/15	11/15
kW/hp at 600V	15/20	15/20	n/a	15/20	15/20

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LK3 non-fused disconnect switch 30–1200 A

Catalog number	LK3GU3	LK3GU3	LK3JU3	LK3MU3 (1)	LK3QU3 (1)
Switch Type	Compact Non-fused	Non-fused	Non-fused	Non-fused	Non-fused
Amps	30	60	100	200	400
Poles	3	3	3	3	3
Operator Style	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
Max. HP 3 Phase:					
kW/hp at 240V	5.5.7.5	11/15	22/30	45/60	90/125
kW/hp at 480V	11/15	22/30	45/60	90/125	185/250
kW/hp at 600V	15/20	37/50	55/75	110/150	250/350

(1) Ter minal lugs must be ordered separately.



Auxiliary early break and/or signalling contacts

Switch rating	30–200 A	50–400 A	600–800A	50–400 V
Contact type	1 N.O. 1 N.C.	1 C.O. 2 C.O.	1 C.O. 2 C.O.	1N.C.+1N.O. 2N.C.+2N/O
Standard contacts	GS1AM110 GS1AM101	GS1AM1 GS1AM2	GS1AMU3 GS1AMU4	GS1AN11 GS1AN22





	GS1EU3	GS1GU3	GS1JU3 (1)	GS1MU3 (1)	GS1QU3 (1)	GS1SU3 (1)	GS1TU3(1)
	Fused	Fused	Fused	Fused	Fused	Fused	Fused
	J	J	J	J	J	J	L
	30	60	100	200	400	600	800
	3	3	3	3	3	3	3
	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
	5.5/7.5	11/15	22/30	45/60	90/125	185/250	185/250
	11/15	22/30	45/60	90/125	185/250	370/500	370/500
	15/20	37/50	55/75	110/150	250/350	370/500	370/500

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	LK3SU3 (1)	LK3TU3 (1)	LK3UU3 (1)	LK3WU3
	Non-fused	Non-fused	Non-fused	Non-fused
	600	800	1000	1200
	3	3	3	3
	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
	150/200	185/250	185/250	185/250
	300/400	370/500	370/500	370/500
	250/350	370/500	370/500	370/500

(1) Terminal lugs must be ordered separately.



Thermal overload relays, model k
adjustable from 0.11 to 12 A

Connection by screw clamp terminals, direct mounting on contactors LC1K, manual or automatic reset

Relay setting range	Fuses to be used with selected relay (international applications only) (5)			Catalog number
Class 10 A	aM	gG	BS88	
0.11–0.16 A	0.25 A	0.5 A	-	LR2K0301
0.16–0.23 A	0.25 A	0.5 A	-	LR2K0302
0.23–0.36 A	0.5 A	1 A	-	LR2K0303
0.36–0.54 A	1 A	1.6 A	-	LR2K0304
0.54–0.8 A	1 A	2 A	-	LR2K0305
0.8–1.2 A	2 A	4 A	6 A	LR2K0306
1.2–1.8 A	2 A	6 A	6 A	LR2K0307
1.8–2.6 A	2 A	6 A	10 A	LR2K0308
2.6–3.7 A	4 A	10 A	16 A	LR2K0310
3.7–5.5 A	6 A	16 A	16 A	LR2K0312
5.5–8 A	8 A	20 A	20 A	LR2K0314
8–11.5 A	10 A	25 A	20 A	LR2K0316

Thermal overload relays for use on class 10 A unbalanced loads: for above catalog numbers **LR2K0305** to **LR2K0316** only, replace the prefix LR2 with LR7.

Example **LR7K0310**.

Accessories

Prewiring kit

Allowing direct connection of the N.C. contact	For use on	
of relay LRD01–35 or LR3D01–D35 to the contactor	LC1D09–D18	LAD7C1
	LC1D25–D38	LAD7C2

Terminal blocks (1)

For clip-on mounting on 35 mm mounting rail (AM1-DP200)	LRD01–35 and LR3D01–D35	LAD7B10
or screw fixing	LRD3***, LR3D3***, LRD35**	LA7D3064 (2)
For independent mounting of the relay	LR2K****	LA7K0064

Terminal block adapter

For mounting a relay beneath an LC1D115 or D150 contactor	LRD3***, LR3D3***, LRD35**	LA7D3058

Stop or electrical reset

Remote(3)	LRD01–35 and LR3D01–D35	LAD703• (4)

Tripping or electrical reset device

Remote(3)	All relays except LRD01–35 and LR3D01–D35	LA7D03• (4)

- (1) Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open "ready-to-tighten" position.
- (2) To order a terminal block for connection by lug-clamps, the catalog number becomes LA7D30646.
- (3) The time for which the coil of remote tripping or electrical resetting device LA76D03 or LAD703 can remain energized depends on its rest time: 1 s pulse duration with 9 s rest time; maximum pulse duration of 20 s with a rest time of 300 s. Minimum pulse time 200 ms.
- (4) Catalog number to be completed by adding the code indicating the control circuit voltage.
- (5) Short circuit protection for U.S. applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.

Standard control circuit voltages

AC supply

Volts	12	24	48	96	110	220/230	380/400	415/440
50/60 Hz. Consumption, inrush and sealed < 100 VA	-	B	E	-	F	M	Q	N

DC supply

Consumption, inrush and sealed < 100 W	J	B	E	DD	F	M	-	-



Thermal overload relays

0.1–140 A

TeSys
D-line



Thermal overload relays, model d adjustable from 0.1 to 140 A

Compensated relays with manual or automatic reset, with relay trip indicator, for AC or DC

Relay setting range		Fuses to be used with selected relay (international applications only) (5)			With contactor	Catalog number
		aM	gG	BS88		
Class 10 A	0.10–0.16 A	0.25 A	2 A	-	LC1D09–D38	LRD01
	0.16–0.25 A	0.5 A	2 A	-	LC1D09–D38	LRD02
	0.25–0.40 A	1 A	2 A	-	LC1D09–D38	LRD03
	0.40–0.63 A	1 A	1.6 A	-	LC1D09–D38	LRD04
	0.63–1 A	2 A	4 A	-	LC1D09–D38	LRD05
	1–1.7 A	2 A	4 A	6 A	LC1D09–D38	LRD06
	1.6–2.5 A	4 A	6 A	10 A	LC1D09–D38	LRD07
	2.5–4 A	6 A	10 A	16 A	LC1D09–D38	LRD08
	4–6 A	8 A	16 A	16 A	LC1D09–D38	LRD10
	5.5–8 A	12 A	20 A	20 A	LC1D09–D38	LRD12
	7–10 A	12 A	20 A	20 A	LC1D09–D38	LRD14
	9–13 A	16 A	25 A	25 A	LC1D12–D38	LRD16
	12–18 A	20 A	35 A	32 A	LC1D18–D38	LRD21
	16–24 A	25 A	50 A	50 A	LC1D25–D38	LRD22
	23–32 A	40 A	63 A	63 A	LC1D25–D38	LRD32
	30–38 A	50 A	80 A	80 A	LC1D32 and D38	LRD35
	17–25 A	25 A	50 A	50 A	LC1D40–D95	LRD3322
	23–32 A	40 A	63 A	63 A	LC1D40–D95	LRD3353
	30–40 A	40 A	100 A	80 A	LC1D40–D95	LRD3355
	37–50 A	63 A	100 A	100 A	LC1D40–D95	LRD3357
	48–65 A	63 A	100 A	100 A	LC1D50–D95	LRD3359
	55–70 A	80 A	125 A	125 A	LC1D50–D95	LRD3361
	63–80 A	80 A	125 A	125 A	LC1D65 and D95	LRD3363
	80–104 A	100 A	160 A	160 A	LC1D80 and D95	LRD3365
	80–104 A	125 A	200 A	160 A	LC1D115 and D150	LRD4365
	95–120 A	125 A	200 A	200 A	LC1D115 and D150	LRD4367
	110–140 A	160 A	250 A	200 A	LC1D150	LRD4369
	80–104 A	100 A	160 A	160 A	(1)	LRD33656
	95–120 A	125 A	200 A	200 A	(1)	LRD33676
	110–140 A	160 A	250 A	200 A	(1)	LRD33696
Class 20 A	6 A	10 A	16 A		LC1D09–D32	LRD1508
	4–6 A	8 A	16 A	16 A	LC1D09–D32	LRD1510
	5.5–8 A	12 A	20 A	20 A	LC1D09–D32	LRD1512
	7–10 A	16 A	20 A	25 A	LC1D09–D32	LRD1514
	9–13 A	16 A	25 A	25 A	LC1D12–D32	LRD1516
	12–18 A	25 A	35 A	40 A	LC1D18–D32	LRD1521
	17–25 A	32 A	50 A	50 A	LC1D25 and D32	LRD1522
	23–28 A	40 A	63 A	63 A	LC1D25 and D32	LRD1530
	25–32 A	40 A	63 A	63 A	LC1D25 and D32	LRD1532
	17–25 A	32 A	50 A	50 A	LC1D40–D95	LR2D3522
	23–32 A	40 A	63 A	63 A	LC1D40–D95	LR2D3553
	30–40 A	50 A	100 A	80 A	LC1D40–D95	LR2D3555
	37–50 A	63 A	100 A	100 A	LC1D50–D95	LR2D3557
	48–65 A	80 A	125 A	100 A	LC1D50–D95	LR2D3559
	55–70 A	100 A	125 A	125 A	LC1D65–D95	LR2D3561
	63–80 A	100 A	160 A	125 A	LC1D80 and D95	LR2D3563

(1) Separate mounting. Screw clamp terminal connections or connectors. For spring terminal connections on LRD01 to LRD22, add 3 to the end of the catalog number.

Example: **LRD01** becomes **LRD013**. For lug-clamp connections, add 6 to the end of the catalog number. Example: **LRD01** becomes **LRD016**. For thermal overload relays for use with class 10 A unbalanced loads, with connection by screw clamp terminals, change the prefix in the catalog numbers above from LRD (except LRD4*** to LR3D.

Example **LRD01** becomes **LR3D01**.

(5) Short circuit protection for U.S. applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.



For use with contactor	LC1D	LC1F
Motor current	60–150 A	30–630 A
Catalog number, to be completed	LR9D	LR9F

5

Relay setting range	Fuse to be used with selected relay (international application) (3)		For mounting	Compensated and differential beneath contactor LC1		or not with alarm
	aM	gG		Class 10	Class 20	Class 10 or 20
60–100	100	160	D115 and D150	LR9D5367	LR9D5567	
90–150	160	250	D115 and D150	LR9D5369	LR9F5569	
30–50	50	80	F115–F185	LR9F5357	LR9F5557	LR9F57
48–80	80	125	F115–F185	LR9F5363	LR9F5563	LR9F63
60–100	100	200	F115–F185	LR9F5367	LR9F5567	LR9F67
90–150	160	250	F115–F185	LR9F5369	LR9F5569	LR9F69
132–220	250	315	F185–F400	LR9F5371	LR9F5571	LR9F71
200–330	400	500	F225–F500	LR9F7375	LR9F7575	LR9F75
300–500	500	800	F225–F500	LR9F7379	LR9F7579	LR9F79
380–630	630	800	F400–F630 and F800	LR9F7381	LR9F7581	LR9F81

Accessories

Remote control

Function	Reset	Stop and/or Reset
Electrical reset (1)	LA7D03•(2)	
Reset by flexible cable (length 0.5 m)	LA7D305	
Adapter for door interlock mechanism		LA7D1020

Operating head for pushbutton

Spring return	ZA2BL639	ZA2BL432

Rod with snap-off end

Adjustable from 17 to 120 mm	ZA2BZ13	

Insulated terminal blocks

For relays LR9F5•57, F5•63, F5•67, F5•69, F57, F63, F67 and F69	Set of 2 blocks
	LA9F103

(1) The time for which the coil of remote electrical reset device LA7D03 can remain energized depends on its rest time: 1 s pulse with 9 s rest time; 5 s pulse duration with 30 s rest time; 10 s pulse duration with 90 s rest time: maximum pulse duration 20 s with rest time of 300 s. Minimum pulse time: 200 ms.

(2) Catalog number to be completed by adding the coil voltage code, see page 5/27.

(3) Short circuit protection for U.S. applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.

Electronic protection relays for use with PTC thermistor probes 0–800 A

TeSys
LT3, LT6



For use with contactor	LC1-D or LC1-F
Motor current	No limit
Basic reference, to be completed	LT3S

3-pole multifunction protection relays

Operational current	A	0.2–1. 1–5
		LT6P0M005FM

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Protection units with automatic reset with thermistor short-circuit detection

■ without fault memory

Connection		Voltage	Output contact	Catalog number
by cage connectors	AC 50/60 Hz	115 V	N.C.	LT3SE00F
		230 V	N.C.	LT3SE00M
	DC	24 V	N.C.	LT3SE00F
On front panel: fault and voltage signalling indicator				
	AC 50/60 Hz	115/230 V	N.C. + N.O.	LT3SA00M
	DC	24/48 V	N.C. + N.O.	LT3SA00ED
	AC 50/60 Hz or DC	24–230 V	2 C.O.	LT3SA00MW

■ with fault memory

On front panel: fault and voltage signalling indicator, Test and Reset button

AC 50/60 Hz	400 V	N.C. + N.O.	LT3SM00V
	24/48 V	N.C. + N.O.	LT3SM00E
	115/230 V	N.C. + N.O.	LT3SM00M
DC	24/48 V	N.C. + N.O.	LT3SM00ED
AC 50/60 Hz or DC	24–230 V	2 C.O.	LT3SM00MW

Protection components 12–175 A
Switch disconnectors



Type	Mini-Vario for standard applications			
	Mounting door		Backplate mounting in enclosure	
Handle color / Front plate	Red / Yellow		Black / Black	
Front plate dimensions(mm)	60 x 60		60 x 60	
Mounting	Ø 22.5 mm		Ø 22.5 mm	
Degree of protection	IP 20		IP 20	
Rated operational voltage (Ue)	600 V		600 V	
Thermal current in open air (Ith)	10/12 A	VCDN12	VBDN12	VCCDN12
	16/20 A	VCDN20	VBDN20	VCCDN20

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Type		Vario for high performance applications						
		Mounting door					Backplate mounting in enclosure	
Handle color/Front plate		Red / Yellow	Black / Black	Red / Yellow	Black / Black	Red / Yellow		
Front plate dimensions		60 x 60 mm		60 x 60 mm		90 x 90 MM	60 x 60 mm 90 x 90 mm	
Mounting		Ø 22.5 mm		4 screws		4 screws	Ø 22.5 mm	4 screws 4 screws
Degree of protection		IP 20		IP 20		IP 20	IP 20	IP 20 IP 20
Rated operational voltage (Ue)		600 V		600 V		600 V	600 V	600 V 600 V
Thermal current in open air :UL/IEC (A)	10/12 A	VCD02	VBD02	VCF02	VBF02	–	VCCD02	VCCF02 –
	16/20 A	VCD01	VBD01	VCF01	VBF01	–	VCCD01	VCCF01 –
	20/25 A	VCD0	VBD0	VCF0	VBF0	–	VCCD0	VCCF0 –
	20/32 A	VCD1	VBD1	VCF1	VBF1	–	VCCD1	VCCF1 –
	25/40 A	VCD2	VBD2	VCF2	VBF2	–	VCCD2	VCCF2 –
	45/63 A	–	–	VCF3	VBF3	–	–	VCCF3 –
	63/80 A	–	–	VCF4	VBF4	–	–	VCCF4 –
	100/125 A	–	–	–	–	VCF5	–	– VCCF5
	110/175 A	–	–	–	–	VCF6	–	– VCCF6



Add-on modules	For mini-Vario		For Vario						
Main pole modules									
Rating:UL/IEC (A)	10/12 A	16/20 A	10/12 A	16/20 A	20/25 A	20/32 A	25/40 A	45/63 A	63/80 A
Catalog number	VZN12	VZN20	VZ02	VZ01	VZ0	VZ1	VZ2	VZ3	VZ4
Neutral pole module with early make and late break contacts									
Rating	12–20 A		12–40 A		63 and 80 A		125 and 175 A		
Catalog number	VZN11		VZ11		VZ12		VZ13		
Earthing module									
Catalog number	VZN14		VZ14		VZ15		VZ16		
Auxiliary contact block modules									
Contact types	N.O.	N.C.	N.O. + N.C.			N.O. + N.O.			
Catalog number	VZN05	VZN06	VZ7			VZ20			

Self protected starter
0–32 A



Power base for D.O.L. starter					■ Non reversing		■ Reversing	
Connection by screw clamp terminals					Catalog number	Current rating	Catalog number	Current rating
Operational voltage	200/208 V	230/240 V	460 V	575/600 V				
Horsepower rating (UL ratings)	3	3	7.5	10	LUB12	12 A	LU2B12**	12 A
	10	10	20	25	LUB32	32 A	LU2B32**	32 A

5



Add-on blocks							
Contact blocks							
Signalling		Contact					
■ status of starter-controller power poles		N.O. (53-54)					
■ fault				N.C. (95-96)			
■ control handle in position O				N.O. (17-18)		N.O. (17-18)	
Connection	Item	1	1	1	1	1	1
■ screw clamp terminals	1 + 2	LUA1D11		LUA1C11		LUA1C20	
■ without connections	1	LUA1D110		LUA1C110		LUA1C200	
Auxiliary contact blocks							
		N.O.	N.C.	N.O.	N.C.	N.O.	N.C.
		2	-	1	1	-	2
■ screw clamp terminals	3	LUFN20		LUFN11		LUFN02	



Modules			
■ parallel wiring	LUFC00		
■ alarm	LUFW10		
■ communication	AS-i		Modbus
	ASILUFC5		LULC032
■ indication of motor load			4–20 mA
■ fault differentiation and reset			LUFV2
	manual reset		automatic reset
	LUFDH11		LUFDA10





Control units

■ standard		Class 10		
Setting range	Clip-in mounting on power base			
0.15–0.6	12 and 32	LUCAX6**		
0.35–1.4	12 and 32	LUCA1X**		
1.25–5	12 and 32	LUCA05**		
3–12	12 and 32	LUCA12**		
4.5–18	32	LUCA18**		
8–32	32	LUCA32**		
■ advanced		Class 10		Class 20
For motor type	■ 3-phase	■ single-phase	3-phase	
	12 and 32	LUCBX6**	LUCCX6**	LUCDX6**
	12 and 32	LUCB1X**	LUCC1X**	LUCD1X**
	12 and 32	LUCB05**	LUCC05**	LUCD05**
	12 and 32	LUCB12**	LUCC12**	LUCD12**
	32	LUCB18**	LUCC18**	LUCD18**
	32	LUCB32**	LUCC32**	LUCD32**
■ multifunction		Class 5 to 35		
	12 and 32	LUCMX6BL		
	12 and 32	LUCM1XBL		
	12 and 32	LUCM05BL		
	12 and 32	LUCM12BL		
	32	LUCM18BL		
	32	LUCM32BL		

Basic catalog number to be completed by adding the voltage code (1)

Parameter entry, monitoring of parameter values and consultation of logs are carried out:

- either on the front panel, using the built-in display window/ keypad,
- or via an operator terminal,
- or via a PC or a PDA with PowerSuite software,
- or remotely, via a Modbus communication bus

Programming of the product via the keypad requires a 24 Vdc auxiliary power supply.



Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)			
Volts	24	48–72	110–240
DC	BL	-	-
AC	B	-	-
AC/DC	-	ES(1)	FU (2)

(1) 48–72 VDC, 48 VAC. (2) 110–220 VDC, 110–240 VAC.

Solid state overload relay system
0–800 A



Above 32 A, the U-line Solid state overload relay system provides a motor starter management solution identical to that provided by TeSys U-line starter-controller. Used in conjunction with a short-circuit protection device and a contactor, it provides a motor starter whose functions are the same as those of a TeSys U-line self protected starter and, in particular, provides motor starter overload protection and control functions. It consists of a control unit whose adjustment range is compatible with the secondary of current transformers, plus a control base which also allows fitment of a function module or a communication module. It requires a 24 VDC external power supply.

5	Control bases		For use with contactors	
	Current transformers (auxiliary supply voltage 24 VDC)			
	Connection	screw		
	Control	screw	LUTM10BL TeSys model D	



Control units		Class 10		Class 20		Class 5 to 30	
For 3-phase motors							
Setting range	0.35–1.05						
■ advanced		LUCBT1BL		LUCDT1BL			
■ multifunction						LUCMT1BL	





Accessories

Module		
alarm	LUFW10	
communication		Modbus LULC033
indication of motor load		4–20 mA LUFV2

5

Current transformers

Operational current						
primary	30	50	100	200	400	800
secondary	LUTC0301	LUTC0501	LUTC1001	LUTC2001	LUTC4001	LUTC8001

IEC type industrial control relays

TeSys Type CA2K, CA3K and CA4K



CA2KN40**



CA2KN403**



CA3KN407**



CA4KN405***

Control relays

- Mounting on 35 mm DIN 3 track or 4 screw direct mounting - Screws in open "ready-to-tighten" position - NEMA A600, Q600 - IEC AC15, DC13	Control Circuit		Type of Termination	Contact Configuration		Catalog number (1)
	Supply	Consumption		N.O.	N.C.	
5	AC	4.5 VA	screw clamp	4	0	CA2KN40**
				3	1	CA2KN31**
				2	2	CA2KN22**
	AC	4.5 VA	spring terminals	4	0	CA2KN403**
				3	1	CA2KN313**
				2	2	CA2KN223**
	AC	4.5 VA	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA2KN407**
				3	1	CA2KN317**
				2	2	CA2KN227**
	AC	4.5 VA	solder pins for printed circuit board	4	0	CA2KN405**
				3	1	CA2KN315**
				2	2	CA2KN225**
	DC	3 W	screw clamp	4	0	CA3KN40**
				3	1	CA3KN31**
				2	2	CA3KN22**
	DC	3 W	spring terminals	4	0	CA3KN403**
				3	1	CA3KN313**
				2	2	CA3KN223**
	DC	3 W	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA3KN407**
				3	1	CA3KN317**
				2	2	CA3KN227**
	DC	3 W	solder pins for printed circuit board	4	0	CA3KN405**
				3	1	CA3KN315**
				2	2	CA3KN225**

Low consumption control relays

- Compatible with programmable controller outputs - LED indicator incorporated - Wide range coil (70 to 130% Uc), suppressor fitted as standard - Mounting on 35 mm DIN 3 track or 4 screw direct mounting - Screws in open "ready-to-tighten" position	DC	1.8 W	screw clamp	4	0	CA4KN40***
				3	1	CA4KN31***
				2	2	CA4KN22***
	DC	1.8 W	spring terminals	4	0	CA4KN403***
				3	1	CA4KN313***
				2	2	CA4KN223***
	DC	1.8 W	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA4KN407***
				3	1	CA4KN317***
				2	2	CA4KN227***
	DC	1.8 W	solder pins for printed circuit board	4	0	CA4KN405***
				3	1	CA4KN315***
				2	2	CA4KN225***

(1) Complete the catalog number by adding the proper voltage code from the table below. Example: **CA4KN227BW3**.

CA2-K control relays (0.8–1.15 Uc) (0.85–1.1Uc)

Volts AC, 50/60 Hz	12	24	36	42	48	110	120	127	208	220/230	230	230/240	380/400	400	400/415	440	480	500	660/690
Code	J7	B7	C7	D7	E7	F7	G7	FC7	L7	M7	P7	U7	Q7	V7	N7	R7	T7	S7	Y7

Up to and including 240V. Coil with integral suppression device available: add 2 to the code required. Example: J72.

CA3-K control relays (0.8–1.15 Uc)

Volts DC	12	20	24	36	48	60	72	100	110	125	200	220	230	240	250
Code	JD	ZD	BD	CD	ED	ND	SD	KD	FD	GD	LD	MD	MPD	MUD	UD

Coil with integral suppression device available: add 3 to the code required. Example: JD3

CA4-K, low consumption control relays (wide range coil : 0.7–1.3 Uc)

Volts DC	12	24	48	72
Code	JW3	BW3	EW3	SW3

For additional options and information, reference catalog 8501CT0101.

IEC type industrial control relays

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Instantaneous auxiliary contact blocks

Clip-on front mounting, 1 block per control relay Auxiliary contact module not suitable for safety circuits	Type of Connection	Contact Configuration		Catalog number
		N.O.	N.C.	
	screw clamp	2	0	LA1KN20
		0	2	LA1KN02
		1	1	LA1KN11
		4	0	LA1KN40 (1)
		3	1	LA1KN31 (1)
		2	2	LA1KN22 (1)
		1	3	LA1KN13 (1)
		0	4	LA1KN04 (1)
	spring terminals	2	0	LA1KN203
		0	2	LA1KN023
		1	1	LA1KN113
		4	0	LA1KN403 (1)
		3	1	LA1KN313 (1)
		2	2	LA1KN223 (1)
		1	3	LA1KN133 (1)
		0	4	LA1KN043 (1)
	Slip-on 1 x 6.35 or 2 x 2.8	2	0	LA1KN207
		0	2	LA1KN027
		1	1	LA1KN117
		4	0	LA1KN407 (1)
		3	1	LA1KN317 (1)
		2	2	LA1KN227 (1)
		1	3	LA1KN137 (1)
		0	4	LA1KN047 (1)

(1) Not to be used on CA4KN relays

Electronic time delay contact blocks

Relay output, with common point changeover contact, 240 VAC / VDC, 2 A maximum.				
Control voltage: 0.85–1.1 Uc.				
Maximum switching capacity: 250 VA or 150 W.				
Operating temperature: - 10 to + 60 °C (+14° F to 140° F).				
Reset time: 1.5 sec. during the time delay period, 0.5 sec. after the time delay.				
Clip-on front mounting, 1 block per control relay				
Voltage	Type	Timing Range	Composition C.O.	Catalog number
24–48 VAC / VDC	On-delay	1–30 seconds	1	LA2KT2E
110–240 VAC	On-delay	1–30 seconds	1	LA2KT2U

For additional options and information, reference catalog 8501CT0101.

IEC type industrial control relays

TeSys Type CAD



CAD32**



CAD503**



CAD326**

Instantaneous control relays

Terminal Type	Number of Contacts	Contact Configuration		Catalog number (1)
		N.O.	N.C.	
screw clamp	5	5	0	CAD50**
		3	2	CAD32**
spring terminal	5	5	0	CAD503**
		3	2	CAD323**
ring tongue	5	5	0	CAD506**
		3	2	CAD326**

(1) Complete the catalog number by adding the proper voltage code from the table below. Example:CAD50G7.

AC 50/60 Hz coil											
Volts	12	24	48	120	208	240	277	480	600		
Code	J7	B7	E7	G7	LE7	U7	W7	T7	X7		
DC coil (coils have built in suppression as standard)											
Volts	12	24	36	48	60	72	110	125	220	250	440
Code	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
DC low consumption coil (coils have built in suppression as standard)											
Volts	5	12	24	48	72						
Code	AL	JL	BL	EL	SL						

For additional options and information, reference catalog 8501CT0101.

IEC type industrial control relays

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Instantaneous auxiliary contact blocks (for use in normal operation environments)

Number of Contacts	Max. Number per Device (clip-on mounting)		Termination Type	Contact Composition		Catalog number
	Front	Left Side Only		N.O.	N.C.	
2	1	—	Screw Clamp	2	0	LADN20
				1	1	LADN11
				0	2	LADN02
2	1	—	Spring Terminal	2	0	LADN203
				1	1	LADN113
				0	2	LADN023
2	—	1 (not for DC devices)	Screw Clamp	2	0	LAD8N20
				1	1	LAD8N11
				0	2	LAD8N02
4	1	—	Screw Clamp	4	0	LADN40
				3	1	LADN31
				2	2	LADN22
				1	3	LADN13
				0	4	LADN04
4	1	—	Spring Terminal	4	0	LADN403
				3	1	LADN313
				2	2	LADN223
				1	3	LADN133
				0	4	LADN043
4	1	—	Screw Clamp	2	2	LADC22 (4)
4	1	—	Spring Terminal	2	2	LADC223 (4)

Instantaneous auxiliary contact blocks with dust and damp protected contacts (for use in particularly harsh industrial environments)

Number of Contacts	Max. Number per Device Front Mounting	Contact Composition					Catalog Number
		Sealed N.O.	N.C.	(1)	Normal N.O.	N.C.	
2	1	2	—	—	—	—	LA1DX20
		—	2	—	—	—	LA1DX02
		2	—	2	—	—	LA1DY20
4	1	2	—	—	2	—	LA1DZ40
		2	—	—	1	1	LA1DZ31

(1) Grounding terminal points (2 terminals jumpered together; see diagram on page 8 of Catalog 8501CT0101).

Time delay auxiliary contact blocks

Number and Type of Contacts	Max. Number per Device Front Mounting	Time Delay Type	Termination Type	Range	Catalog Number
1 N.C. and 1 N.O.	1	On-Delay	screw clamp	0.1 to 3 sec. (2)	LADT0
				0.1 to 30 sec.	LADT2
				10 to 180 sec.	LADT4
				1 to 30 sec. (3)	LADS2
1 N.C. and 1 N.O.	1	On-Delay	spring terminal	0.1 to 3 sec. (2)	LADT03
				0.1 to 30 sec.	LADT23
				10 to 180 sec.	LADT43
				1 to 30 sec. (3)	LADS23
1 N.C. and 1 N.O.	1	Off-Delay	screw clamp	0.1 to 3 sec. (2)	LADR0
				0.1 to 30 sec.	LADR2
				10 to 180 sec.	LADR4
				0.1 to 3 sec. (2)	LADR03
1 N.C. and 1 N.O.	1	Off-Delay	spring terminal	0.1 to 30 sec.	LADR23
				10 to 180 sec.	LADR43

(Lockout Cover, see page 7 of Catalog 8501CT0101.)

(2) With extended scale from 0.1 to 0.6 s.

(3) With switching time of 40 ms ± 15 ms between opening of the N.C. contact and closing of the N.O. contact.

(4) Includes 1 N.O. & 1 N.C. overlapping contact.

For additional options and information, reference catalog 8501CT0101.

NEMA Type

Contactors and starters

3-pole contactors and starters, open style

(1) Standard control circuit voltages:

Volts	24	110	120	208	220
50 Hz	–	V02	–	–	V03
60 Hz	V01 (4)	–	V02	V08	–

Volts	240	380	440	480	600
50 Hz	–	V05	V06	–	–
60 Hz	V03	–	–	V06	V07

For 24 V and 120 V coils add the letter "S" for separate control. Example: 8502SAO12 V01S.



Type						Contactors 3-pole, open style	Starters 3-pole, open style
Characteristics							
NEMA size	Standard power ratings of 3-phase motors 50/60 Hz				Maximum continuous current	Basic catalog number complete with code indicating control circuit voltage (1) and optional Forms (2)	Basic catalog number complete with code indicating control circuit voltage (1) optional Forms (2) and “H” code (3)
	Motor voltage						
	200 V	230 V	460 V	575 V	A		
	Hp kW	Hp kW	Hp kW	Hp kW			
00	1.5 1.1	1.5 1.1	2 1.5	2 1.5	9	8502SAO12 ppp	8536SAO12 ppp
0	3 2.2	3 2.2	5 3.7	5 3.7	18	8502SBO2 ppp	8536 SBO2 ppp
1	7.5 5.5	7.5 5.5	10 7.5	10 7.5	27	8502SCO2 ppp	8536 SCO3 ppp
2	10 7.5	15 11	25 18.5	25 18.5	45	8502SDO2 ppp	8536 SDO1 ppp
3	25 18,5	30 22	50 37	50 37	90	8502SEO2 ppp	8536 SEO1 ppp
4	40 30	50 37	100 75	100 75	135	8502SFO2 ppp	8536 SFO1 ppp
5	75 55	100 75	200 150	200 150	270	8502SGO2 ppp	8536 SGO1 ppp
6	150 110	200 150	400 300	400 300	540	8502SHO2 ppp	8536 SHO2 ppp
7	– –	300 220	600 450	600 450	810	8502SJO2 ppp	8536 SJO2 ppp

(2) For optional Forms, please consult your nearest Square D/Schneider Electric sales office.

(3) Add the letter "H" for Solid State Overload Relays, see tables below.

(4) 24 V coil is not available for sizes 4 to 7. Available for sizes 00–3, specify the letter "S" for separate control.

Solid State Overload Relays

(6) Standard current ranges dependent on starter size e:

Size	00	0	1	2	3
Current ranges A	1.5–4.5 (8)	6–18	9–27	15–45	30–90

Size	4	5	6	7
Current ranges A	45–135	90–270	180–540 (8)	270–810 (9)



Form adders			Motor Logic® solid state relays Without additional auxiliary contact	Motor Logic® solid state relays With additional auxiliary contact
Description	Current range	For use with	Suffix to be added to the starter catalog number (7)	Suffix to be added to the starter catalog number (7)
Trip class 10	Base unit,	(6)	8536 Spp	H10 H11
Base unit, Trip class 20	(6)	8536 Spp 8736 Spp	H20	H21
Feature unit	(6)	8536 Spp 8736 Spp	H30	H31

(7) Example: 8536SAO12V01H10.

(8) Only available with feature units.

(9) Only available with feature units with auxiliary contact.
For additional information, reference catalog 8502CT9701.

NEMA Type

3-pole reversing contactors and reversing starters, open style

(1) Standard control circuit voltages:

Volts	24	110	120	208	220
50 Hz	–	V02	–	–	V03
60 Hz	V01 (4)	–	V02	V08	–

Volts	240	380	440	480	600
50 Hz	–	V05	V06	–	–
60 Hz	V03	–	–	V06	V07

For 24 V and 120 V coils add the letter "S" for separate control. Example: 8702SAO4V01S.

Type								Reversing contactors 3-pole, open style		Reversing starters 3-pole, open style			
Characteristics													
NEMA size	Standard power ratings of 3-phase motors 50/60 Hz					Maximum continuous current	Basic catalog number complete with code indicating control circuit voltage (1) and optional Forms (2)		Basic catalog number complete with code indicating control circuit voltage (1) optional Forms (2) and “H” code (3)				
	Motor voltage												
	200V		230V		460V	575V							
	Hp	kW	Hp	kW	Hp	kW	Hp	kW	A	Vertical	Side by side	Vertical	Side by side
00	1.5	1.1	1.5	1.1	2	1.5	2	1.5	9	–	8702SAO4 ppp	–	8736SAO16 ppp
0	3	2.2	3	2.2	5	3.7	5	3.7	18	8702SBO12 ppp	8702SBO4 ppp	8736SBO10 ppp	8736SBO4 ppp
1	7.5	5.5	7.5	5.5	10	7.5	10	7.5	27	8702SCO7 ppp	8702SCO8 ppp	8736SCO7 ppp	8736SCO8 ppp
2	10	7.5	15	11	25	18.5	25	18.5	45	8702SDO1 ppp	8702SDO2 ppp	8736SDO1 ppp	8736SDO2 ppp
3	25	18.5	30	22	50	37	50	37	90	8702SEO1 ppp	8702SEO2 ppp	8736SEO1 ppp	8736SEO2 ppp
4	40	30	50	37	100	75	100	75	135	8702SFO1 ppp	8702SFO3 ppp	8736SFO1 ppp	8736SFO3 ppp
5	75	55	100	75	200	150	200	150	270	8702SGO1 ppp	8702SGO3 ppp	8736SGO1 ppp	8736SGO3 ppp
6	150	110	200	150	400	300	400	300	540	–	8702SHO1 ppp	–	8736SHO1 ppp
7	–	–	300	220	600	450	600	450	810	–	8702SJO1 ppp	–	8736SJO1 ppp

(2) For optional Forms, please consult your nearest Square D/Schneider Electric sales office.

(3) Add the letter "H" for Solid State Overload Relays, see tables below.

(4) 24 V coil is not available for sizes 4 to 7. Available for sizes 00–3, specify the letter "S" for separate control.

Solid State Overload Relays



Form adders	Motor Logic® PLUS solid state relays 200 to 480 V	Motor Logic® PLUS solid state relays 600 V
Current range	Suffix to be added to the starter catalog number (7)	Suffix to be added to the starter catalog number (7)
0.5–2.3 A	B20	B24
2–9 A	B30	B34
6–27 A	B40	B44
10–45 A	B50	B54
20–90 A	B60	B64
60–135 A	B70	B74
120–270 A	B80	B84
240–540 A	B90	B94

(7) Example: 8536SAO12V01B20.

For additional information, reference catalog 8502CT9701.

NEMA Type

Combination starters 3-pole disconnect switch starters



NEMA 1 general purpose enclosure



NEMA 12 dust-tight and drip-tight industrial use enclosure

Type							3-pole starters non-reversing with Class H fuses	3-pole starters, non-reversing with Class R fuses	3-pole starters, non-reversing with Class H fuses	3-pole starters, non-reversing with Class R			
fuses													
Characteristics													
Size	Standard power ratings						Fuse	Basic catalog number	Basic catalog number	Basic catalog number	Basic catalog number		
NEMA	of 3-phase motors 50/60 Hz						size	complete with code indicating control circuit voltage (1) optional Forms (2) and H code (3)	complete with code indicating control circuit voltage (1) and optional Forms (2)	complete with code indicating circuit voltage (1) optional Forms (2) and H code (3)	complete with code indicating circuit voltage (1) and optional Forms (2)		
Motor voltage (starter voltage)													
200 V (208 V)		230 V (240 V)		460 V (480 V)		575 V (600 V)							
	Hp	kW	Hp	kW	Hp	kW	Hp	kW	A				
0	3	2.2	3	2.2	—	—	—	—	30	8538SBG12 ppp	8538SBG32 ppp	8538SBA (4) 2 ppp	8538SBA (5) 2 ppp
	—	—	—	—	5	3.75	5	3.75	30	8538SBG13 ppp	8538SBG33 ppp	8538SBA (4) 3 ppp	8538SBA (5) 3 ppp
1	5	3.75	5	3.75	—	—	—	—	30	8538SCG12 ppp	8538SCG32 ppp	8538SCA (4) 2 ppp	8538SCA (5) 2 ppp
	—	—	—	—	10	7.5	10	7.5	30	8538SCG14 ppp	8538SCG34 ppp	8538SCA (4) 4 ppp	8538SCA (5) 4 ppp
2	7.5	5.5	7.5	5.5	—	—	—	—	60	8538SCG13 ppp	8538SCG33 ppp	8538SCA (4) 3 ppp	8538SCA (5) 3 ppp
	10	7.5	15	11	—	—	—	—	60	8538SDG12 ppp	8538SDG32 ppp	8538SDA (4) 2 ppp	8538SDA (5) 2 ppp
	—	—	—	—	15	11	15	11	30	8538SDG16 ppp	8538SDG36 ppp	8538SDA (4) 6 ppp	8538SDA (5) 6 ppp
3	—	—	—	—	25	18.5	25	18.5	60	8538SDG14 ppp	8538SDG34 ppp	8538SDA (4) 4 ppp	8538SDA (5) 4 ppp
	20	15	25	18.5	—	—	—	—	100	8538SEG15 ppp	8538SEG35 ppp	8538SEA (4) 5 ppp	8538SEA (5) 5 ppp
	—	—	—	—	50	37	50	37	100	8538SEG13 ppp	8538SEG33 ppp	8538SEA (4) 3 ppp	8538SEA (5) 3 ppp
4	25	18.5	30	22	—	—	—	—	200	8538SEG12 ppp	8538SEG32 ppp	8538SEA (4) 2 ppp	8538SEA (5) 2 ppp
	40	30	50	37	—	—	—	—	200	8538SFG15 ppp	8538SFG35 ppp	8538SFA (4) 5 ppp	8538SFA (5) 5 ppp
5	—	—	—	—	100	75	100	75	200	8538SFG13 ppp	8538SFG33 ppp	8538SFA (4) 3 ppp	8538SFA (5) 3 ppp
	75	55	100	75	—	—	—	—	400	8538SGG15 ppp	8538SGG35 ppp	8538SGA (4) 5 ppp	8538SGA (5) 5 ppp
6	—	—	—	—	200	150	200	150	400	8538SGG13 ppp	8538SGG33 ppp	8538SGA (4) 3 ppp	8538SGA (5) 3 ppp
	150	110	200	150	—	—	—	—	600	8538SHG13 ppp	8538SHG33 ppp	8538SHA (4) 3 ppp	8538SHA (5) 3 ppp
	—	—	—	—	400	300	400	300	600	8538SHG12 ppp	8538SHG32 ppp	8538SHA (4) 2 ppp	8538SHA (5) 2 ppp

(1) Standard control circuit voltages:

Volts	24	110	120	208	220	240	380	440	480	600
50 Hz	—	V02	—	—	V03	—	V05	V06	—	—
60 Hz	V01 (6)(7)	—	V02 (6)	V08	—	V03	—	—	V06	V07

For 24 V and 120 V coils add the letter "S" for separate control. Example: 8538SBG12 V01S.

(2) For optional Forms, please consult your nearest Square D/Schneider Electric sales office.

(3) Add the letter "H" for Solid State Overload Relays, see table on page opposite.

(4) To order a unit with external reset, replace (4) with "2". To order a unit without external reset, replace (4) with "1".

(5) To order a unit with external reset, replace (5) with "4". To order a unit without external reset, replace (5) with "3".

(6) To order this voltage code, add the letter "S" (separate control).

(7) 24 V coil not available for sizes 4 to 6. Available for sizes 0 to 3, specify letter "S" (separate control).

NEMA Type

Solid state overload Relays



Form adds			Motor Logic® solid state relays
For use with	Current rang e	Description	Suffix to be added to the starter catalog number(9)
8538SpG 1p /Sp A 1p /SpA 2p (except 8538 SDG16/SDA16/SDA26)	(8)	Base unit, Trip Class 10	H10
	(8)	Base unit, Trip Class 20	H20
	(8)	Feature unit	H30
8538SBG12/13, 8538SBA12/22/13/23, 8538SCG12/14, 8538SCA12/22/14/24, 8538SDG16, 8538SDA16/26	3–9 A	Base unit, Trip Class 10	H109
	3–9 A	Base unit, Trip Class 20	H209
	1.5–4.5 A	Feature unit	H308
	3–9 A	Feature unit	H309
8538SCG12/14 8538SCA12/22/14/24, 8538SDG16 8538SDA16/26	6–18 A	Base unit, Trip Class 10	H100
	6–18 A	Base unit, Trip Class 20	H200
	6–18 A	Feature unit	H300
8538SDG16, 8538SDA16/26	9–27 A	Base unit, Trip Class 10	H101
	9–27 A	Base unit, Trip Class 20	H201
	9–27 A	Feature unit	H301

(8) Standard current ranges dependent on starter size:

Size	00	0	1	2	3	4	5	6	7
Current ranges A	3–9	6–18	9–27	15–45	30–90	45–135	90–270	180–540 (10)	270–810 (11)

(9) Example: 8538SBG12V01H10.

(10) Only available with feature units.

(11) Only available with feature units with auxiliary contact.

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NEMA Type

Combination starters

Mag-Gard®

circuit-breaker starters

(1) Standard control circuit voltages:

Volts	24	110	120	208	220
50 Hz	–	V02	–	–	V03
60 Hz	V01 (4)(5)	–	V02 (4)	V08	–

Volts	240	380	440	480	600
50 Hz	–	V05	V06	–	–
60 Hz	V03	–	–	V06	V07

For 24 V and 120 V coils add the letter “S” for separate control.Example: 8539SCG41V02H10S.



NEMA 1 general purpose enclosure

Type										3-pole circuit breaker starters, non-reversing	
Characteristics											
NEMA size	Standard power ratings of 3-phase motors 50/60 Hz								Circuit-breaker	Basic catalog number complete with code indicating control circuit voltage (1), optional Forms (2) and “H” code (3)	
Motor voltage (star ter voltage)											
200 V (208 V)		230 V (240 V)		460 V (480 V)		575 V (600 V)					
Hp	kW	Hp	kW	Hp	kW	Hp	kW				
0	0.3	0.2	0.3	0.2	1	0.75	1	0.75	GJL 36003 MO1	8539SBG41 ppp	
	1	0.75	1	0.75	3	2.2	3	2.2	GJL 36007 MO2	8539SBG42 ppp	
	3	2.2	3	2.2	5	3.7	5	3.7	GJL 36015 MO3	8539SBG43 ppp	
1	0.3	0.2	0.3	0.2	1	0.75	1	0.75	GJL 36003 MO1	8539SCG41 ppp	
	1	0.75	1	0.75	3	2.2	3	2.2	GJL 36007 MO2	8539SCG42 ppp	
	3	2.2	3	2.2	7.5	5.5	10	7.5	GJL 36015 MO3	8539SCG43 ppp	
	5	3.7	7.5	5.5	10	7.5	–	–	GJL 36030 MO4	8539SCG44 ppp	
2	7.5	5.5	–	–	–	–	–	–	GJL 36050 MO5	8539SCG45 ppp	
	3	2.2	3	2.2	7.5	5.5	10	7.5	GJL 36015 MO3	8539SDG41 ppp	
	5	3.7	7.5	5.5	15	11	20	15	GJL 36030 MO4	8539SDG42 ppp	
	10	7.5	10	7.5	25	18.5	25	18.5	GJL 36050 MO5	8539SDG43 ppp	
	–	–	15	11	–	–	–	–	GJL 36075 MO6	8539SDG44 ppp	
3	–	–	–	–	25	18.5	30	22	GJL 36050 MO5	8539SEG41 ppp	
	25	18.5	30	22	30	22	50	37	FAL 36100 18M	8539SEG42 ppp	
4	30	22	–	–	75	55	100	75	KAL 36250 25M	8539SFG42 ppp	
	–	–	40	30	–	–	–	–	KAL 36250 26M	8539SFG43 ppp	
	–	–	50	37	100	75	–	–	KAL 36250 29M	8539SFG44 ppp	
5	–	–	–	–	–	–	125	90	KAL 36250 29M	8539SGG41 ppp	
	50	37	–	–	–	–	150	110	KAL 36250 30M	8539SGG42 ppp	
	–	–	60	45	125	90	–	–	KAL 36250 31M	8539SGG43 ppp	
	60	45	75	55	150	110	200	150	LAL 36400 32M	8539SGG44 ppp	
	75	55	–	–	–	–	–	–	LAL 36400 33M	8539SGG45 ppp	
6	–	–	100	75	200	150	–	–	LAL 36400 35M	8539SGG46 ppp	
	–	–	–	–	–	–	250	185	LAL 36400 35M	8539SHG42 ppp	
	100	75	–	–	250	185	300	220	LAL 36400 36M	8539SHG43 ppp	
	125	90	150	110	300	220	400	300	MAL 36600 40M	8539SHG44 ppp	
	150	110	–	–	350	250	–	–	MAL 36600 42M	8539SHG45 ppp	
7	–	–	200	150	400	300	–	–	MAL 36600 44M	8539SHG46 ppp	
	–	–	–	–	–	–	500	370	MAL 36800 44M	8539SJG41 ppp	
	–	–	250	185	500	370	600	450	MAL 36800 45M	8539SJG42 ppp	
	–	–	300	220	600	450	–	–	MAL 361000 47M	8539SJG43 ppp	

(2) For optional Forms, please consult your nearest Schneider Electric/Square D sales office.

(3) Add the letter “H” for Motor Logic® solid state overload relays, see page 1-30.

Motor Logic® PLUS solid state overload relays are not available on combination starters.

(4) For this voltage code, add the letter “S” (separate control).

(5) 24 V coil not available for sizes 4 to 6. Available for sizes 0 to 3, specify letter “S” (separate control).

NEMA Type

Thermal-magnetic circuit-breaker starters

(1) Standard control circuit voltages:

Volts	24	110	120	208	220
50 Hz	–	V02	–	–	V03
60 Hz	V01 (4/5)	–	V02 (4)	V08	–

Volts	240	380	440	480	600
50 Hz	–	V05	V06	–	–
60 Hz	V03	–	–	V06	V07

For 24 V and 120 V coils add the letter "S" for separate control. Example: 8539SBG1V02H10S.



NEMA 1 general purpose enclosure

Type								3-pole thermal-magnetic circuit-breaker starters, non-reversing						
Characteristics														
NEMA size	Standard power ratings of 3-phase motors 50/60 Hz						Circuit-breaker		Basic catalog number complete with code indicating control circuit voltage (1), optional Forms (2) and “H”code (3)					
	Motor voltage (starter voltage)													
	200 V (208 V)		230 V (240 V)		460 V (480 V)		575 V (600 V)		Type	Current rating				
	Hp	kW	Hp	kW	Hp	kW	Hp	kW		A				
0	2	1.5	2	1.5	—	—	—	—	FAL	15	8539SBG1	ppp		
	—	—	—	—	5	3.7	5	3.7	FAL	15	8539SBG2	ppp		
	3	2.2	3	2.2	—	—	—	—	FAL	20	8539SBG3	ppp		
1	5	3.7	—	—	—	—	—	—	FAL	35	8539SCG5	ppp		
	7.5	5.5	—	—	—	—	—	—	FAL	50	8539SCG2	ppp		
	—	—	5	3.7	—	—	—	—	FAL	30	8539SCG1	ppp		
	—	—	7.5	5.5	—	—	—	—	FAL	45	8539SCG6	ppp		
	—	—	—	—	7.5	5.5	10	7.5	FAL	20	8539SCG3	ppp		
	—	—	—	—	10	7.5	—	—	FAL	25	8539SCG7	ppp		
	—	—	—	—	—	—	7.5	5.5	FAL	15	8539SCG8	ppp		
	2	10	7.5	10	7.5	—	—	—	—	FAL	60	8539SDG1	ppp	
2	—	—	15	11	—	—	—	—	FAL	80	8539SDG7	ppp		
	—	—	—	—	7.5	5.5	—	—	FAL	20	8539SDG3	ppp		
	—	—	—	—	20	15	25	18,5	FAL	60	8539SDG4	ppp		
	—	—	—	—	25	18,5	—	—	FAL	70	8539SDG5	ppp		
	—	—	—	—	—	—	15	11	FAL	35	8539SDG8	ppp		
	—	—	—	—	—	—	20	15	FAL	45	8539SDG9	ppp		
	3	15	11	20	15	40	30	50	37	FAL	90	8539SEG3	ppp	
	20	15	25	18.5	50	37	—	—	FAL	100	8539SEG1	ppp		
3	25	18.5	30	22	—	—	—	—	KAL	110	8539SEG5	ppp		
	—	—	—	—	30	22	40	30	FAL	80	8539SEG6	ppp		
	—	—	—	—	—	—	30	22	FAL	60	8539SEG4	ppp		
	4	30	22	—	—	75	55	—	—	KAL	125	8539SFG3	ppp	
	40	30	50	37	100	75	—	—	KAL	200	8539SFG4	ppp		
4	—	—	40	30	—	—	100	75	KAL	150	8539SFG1	ppp		
	—	—	—	—	60	45	75	55	KAL	110	8539SFG5	ppp		
	—	—	—	—	—	—	60	45	FAL	100	8539SFG6	ppp		
	5	50	37	—	—	—	—	150	110	LAL	200	8539SGG6	ppp	
	60	45	75	55	150	110	200	150	LAL	250	8539SGG1	ppp		
	75	55	—	—	—	—	—	—	LAL	300	8539SGG4	ppp		
	—	—	60	45	125	90	—	—	LAL	225	8539SGG3	ppp		
	—	—	100	75	200	150	—	—	LAL	350	8539SGG2	ppp		
5	—	—	—	—	—	—	125	90	KAL	200	8539SGG7	ppp		
	6	100	75	125	90	250	185	300	220	MAL	450	8539SHG4	ppp	
	125	90	150	110	300	220	400	300	MAL	600	8539SHG3	ppp		
	150	110	—	—	350	250	—	—	MAL	600	8539SHG5	ppp		
	—	—	200	150	400	300	—	—	MAL	800	8539SHG7	ppp		
	—	—	—	—	—	—	250	185	MAL	250	8539SHG6	ppp		
	—	—	—	—	—	—	350	250	MAL	500	8539SHG2	ppp		
	7	—	—	250	185	500	370	600	450	MAL	900	8539SJG2	ppp	
7	—	—	300	220	600	450	—	—	MAL	1000	8539SJG3	ppp		
	—	—	—	—	—	—	500	370	MAL	800	8539SJG1	ppp		

(2) For optional Forms, please consult your nearest Schneider Electric/Square D sales office.

(3) Add the letter "H" for Motor Logic® solid state overload relays, see page 5/30.

Motor Logic® PLUS solid state overload relays are not available on combination starters.

(4) For this voltage code, add the letter "S" (separate control).

(5) 24 V coil not available for sizes 4 to 6. Available for sizes 0 to 3, specify letter "S" (separate control).

For additional information, reference catalog 8538CT9701.

NEMA Type

Solid State Overload Relays

Motor Logic®

Base units



Type			Base units for separate mounting	Base units for retrofit to Type S starters (2)
NEMA Size	Full load current range	Type	Catalog number	Catalog number
00C (1)	3–9 A	Trip Class 10	9065SSC10	9065SSC10
		Trip Class 20	9065SSC20	9065SSC20
0 (1)	6–18 A	Trip Class 10	9065SS010	9065SS010
		Trip Class 20	9065SS020	9065SS020
1 (1)	9–27 A	Trip Class 10	9065SS110	9065SS110
		Trip Class 20	9065SS120	9065SS120
2	15–45 A	Trip Class 10	9065SS210	9065SR210
		Trip Class 20	9065SS220	9065SR220
3	30–90 A	Trip Class 10	9065SS310	9065SR310
		Trip Class 20	9065SS320	9065SR320
4	45–135 A	Trip Class 10	9065SS410	9065SR410
		Trip Class 20	9065SS420	9065SR420

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Motor Logic

feature units



Type			Feature units for separate mounting	Feature units for retrofit to Type S starters (2)
NEMA Size	Full load current range	Type	Catalog number	Catalog no.
00B (1)	1.5–4.5 A	Trip Class 10/20	9065SFB20	9065SFB20
00C (1)	3–9 A	Trip Class 10/20	9065SFC20	9065SFC20
0 (1)	6–18 A	Trip Class 10/20	9065SF020	9065SF020
1 (1)	9–27 A	Trip Class 10/20	9065SF120	9065SF120
2	15–45 A	Trip Class 10/20	9065SF220	9065ST220
3	30–90 A	Trip Class 10/20	9065SF320	9065ST320
4	45–135 A	Trip Class 10/20	9065SF420	9065ST420
5 (3)	90–270 A	Trip Class 10/20	–	9065ST520
6 (3)	180–540 A	Trip Class 10/20	–	9065ST620
7 (3)	270–810 A	Trip Class 10/20	–	9065ST720

(1) For power connection kit, see table on page opposite.
(2) For Type S starter catalog numbers, see page 5/30.
(3) Replacement for existing Type S starters with an existing Motor Logic® solid state overload relay. Does not include primary current transformer or additional components.

NEMA Type

Motor Logic PLUS programmable units



Type			Base units for separate mounting
NEMA Size	Current range A	Voltage V	Catalog number
3-phase	0.5–2.3	200–480	9065SPB4
		600	9065SPB6
0	2–9	200–480	9065SPC4
		600	9065SPC6
1	6–27	200–480	9065SP14
		600	9065SP16
2	10–45	200–480	9065SP24
		600	9065SP26
3	20–90	200–480	9065SP34
		600	9065SP36
4 (1)	60–135	200–480	9065SP44
		600	9065SP46
5 (2)	120–270	200–480	9065SP54
		600	9065SP56
6 (3)	240–540	200–480	9065SP64
		600	9065SP66

- (1) Size 4 requires the use of an external current transformer. Ratio of 150:5 recommended.
(2) Size 5 requires the use of an external current transformer. Ratio of 300:5 recommended.
(3) Size 6 requires the use of an external current transformer. Ratio of 600:5 recommended.

Accessories

Type			Power connection kits
Type	Description	For use on	Catalog number
Lug connector kits	For separate mounting	9065 Sp (Sizes 00B/00C/0/1)	9999LLO
	For mounting on Type S starters	9065 Sp (Sizes 00B/00C/0/1)	9999LBO

For additional information, reference catalog 9065CT9701.

For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemanique.com.



NEMA Type

Definite purpose contactors

Compact contactors, single-pole and 2-pole



Type														Compact contactors single-pole	Compact contactors 2-pole (3)
Full load current	Locked rotor current			Resistive load	Motor power								N.O. poles	Basic catalog number complete with code indicating control circuit voltage (1)	Basic catalog number complete with code indicating control circuit voltage (1)
	277 V	480 V	575 V	current	115V single-phase	230V single-phase	230 V 460/575 V 3-phase		3-phase						
A	A	A	A	A	Hp	kW	Hp	kW	Hp	kW	Hp	kW			
20	100	100	80	25	1	0.75	2	1.5	–	–	–	–	1 or 2	8910DP11 ppp	8910DP12 ppp
25	125	125	100	30	2	1.5	3	2.2	–	–	–	–	1 or 2	8910DP21 ppp	8910DP22 ppp
30	150	150	120	40	2	1.5	(1)	(1)	–	–	–	–	1 or 2	8910DP31 ppp	8910DP32 ppp
40	240	200	160	50 (2)	2	1.5	5	3.7	–	–	–	–	1 or 2	8910DP41 ppp	8910DP42 ppp

(1) 3 hp (2.2 kW) for 1-pole device; 5 hp (3.7 kW) for 2-pole device.

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2, 3 and 4-pole, contactors



Type													2, 3 and 4-pole, contactors (3)	
Full load current	Locked rotor current			Resistive load current	Motor power								Basic catalog number complete with code indicating control circuit voltage (1)	
	277 V	480 V	575 V		115V single-phase	230V single-phase	230 V 460/575 V 3-phase							
A	A	A	A	A	Hp	kW	Hp	kW	Hp	kW	Hp	kW		
20	120	100	80	25	1	1.1	2	1.5	5	3.7	7.5	5.5	2	8910DPA12 ppp
													3	8910DPA13 ppp
													4	8910DPA14 ppp
25	150	125	100	35	2	1.5	3	2.2	7.5	5.5	10	7.5	2	8910DPA22 ppp
													3	8910DPA23 ppp
													4	8910DPA24 ppp
30	180	150	120	40	2	1.5	5	3.7	10	7.5	15	11	2	8910DPA32 ppp
													3	8910DPA33 ppp
													4	8910DPA34 ppp
40	240	200	160	50	3	2.2	7.5	5.5	10	7.5	20	15	2	8910DPA42 ppp
													3	8910DPA43 ppp
													4	8910DPA44 ppp
50	300	250	200	62	3	2.2	10	7.5	15	11	30	22	2	8910DPA52 ppp
													3	8910DPA53 ppp
60	360	300	240	75	5	3.7	10	7.5	25	18.5	30	22	2	8910DPA62 ppp
													3	8910DPA63 ppp
75	450	375	300	94	5	3.7	15	11	25	18.5	40	30	2	8910DPA72 ppp
													3	8910DPA73 ppp
90	540	450	360	120	7.5	5.5	20	15	30	22	50	37	2	8910DPA92 ppp
													3	8910DPA93 ppp
120	720	600	480	120	10	7.5	25	18.5	40	30	75	55	2	8910DPA122 ppp
													3	8910DPA123 ppp

For additional information, reference catalog 8910CT9301R6/97.

4-pole contactors

Type														4-pole contactors with 2 N.O. and 2 N.C. poles
Full load current	Locked rotor current				Resistive load current	Motor power								Basic catalog number complete with code indicating control circuit voltage (1)
	277 V	480 V	575 V			115 V single-phase	230 V single-phase	230 V 3-phase	460 V 3-phase	575 V 3-phase				
A	A	A	A	A	A	Hp	kW	Hp	kW	Hp	kW	Hp	kW	
20	120	100	80	25	1	0.75	2	1.5	5	3.7	7.5	5.5	2	8910DPA14 ppp Y392
25	150	125	100	35	2	1.5	3	2.2	7.5	5.5	10	7.5	2	8910DPA24 ppp Y392
30	180	150	120	40	2	1.5	5	3.7	10	7.5	15	11	2	8910DPA34 ppp Y392
40	240	200	160	50	3	2.2	7.5	5.5	10	7.5	20	15	2	8910DPA44 ppp Y392

Accessories

Type		External auxiliary contacts
For use on	Description	Catalog number
8910DPA	1 N.O. contact	9999D10
	1 N.C. contact	9999D01
	1 N.O. and 1 N.C. contacts	9999D11
	2 N.O. contacts	9999D20
8910DPA122/123	1 N.O. contact	9999SX6
	1 N.C. contact	9999SX7
	1 N.O. and 1 N.C. isolated contacts	9999SX8
	1 N.O. overlapping contact	9999SX9
	1 N.C. overlapping contact	9999SX10

(1) Standard control circuit voltages for 8910DP/DPA :

Volts	24	110	120	208-240	220	277	440	480	550	600
50 Hz	V14	V02	—	—	V09	—	V06 (4)	—	V07 (5)	—
60 Hz	V14	—	V02	V09	—	V04	—	V06 (4)	—	V07 (5)

Standard control circuit voltage for 8910DPA122/DPA123:

Volts	24	110	120	208	220	230-240	440	480	550	600
50 Hz	V12	V02	—	—	V03	—	V06	—	V07	—
60 Hz	V01 (6)	—	V02	V08	—	V03	—	V06	—	V07

(2) 50 A resistive limited to 277 V (single pole device only). All other contactors rated 40 A resistive (above 277 V).

(3) Above 240 V, all lines must be switched.

(4) Not available for type 8910DP11 to 8910DP31 single-pole devices .

(5) Not available for type 8910DP single and 2-pole devices .

(6) Only available on types 8910DPA122/DPA123.

(7) N.C. poles on outside. N.C. poles “open” before N.O. poles “close”.

For additional information, reference catalog 8910CT9301R6/97.

NEMA Type

Lighting contactors

Multipole contactors

Types L and LX



Type		Multipole contactors, open style, electrically held (2)	Multipole contactors, open style, mechanically held (2)
Thermal operating current (A)	Number of poles (3)	Basic catalog number complete with code indicating control circuit voltage (1)	Basic catalog number complete with code indicating control circuit voltage (1)
20	2	8903LO20 ppp	8903LXO20 ppp
	3	8903LO30 ppp	8903LXO30 ppp
	4	8903LO40 ppp	8903LXO40 ppp
	6	8903LO60 ppp	8903LXO60 ppp
	8	8903LO 80 ppp	8903LXO80 ppp
	10	8903LO1000 ppp	8903LXO1000 ppp
	12	8903LO1200 ppp	8903LXO1200 ppp

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(1) Standard control circuit voltages:

Volts	24 (4)	110	120	208	220
50 Hz	–	V02	–	–	V03
60 Hz	V01	–	V02	V08	–

Volts	240	277	440	480
50 Hz	–	–	V06	–
60 Hz	V03	V04	–	V06

For Forms and kits, please consult your nearest Square D/Schneider Electric sales office.



Multipole contactors Type S

Type		Multipole contactors, open style, electrically held (2)	Multipole contactors, open style, mechanically held (2)
Thermal operating current (A)	Number of poles	Basic catalog number complete with code indicating control circuit voltage (1)	Basic catalog number complete with code indicating control circuit voltage (1)
30	2	8903SMO1 ppp	8903SMO10 ppp
	3	8903SMO2 ppp	8903SMO11 ppp
	4	8903SMO3 ppp	8903SMO12 ppp
	5	8903SMO4 ppp	8903SMO13 ppp
60	2	8903SPO1 ppp	8903SPO10 ppp
	3	8903SPO2 ppp	8903SPO11 ppp
	4	8903SPO3 ppp	8903SPO12 ppp
	5	8903SPO4 ppp	8903SPO13 ppp
100	2	8903SQO1 ppp	8903SQO10 ppp
	3	8903SQO2 ppp	8903SQO11 ppp
	4	8903SQO3 ppp	8903SQO12 ppp
	5	8903SQO4 ppp	8903SQO13 ppp
200	2	8903SWO1 ppp	8903SWO10 ppp
	3	8903SWO2 ppp	8903SWO11 ppp
	4	8903SWO3 ppp	8903SWO12 ppp
	5	8903SWO4 ppp	–
300	2	8903SXO1 ppp	8903SXO13 ppp
	3	8903SXO2 ppp	8903SXO14 ppp
400 (5)	2	8903SYO1 ppp	8903SYO16 ppp
	3	8903SYO2 ppp	8903SYO17 ppp
600 (5)	2	8903SZO1 ppp	8903SZO18 ppp
	3	8903SZO2 ppp	8903SZO19 ppp
800 (5)	2	8903SJO1 ppp	8903SJO10 ppp
	3	8903SJO2 ppp	8903SJO11 ppp

(2) All lighting contactors are provided with separate control as standard, except electrically held 400, 600 and 800 A devices. Electrically held 400, 600 and 800 A devices are provided with common control.

(3) For factory conversion of N.O. contacts to N.C., order following this example: for 2 N.O. + 2 N.C., order catalog no. 8903LO22. There is a maximum of eight N.C. poles for Type 8903L contactors and a maximum of six N.C. poles for Type 8903LX contactors (field conversion only). Versions are available with up to 12 N.C. poles (factory only).

(4) 24 V coils are not available for 200–800 A devices.

(5) Form F4T is provided as standard on electrically held devices 400–800 A; include line voltage when ordering. Control voltage is 120–60.

For 400–800 A devices—must specify line voltage, not control voltage.

For additional information, reference catalog 8903CT9701.

Manual starters and switches **NEMA Type**

Manual starters Type F, general purpose surface mounting enclosure (NEMA 1)



Type											Single units, standard starters	Single units, starters with handle padlockable in the 'O' position
Type of operator	Number of poles	Maximum power of single-phase motors						Maximum continuous current	Features		Catalog number	Catalog number
		115-230 Vac		115-230 Vdc		277 Vac						
		Hp	kW	Hp	kW	Hp	kW	A				
Toggle operator (1)	1	1	0.75	-	-	1	0.75	16	Standard		2510FG1	2510FG5
									With red pilot light		2510FG1P	2510FG5P
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard		2510FG2	2510FG6
									With red pilot light		2510FG2P	2510FG6P
Removable key (1)	1	1	0.75	-	-	1	0.75	16	Standard		2510FG3	-
									With red pilot light		2510FG3P	-
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard		2510FG4	-
									With red pilot light		2510FG4P	-

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Type											Duplex units, 1 starter in duplex enclosure	Duplex units, 2 starters in one enclosure
Type of operator	Number of poles	Maximum power of single-phase motors						Maximum continuous current	Features		Catalog number	Catalog number
		115-230 Vac		115-230 Vdc		277 Vac						
		Hp	kW	Hp	kW	Hp	kW	A				
Toggle operator (1) (2)	2 (3)	1	0.75	0.75	0.55	1	0.75	16	Standard		2510FG02	2510FG22
									With red pilot light		2510FG02P	2510FG22P
Removable key (1) (2)	2 (3)	1	0.75	0.75	0.55	1	0.75	16	With red pilot light		2510FG04P	2510FG44P

Type											Duplex units, starters with "AUTO-OFF-HAND" selector switch	
Type of operator	Type of of poles	Number of single-phase motors	Maximum power				Maximum continuous current		Features		Catalog number	
			115-230 Vac		115-230 Vdc		277 Vac					
			Hp	kW	Hp	kW	Hp	kW	A			
Toggle operator (1)	1	1	0.75	-	-	1	0.75	16	Standard		2510FG71	
									With red pilot light		2510FG71P	
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard		2510FG72	
									With red pilot light		2510FG72P	
Removable key (1)	2	1	0.75	0.75	0.55	1	0.75	16	With red pilot light		2510FG74P	

(1) One thermal unit is required

(2) For two starters in one enclosure, two thermal units are required.

(3) Two poles for each starter.

For additional information, reference catalog 2570CT9701.

NEMA Type

Manual starters and switches

Manual switches Type K, in general purpose surface mounting enclosure (NEMA 1)



Type														Non-reversing			
Type of operator	No. of poles	Maximum motor powers										Max. continuous current	Catalog number				
		115Vac	230 Vac	460Vac	575 Vac	90Vdc	115Vdc	230 Vdc									
		Hp	kW	Hp	kW	Hp	kW	Hp	kW	Hp	kW	A	Features				
Toggle operator	2	2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG1
		2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	(1) 115 Vac	2510KG1A
		2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	(1) 230 Vac	2510KG1B
	3	2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG2
		2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 208–277 Vac	2510KG2B
		2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 440–600 Vac	2510KG2C
	2	2	1.5	3	2.2	7.5	5.6	10	7.5	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG5
		2	1.5	3	2.2	7.5	5.6	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 115 Vac	2510KG5A
		2	1.5	3	2.2	7.5	5.6	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 230 Vac	2510KG5B
	3	2	1.5	7.5	5.6	15	11.2	20	14.9	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG6
		2	1.5	7.5	5.6	15	11.2	20	14.9	1	0.75	2	1.5	1.5 1.1	30	(1) 208–277 Vac	2510KG6B
		2	1.5	7.5	5.6	15	11.2	20	14.9	1	0.75	2	1.5	1.5 1.1	30	(1) 440–600 Vac	2510KG6C
Removable key	2	2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG3
		2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	(1) 115 Vac	2510KG3A
		2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5 1.1	30	(1) 230 Vac	2510KG3B
	3	2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	Standard	2510KG4
		2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 208–277 Vac	2510KG4B
		2	1.5	7.5	5.6	10	7.5	10	7.5	1	0.75	2	1.5	1.5 1.1	30	(1) 440–600 Vac	2510KG4C

(1) With red pilot light.

NEMA Type

Manual switches Types T and M, in general purpose surface mounting enclosure (NEMA 1)



Type										Non-reversing
Type of operator	No. of poles	NEMA Size	Ratings							Catalog number
			Motor voltage			Max. power				
			DC			3-phase		Single-phase		
			V	Hp	kW	Hp	kW	Hp	kW	
Toggle operator	AC 2	M-0	115	–	–	–	–	1	0.75	2510TBG1
			230	–	–	–	–	2	1.5	
		M-1	115	–	–	–	–	2	1.5	2510TCG1
			230	–	–	–	–	3	2.2	
		M-1P	115	–	–	–	–	3	2.2	2510TCG2
			230	–	–	–	–	5	3.7	
	AC 3	M-0	200–230	–	–	3 (2)	2.2 (2)	–	–	2510TBG2
			380–575	–	–	5 (3)	3.7 (3)	–	–	
		M-1	200–230	–	–	7.5 (2)	5.5 (2)	–	–	2510TCG3
			380–575	–	–	10 (3)	7.5 (3)	–	–	
	DC 2	M-0	115	1	0.75	–	–	–	–	2510TBG4
			230	1.5	1.1	–	–	–	–	
		M-1	115	1.5	1.1	–	–	–	–	2510TCG5
			230	2	1.5	–	–	–	–	
Push button	AC 2	M-0	115	–	–	–	–	1	0.75	2510MBG1
			230	–	–	–	–	2	1.5	
		M-1	115	–	–	–	–	2	1.5	2510MCG1
			230	–	–	–	–	3	2.2	
		M-1P	115	–	–	–	–	3	2.2	2510MCG2
			230	–	–	–	–	5	3.7	
	AC 3	M-0	200–230	–	–	3 (2)	2.2 (2)	–	–	2510MBG2
			380–575	–	–	5 (3)	3.7 (3)	–	–	
		M-1	200–230	–	–	7.5 (2)	5.5 (2)	–	–	2510MCG3
			380–575	–	–	10 (3)	7.5 (3)	–	–	
	DC 2	M-0	115	1	0.75	–	–	–	–	2510MBG4
			230	1.5	1.1	–	–	–	–	
		M-1	115	1.5	1.1	–	–	–	–	2510MCG5
			230	2	1.5	–	–	–	–	

(2) Value for 230 V.

(3) Value for 575 V.

NEMA Type

Accessories

Replacement parts kits

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Type					Replacement parts kits
Description	For use with			Number of poles in the kit	Catalog number
	Class	Type	NEMA Size or current		
Replacement parts kits (the kit contains the moving and stationary contacts, contact springs and necessary hardware)	8502, 8536, 8538, 8539, 8702, 8736	SA (Series B)	00	3	9998SJ1
		SB	0	3	9998SL2
				4	9998SL12
		SB, SC (power pole adder)	0 and 1	1	9998SL22
		SC	1 and 1P	3	9998SL3
			1	4	9998SL13
		SD	2	3	9998SL4
				4	9998SL14
		SD (power pole adder)	2	1	9998SL24
		SE	3	2	9998SL6
				3	9998SL7
		SF	4	2	9998SL8
				3	9998SL9
		SG	5	2	9998SL10
				3	9998SL11
		SH	6	2	9998SL25
				3	9998SL26
		SJ	7	2	9998SL30
				3	9998SL31
	8903	L (Series C) and LX (Series B)	20 A	4	9998RA5B
		SM	30 A	3	9998SL3
				4	9998SL13
		SP	60 A	3	9998SL4
				4	9998SL14
		SQ	100 A	2	9998SL6
				3	9998SL7
		SV	200 A	2	9998SL8
				3	9998SL9
		SX	300 A	2	9998SL10
				3	9998SL11
		SY	400 A	2	9998SL25
				3	9998SL26
		SZ	600 A	2	9998SL32
				3	9998SL33
		SJ	800 A	2	9998SL30
				3	9998SL31
	8910	DPA 1p	20 A	1	9998DRC1
		DPA 2p	25 A	1	9998DRC2
		DPA 3p	30 A	1	9998DRC3
		DPA 4p	40 A	1	9998DRC4
		DPA 5p	50 A	1	9998DRC5
		DPA 6p	60 A	1	9998DRC6
		DPA 7p	75 A	1	9998DRC7
		DPA 9p	90 A	1	9998DRC9
		DPA 123	120 A	1	9998DRC12

For additional information, reference catalog 8502CT9701.

External auxiliary contacts



Type				External contact kits	
Description	For use with			Type of contact	Catalog number
	Class	Type	NEMA size or current		
External convertible contact kits	8502, 8702,	SA to SJ	00 to 7	1 N.O. contact	9999SX6
	8536, 8736			1 N.C. contact	9999SX7
	8903 (Type S only)	SM to SJ	30–800 A	2 isolated contacts 1 N.O. and 1 N.C.	9999SX8
				1 N.O. overlapping contact	9999SX9 (1)
				1 N.C. overlapping contact	9999SX10 (1)
External non-convertible contact kits	8502, 8702,	SA to SJ	00 to 7	1 N.O. contact	9999SX13
	8536, 8736			1 N.C. contact	9999SX14
	8903 (Type S only)	SM to SJ	30–800 A	2 isolated contacts 1 N.O. and 1 N.C.	9999SX15
				1 N.O. overlapping contact	9999SX16 (1)
				1 N.C. overlapping contact	9999SX17 (1)

(1) These products must be used together and must be mounted on the same side of the contactor. They are suitable for applications where it is necessary for a N.O. contact to overlap a N.C. contact.

External auxiliary contacts

Type				External auxiliary contacts	
Description	For use with		Type of contact	Catalog number	
	Class	Type			
External auxiliary contacts	8910	DPA	1 N.O. contact	9999D10	
			1 N.C. contact	9999D01	
			2 isolated contacts 1 N.O. and 1 N.C.	9999D11	
			2 N.O. contacts	9999D20	
	DPA122/123		1 N.O. contact	9999SX6	
			1 N.C. contact	9999SX7	
			2 isolated contacts 1 N.O. and 1 N.C.	9999SX8	
			1 N.O. overlapping contact	9999SX9	
			1 N.C. overlapping contact	9999SX10	

For additional information, reference catalog 8502CT9701.

NEMA Type

Industrial control relays

AC relays

(1) Standard AC control circuit voltages:

Volts	24	110	120	208	220
50 Hz	V12	V02	–	–	V03
60 Hz	V01	–	V02	V08	–

Volts	240	440	480	550	600
50 Hz	–	V06	–	V07	–
60 Hz	V03	–	V06	–	V07

Example: 8501XO20 V02



		AC Control relay	AC Latching relay
Continuous Load Rating	Normally Open Convertible	Basic catalog number complete with code	Basic catalog number complete with code
Inductive / resistive	Instantaneous Contacts	indicating control circuit voltage (1)	indicating control circuit voltage (1)
10 A / 10 A	0	8501XO00 ppp	–
	2	8501XO20 ppp	8501XO20XL ppp
	3	8501XO30 ppp	8501XO30XL ppp
	4	8501XO40 ppp	8501XO40XL ppp
	6	8501XO60 ppp	8501XO60XL ppp
	8	8501XO80 ppp	8501XO80XL ppp
	10	8501XO1000 ppp	–
	12	8501XO1200 ppp	–

A maximum of 8 N.C. contacts is allowed on 9–12 pole relays

Note: Unlatch coil is rated for intermittent duty and should be connected through a N.O. contact of the relay if the input signal is maintained. Order one more N.O. contact than the application requires to use as a coil clearing contact.

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DC relays

(2) Standard DC control circuit voltages:

Volts	12	24	48	72
	V51	V53	V56	V58

Volts	115	125	230	250
	V62	V62	V66	V66

Example: 8501XDO80V53.



		DC Control relay	DC Latching relay
Continuous Load Rating	Normally Open Convertible	Basic catalog number complete with code	Basic catalog number complete with code
Inductive / resistive	Instantaneous Contacts	indicating control circuit voltage (2)	indicating control circuit voltage (2)
5 A / 5 A	0	8501XDO00 ppp	–
	2	8501XDO20 ppp	8501XDO20XDL ppp
	4	8501XDO40 ppp	8501XDO40XDL ppp
	6	8501XDO60 ppp	8501XDO60XDL ppp
	8	8501XDO80 ppp	8501XDO80XDL ppp

Note: Unlatch coil is rated for intermittent duty and should be connected through a N.O. contact of the relay if the input signal is maintained. Order one more N.O. contact than the application requires to use as a coil clearing contact.

Circuit breaker operating mechanisms

Door mounted kits

NEMA Type



Operating Mechanism
(includes lockout)

Complete kit			Std. shaft /std. handle		Long shaft /std. handle		Long shaft / short handle	
Does not include circuit breaker			Includes: Operating mechanism Standard 6" handle Standard shaft kit		Includes: Operating mechanism Standard 6" handle Long shaft kit		Includes: Operating mechanism Short 3" handle Long shaft kit	
Circuit breaker or interrupter type	Number of poles	Frame size (A)	Catalog number	Mounting depth min.-max. (1)	Catalog number	Mounting depth min.-max. (1)	Catalog number	Mounting depth min.-max. (1)
GJL	3	75, 100	9421LG1	5-1/2-10-1/4	9421LG4	5-1/2-20-7/8	9421LG3	5-1/2-20-7/8
FAL, FCL, FHL	2-3	100	9421LN1	5-1/2-10-7/16	9421LN4	5-1/2-21	9421LN3	5-1/2-21
KAL, KCL, KHL	2-3	250	9421LP1	6-1/4-11-3/16	9421LP4	6-1/4-21-3/4	9421LP3	6-1/4-21-3/4
LAL, LHL, Q4L	2-3	400	9421LR1	6-5/16-10-7/8	9421LR4	6-5/16-21-1/2	(3)	
MEL, MXL	2-3	800	9421LT1 (2)	7-3/16-11-5/8	9421LT4 (2)	7-3/16-22-1/4	(3)	
MAL, MHL	2-3	1000	9421LT1 (2)	7-3/16-11-5/8	9421LT4 (2)	7-3/16-22-1/4	(3)	
NAL, NCL, NEL, NXL	2-3	1200	9421LX1 (2)	8-1/4-12-3/4	9421LX4 (2)	8-1/4-23-3/8	(3)	
Merlin Gerlin® NSF, Powerpact D, H and J Circuit Breakers								
MG-NSF,	3	250	9421LJ1	5-1/2-10-3/4	9421LJ4	5-1/2-21-3/8	(3)	
Powerpact D, H and J								

(1) Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door in inches.

(2) Types LT1, LT4, LX1, and LX4 include an 8" handle rather than a 6" handle.

(3) 3" handles are not recommended for use with these circuit breakers.

Handles



Use With			Standard Handle Assemblies			Special 3" Version		
Circuit breaker or interrupter type	Number of poles	Frame size (A)	Type 1, 3R, 12 (Painted)	Type 3R, 4 (Painted)	Type 3R, 4, 4X (Chrome Plated)	Type 1, 3R, 12 (Painted)	Type 3R, 4 (Painted)	Type 3R, 4, 4X (Chrome Plated)
GJL	3	75	9421LH6	9421LH46	9421LC46	9421LH43	9421LH43	9421LC43
FAL, FCL, FHL	2-3	100	9421LH6	9421LH46	9421LC46	9421LH43	9421LH43	9421LC43
KAL, KCL, KHL	2-3	250	9421LH6	9421LH46	9421LC46	9421LH43	9421LH43	9421LC43
LAL, LHL, Q4L	2-3	400	9421LH6	9421LH46	9421LC46	(3)		
MEL, MXL	2-3	800	9421LH8	9421LH48	9421LC48	(3)		
MAL, MHL	2-3	1000	9421LH8	9421LH48	9421LC48	(3)		
NAL, NCL, NEL, NXL	2-3	1200	9421LH8	9421LH48	9421LC48	(3)		

(3) 3" handles are not recommended for use with these circuit breakers.

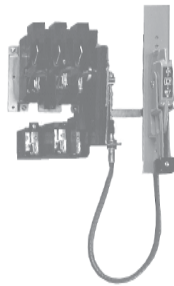
For additional information, reference catalog 9420CT9701.

For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemanique.com.



NEMA Type

Disconnect switches
Variable depth and cable operated



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Disconnect switches														
Disconnect switch size	Variable depth mtg. range min.–max. (inches)	Maximum horsepower ratings (1) AC systems volts (Motor volts)				DC Using 2 poles 250 V max.	Fuse type	Fuse clip rating (amperes) non-interchangeable type For Class H, J, K or R fuses only		Switch and operating mechanism only—does not include handle mechanism Type	Switch for use with cable operators ONLY—does not include handle mechanism or cable operator Type	Switch and operating mechanism and handle mechanism—overpacked Includes Type A1 handle mechanism Type		Includes Type A2 handle mechanism Type
		208 (200)	240 (230)	480 (460)	600 (575)			250 V	600 V			Type	Type	
30 A	6-5/8"—18"	7.5	7.5	15	20	5	None	—	—	9421TCN30	9421TCN30C	9421ATCN301	9421ATCN302	
							H, K, J, R	30	—	9421TCF30	9421TCF30C	9421ATCF301	9421ATCF302	
								60	30	9421TCF33	9421TCF33C	9421ATCF331	9421ATCF332	
60 A	6-5/8"—18"	15	15	30	50	10	None	—	—	9421TDN60	9421TDN60C	9421ATDN601	9421ATDN602	
							H, K, J, R	60	30	9421TDF60	9421TDF60C	9421ATDF601	9421ATDF602	
									60	9421TDF63	9421TDF63C	9421ATDF631	9421ATDF632	
100 A	6-5/8"—18"	25	30	60	75	20	None	—	—	9421TEN10	9421TEN10C	9421ATEN101	9421ATEN102	
							H, K, J, R	100	100	9421TEF10	9421TEF10C	9421ATEF101	9421ATEF102	
200 A	9-1/8"—19-1/4 (2)	40	60	125	150	40	None	—	—	9421TF1	—	9421ATF11	9421ATF21	
							H, K, J, R	200	200	9421TF2	—	9421ATF12	9421ATF22	
								—	400	9421TF3 (3)	—	9421ATF13 (3)	9421ATF23 (3)	
400 A Fixed Depth(4)	11.38 (A5 or A6 Handle)	75	125	250	350	50	None	—	—	9421TG1 (6)(7)	—	For handle selection, see table below.		
400 A Adj. Depth (4)	15.87–19 (5) (A7 or A8 Handle)	75	125	250	350	50	H, K, J, R	400	400	9421TG2 (6)(7)	—	For handle selection, see table below.		

- (1) Refers to rating of switch only.
- (2) 9422 R2 will extend maximum mounting depth 7"
- (3) Accommodates Class J fuses only.
- (4) Switches are either fixed-depth or adjustable; the handle will determine installation.
- (5) In steps of 0.63 inches
- (6) Commercially available enclosures may not accept type TG operating mechanisms. **Contact enclosure manufacturer for availability of enclosures for use with these switches.**
- (7) Right hand flange mounting only.

Cable operator and handles

			Cable Mechanisms (8)	Cable Mechanisms with A1 Handle for Types 1, 3, 3R, 4 and 12
Disconnect Switch Size	Switch Types	Cable Length	Catalog number	Catalog number
30 A, 60 A, 100 A	TCF, TCN, TDF, TDN, TEF, TEN	36"	9421CFT30	9421CFT31
		48"	9421CFT40	—
		60"	9421CFT50	9421CFT51
		120"	9421CFT10	9421CFT11

(8) Must purchase handle mechanism separately (9422, A1, A2, A3 or A4).

	Handle NEMA Type Enclosure 1, 3, 3R, 4 (sheet steel), 12	4, 4X (stainless steel) (10)
Type of Handle	Catalog number	Catalog number
6" HANDLE (9)	9421A1	9421A2
4" HANDLE (9)	9421A3	9421A4
12" HANDLE (fixed depth) (11)	9421A5	9421A6
12" HANDLE (variable depth) (11)	9421A7	9421A8
10" HANDLE (12)	9421A9	9421A10

- (9) For use with 30–200 Ampere switches and all circuit breaker mechanisms.
- (10) All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.
- (11) For use with 400 Ampere Type TG1 and TG2 disconnect switches ONLY.
- (12) For use with Type D2 remote or dual adaptor kit.

For additional information, reference catalog 9420CT9701.

Circuit breaker operating mechanisms

NEMA Type

Flange mounted



Use with:				Operating mechanism		
Circuit breaker frame size	Number of poles	Frame size (A)	Variable depth mtg. range (In.) min.-max. (1)	Operating mechanism only — does not include handle mechanism	Operating mechanism and handle mechanism Includes Type A1 (2) handle mechanism	Includes Type A2 (2) handle mechanism
Square D circuit breakers						
GJL	3	100	6.00–17.75	9422RG1	9422ARG11	9422ARG21
FAL, FHL	2–3	100	5.38–17.75	9422RN1	9422ARN11	9422ARN21
KAL, KHL	2–3	250	6.38–17.88	9422RP1	9422ARP11	9422ARP21
LAL, LHL, Q4L	2–3	400	7.44–18.25	9422RR1	9422ARR11	9422ARR21
MEL, MXL	2–3	800	9.00–18.38	9422R T1	9422ART11	9422ART21
MAL, MHL	2–3	1200	9.00–18.38	9422RT1	9422ART11	9422ART21
NAL, NCL, NEL, NXL	2–3	1200	11.00–18.37	9422RX1	–	–
Merlin Gerin NSF, NSJ, Powerpact D, Hand J Circuit Breakers						
MG-NSF,						
Powerpact D, Hand J	3	250	5.88–17.75	9422RQ1	–	–
MG-NSJ	3	600	9.00–17.75	9422RS1	–	–

(1) Class 9422 Type R2 will extend mounting depth 7 inches.

(2) For handle information, see page 5/48.

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Cable operators

				Cable operators	
Circuit breaker type	No. of poles	Frame size	Cable length	Cable mechanism	Cable mechanisms with A1 handle for Types 1, 3, 3R, 4, 12 (1)
GJL	3	100	36"	9422CGJ30	9422CGJ31
			48"	9422CGJ40	9422CGJ41
			60"	9422CGJ50	9422CGJ51
			120"	9422CGJ10	9422CGJ11
FAL, FHL	2-3	100	36"	9422CFA30	9422CFA31
				9422CFA50	9422CFA51
				9422CFA10	9422CFA11
KAL, KHL	2-3	250	36"	9422CKA30	9422CKA31
			60"	9422CKA50	9422CKA51
			120"	9422CKA10	9422CKA11
LAL, LHL, Q4L	2-3	400	36"	9422CLA30	9422CLA31
			60"	9422CLA50	9422CLA51
			120"	9422CLA10	9422CLA11
MG-NSF, Powerpact D, Hand J	3	250	36"	9422CSF30	–
			60"	9422CSF50	–
			84"	9422CSF70	–
			120"	9422CSF10	–
MG-NSF, Powerpact D, Hand J	4	250	36"	9422CSF304	–
			60"	9422CSF504	–
			120"	9422CSF104	–
MG-NSJ	3	600	36"	9422CSJ30	–
			60"	9422CSJ50	–
			120"	9422CSJ10	–
MG-NSJ	4	600	36"	9422CSJ304	–
			60"	9422CSJ504	–
			120"	9422CSJ104	–

For additional information, reference catalog 9420CT9701.

For other versions, please consult with your local Schneider Electric/
Square D sales office: visit www.us.telemecanique.com.



Power Supplies

Power supplies to keep you running

Phaseo™

Creator of energy

Regulated switch mode power supplies ABL1 / ABL7

Designed to supply the voltage required for control and power circuits of automation system equipment from 0.3 to 40 A.



Compact
power supplies
ABL7CEM



Universal
power supplies
ABL7RE/RP



Modular
power supplies
ABL7RM



Process
power supplies
ABL7U/REQ



Switch mode
power supplies
ABL1REM/RPM

The essential guide

*A simplified
selection guide
enabling you to
quickly select
power supplies.*

Contents

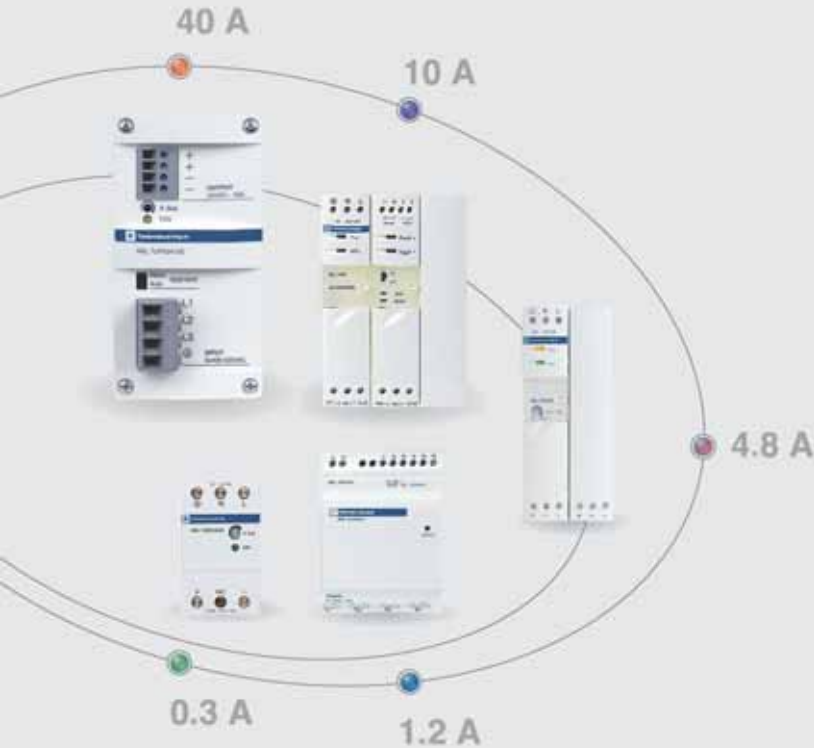
b Power supplies for control circuits
Phaseo ABL7, ABL1, ABL6 6/2 to 6/3

> Switch mode power supplies
Phaseo ABL1

- b Power supplies for single-phase 110–230 V dedicated automation systems
- b Regulated single-phase 12 and 24 V DC
- b Wide offer: power 60 to 240 W
- b Anti harmonic filter
- b Certification: UL and CSA

> Switch mode power supplies
Phaseo ABL7

- b Compact, modular and universal power supplies for single-phase 100–240 V applications
- b 2-phase/3-phase 380–520 V process power supplies
- b Dual LED display
- b Guaranteed output voltage
- b Wide voltage range
- b Book format
- b Conformity to UL/CSA standards



Power supplies For control circuits



Type of power supply		Compact, 1-phase regulated switch mode, wide range AUTO reset of automatic protection		
Input voltage		100–240 V AC, 110–220 V DC (compatible)		
Output voltage		24 V DC		
Nominal Power / Current		7 W / 0.3 A	15 W / 0.6 A	30 W / 1.2 A
Certifications		cULus, TÜV		
Conformity to standards	Safety	UL508, IEC/EN 60950		
	EMC	EN 50081-2, EN 50082-2		
Emission	Conducted and radiated	EN 55011, EN 55022 class A	EN 55011, EN 55022 class A	EN 55011, EN 55022 class B
Dimensions W x D x H		45 x 70 x 75 mm	45 x 95 x 75 mm	
Catalog number		ABL7CEM24003	ABL7CEM24006	ABL7CEM24012



6

Type of power supply		Modular, 1-phase regulated switch mode AUTO reset of automatic protection		
Input voltage		100–240 V AC		
Output voltage		12 V DC	24 V DC	
Nominal Power / Current		22 W / 1.9 A	30 W / 1.3 A	60 W / 2.5 A
Certifications		UL, CSA, TÜV		
Conformity to standards	Safety	IEC/EN 60950, IEC/EN 61131-2/A11		
	EMC	EN 50081-2, IEC 61000-6-2 (EN 50082-2)		
Emission	Conducted and radiated	EN 55011, EN 55022 class B		
Dimensions W x D x H		72 x 70 x 110 mm		
Catalog number		ABL7RM1202	ABL7RM2401	ABL7RM24025



Type of power supply		Universal, 1-phase regulated switch mode, wide range AUTO reset of automatic protection				
Input voltage		100–240 V AC, 110–230 V DC (version ABL7RP••)				
Output voltage		24 V DC				
Nominal Power / Current		48 W / 2 A	72 W / 3 A	120 W / 5 A	240 W / 10 A	
Certifications		UL, CSA, TÜV Ctick				
Conformity to standards	Safety	IEC/EN 60950				
	EMC	EN 50081-2, IEC 61000-6-2 (EN 50082-2)				
	Low frequency harmonic currents	–	EN 61000-3-2	–	EN 61000-3-2	
Emission	Conducted and radiated	EN 55011, EN 55022 class B				
Dimensions W x D x H		27 x 120 x 120 mm	54 x 120 x 120 mm	135 x 120 x 120 mm		
Catalog number		ABL7RE2402	ABL7RE2403	ABL7RE2405	ABL7RP2405(1)	ABL7RE2410
						ABL7RP2410(1)

(1) AUTO/MAN reset of automatic protection.

For additional information, reference Catalog 8440CT0001R4/04.



For control circuits



Type of power supply		Industrial, regulated switch mode					
Input voltage		85 V–264 V AC				85 V–132 V AC / 170 V–264 V AC	
Output voltage		12 V DC		24 V DC		24 V DC	
Nominal Power / Current		60 W / 5 A	100 W / 8.3 A	60 W / 2.5 A	100 W / 4.2 A	150 W / 6.2 A	240 W / 10 A
Certifications		UL, c CSA us, CE, Ctick					
Conformity to standards	Safety	IEC/EN 60950-1, SELV					
	EMC	EN 55011/55022 c1B, IEC/EN 61000-6-2/3, IEC/EN 61000-4-2, 43, 4, 5, 6, 8, 11, 12					
Dimensions W x D x H		150 x 38 x 98	200 x 38 x 98	150 x 38 x 98	200 x 38 x 98	200 x 50 x 98	200 x 65 x 98
Catalog number	Without filter	ABL1REM12050	–	ABL1REM24025	ABL1REM24042	ABL1REM24062	ABL1REM 24100
	With filter (1)	–	ABL1RPM12083	–	ABL1RPM24042	ABL1RPM24062	ABL1RPM24100

(1) Anti harmonic IEC/EN 61000-3-2.
For additional information, reference Catalog 8440CT0001R4/04.



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Type of power supply		Industrial, 3-phase regulated switch mode, wide range AUTO/MAN reset of automatic protection			
Input voltage		3 x 400–520 V AC			
Output voltage		24 V DC			
Nominal Power / Current		120 W / 5 A	240 W / 10 A	480 W / 20 A	960 W / 40 A
Certifications		cULus, cFus			
Conformity to standards	Safety	IEC/EN 60950			
	EMC	EN 50081-1, EN 50082-2			
	Low frequency harmonic currents	– EN 61000-3-2			
Emission	Conducted and radiated	EN 55011, EN 55022 class B			
Dimensions W x D x H		68 x 171 x 127 mm		84 x 240 x 209 mm	106 x 275 x 242 mm
Catalog number		ABL7UES24050	ABL7UPS24100	ABL7UPS24200	ABL7UPS24400

For additional information, reference Catalog 8440CT0001R4/04.

Interfaces and I/Os

Pre-wired system and distributed I/O solutions to help you put **everything together**

Advantys™ IP20: *from the heart of the enclosure...*

Pre-wired system



Advantys Telefast ABE7

Simple, quick, reliable and **powerful** It enables quick connection of inputs/outputs to the operative parts. It eliminates unnecessary cabling by replacing the use of PLC terminals and conventional terminal blocks. It comprises a connection cable and 3 types of connection sub-base.

Distributed inputs/outputs



Advantys OTB

Open and **modular**, this optimized block solution enables the creation of separate groups of industrial I/Os, each positioned as near to the machine as possible, that are managed by a master controller (PLC, PC or variable speed drive) via a fieldbus or communication network.



Advantys STB

This **open** I/O modular system integration solution is an I/O platform that also provides a very modular wiring solution and a power supply management system. Right from the start, you will appreciate its powerful and intelligent configuration software, its networking capabilities, its ease of setting-up and its wealth of parametering features.

IP67: *...to the heart of the machine, put them to the test...*

Pre-wired system



**Passive splitter boxes
Advantys ABE9**

Compact, they eliminate the need for long and difficult cable runs.

b 4 or 8 channel version with M12 connections

Distributed inputs/outputs



**Monobloc splitter boxes
Advantys FTB**

They enable sensors and actuators to be connected in distributed automation systems via fieldbus or communication networks using pre-assembled cables, thus reducing wiring time and costs while at the same time, increasing the operational availability of the installation.

Simple, robust and **configurable**.

b Wide range of I/O combinations (16 I, 8 I 8 O, 12 I 4 O, 16 I/O configurable)



**Modular splitter boxes
Advantys FTM**

Powerful, compact and **modular**.

b Up to 256 discrete I/Os per bus module

The essential guide

A simplified selection guide enabling you to quickly select all the products required for interfacing.

Also see:

b Advantys AS-Interface IP20 and IP67 cabling system
(Chapter 8 "AS-Interface cabling system")





**Distributed I/O
solution
Advantys STB**

b The intelligence
integrated in Advantys STB and its software responds perfectly to your needs by simplifying the implementation of your automation systems.

b Simplicity.
Plug-in connectors accelerate and simplify installation and commissioning; removable memory cards enable bus configurations to be copied in a few seconds.

b Adaptability.
The modular and evolutionary design of the range, I/O modules, network interfaces and options available enable you to design a system suited to your needs.

b Open:
Advantys STB can be interfaced with the main fieldbuses: CANopen, DeviceNet, Ethernet, Fipio, INTERBUS, Modbus Plus, Profibus DP.

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- b IP20 interfaces
Advantys AS-Interface
(see Chapter 8 “AS-Interface cabling system”)
- b IP67 interfaces
Advantys AS-Interface
(see Chapter 8 “AS-Interface cabling system”)

AB1

Terminal blocks
Insulation displacement technology



Clip-on mounting on 35 mm rails		2-way terminal blocks (sold in lots of 100)	End barrier (sold in lots of 10)	2-pole jumper (1) (sold in lots of 10)
#30-18 AWG	Terminal block	AB1AA135U2GR	AB1AAAC122GR	AB1RRAL22
	Grounding terminal block	AB1AATP135U2	AB1AAAC122VE	-
#18-14 AWG	Terminal block	AB1AA235U2GR	AB1AAAC122GR	AB1RRAL22
	Grounding terminal block	AB1AATP235U2	AB1AAAC122VE	-

(1) For a 3, 4, 5 or 10-pole jumper replace the last number of the catalog number (2) by 3, 4, 5 or 10 respectively. (Example: AB1RAL22 becomes AB1RAL23).

Spring clamp technology



Clip-on mounting on 35 mm rails		Terminal blocks (sold in lots of 100)	End barrier (sold in lots of 10)	2-pole jumper (1) (sold in lots of 10)
#22-12 AWG	Terminal block	AB1RR235U2GR	AB1RRAC242GR	AB1RRAL22 (1)
	Grounding terminal block	AB1RRTP235U2	AB1RRTPAC242	-
#22-12 AWG	Terminal block	AB1RR435U2GR	AB1RRAC242GR	AB1RRAL42 (1)
	Grounding terminal block	AB1RRTP435U2	AB1RRTPAC242	-
#24-8 AWG	Terminal block	AB1RR635U2GR	-	AB1RRAL62
	Grounding terminal block	AB1RRTP635U2	-	-
#24-6 AWG	Terminal block	AB1RR1035U2GR (2)	-	AB1RRAL102
	Grounding terminal block	AB1RRTP1035U2 (2)	-	-
#24-4 AWG	Terminal block	AB1RR1635U2GR(2)	-	AB1RRAL162
	Grounding terminal block	AB1RRTP1635U2 (2)	-	-

(1) For a 3, 4, 5 or 10-pole jumper replace the last number of the catalog number (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRAL22 becomes AB1RRAL23).
(2) Sold in lots of 50.

Screw clamp technology



Clip-on mounting on 35 mm rails		Terminal blocks (sold in lots of 100)	End barrier (sold in lots of 50)	2-pole jumper (1) (sold in lots of 10)
#22-12 AWG	Terminal block	AB1VV235U	AB1AC24	AB1ALN22 (1)
	Grounding terminal block	-	-	-
#22-10 AWG	Terminal block	AB1VV435U	AB1AC24	AB1ALN42 (1)
	Grounding terminal block	AB1TP435U	-	-
#22-8 AWG	Terminal block	AB1VV635U	AB1AC6	AB1ALN62 (1)
	Grounding terminal block	AB1TP635U	-	-
#16-6 AWG	Terminal block	AB1VVN1035U (2)	AB1ACN10	AB1ALN102 (1)
	Grounding terminal block	AB1TP1035U (2)	-	-
#12-4 AWG	Terminal block	AB1VVN1635U (2)	AB1ACN16	AB1ALN162 (1)
	Grounding terminal block	AB1TP1635U (2)	-	-

(1) For a 3, 4, 5 or 10-pole jumper replace the last number of the catalog number (2) by 3, 4, 5 or 10 respectively. (Example: AB1ALN22 becomes AB1ALN23).
(2) Sold in lots of 50.

For additional information, reference catalog 9080CT9901RS/01.



Insulated cable ends
Conforming to DIN 46228⁽¹⁾

DZ5/AZ5



Single cable ends		Without marking flag (Sold in lots of 1000)	With marking flag (Sold in lots of 1000)
#22 AWG	White	DZ5CE005	DZ5CA005
#20 AWG	Blue	DZ5CE007	DZ5CA007
#18 AWG	Red	DZ5CE010	DZ5CA010
#16 AWG	Black	DZ5CE015	DZ5CA015
#14 AWG	Grey	DZ5CE025	DZ5CA025

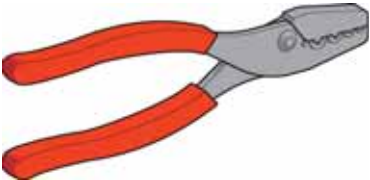


Double cable ends		(Sold in lots of 500)
#22 AWG	White	AZ5DE005
#20 AWG	Blue	AZ5DE007
#18 AWG	Red	AZ5DE010
#16 AWG	Black	AZ5DE015
#14 AWG	Blue	AZ5DE025 (1)

(1) Sold in lots of 250.

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Cabling accessories



Type	Pliers/cutters		
Functions	Stripping	Crimping	Crimping
AWG	20–12	20–12	22–6
Catalog number	AT1PA7	AT1PA2	AT2PA4

For additional information, reference catalog 9080CT9701.



NEMA

Terminal blocks
Screw clamp technology



Mounting on 35mm 7 or Square D track	Terminal block (Sold in lots of 50)	End barrier (Sold in lots of 10)	2-pole jumper (Sold in lots of 10)
#22–10 AWG	9080GM6	9080GM6B	9080GH700 (3)
#22–8 AWG	9080GR6	9080GM6B	9080GH72
#22–10 AWG	9080GK6	9080GK6B (1)	9080GH72
#18–4 AWG	9080GC6	9080GC6B	9080GH74
#12 AWG–1/0	9080GD6 (2)	9080GD6B	9080GH76
#6 AWG–250 kcmil	9080GE6 (2)	–	–

- (1) Sold in lots of 50.
(2) Sold in lots of 10.
(3) Sold in lots of 20.

Thermal-magnetic circuit protectors



Mounting on 35mm 7 track.	Thermal Rating	Single-pole (4)	Single-pole (Sold in lots of 6)	2-pole (Sold in lots of 6)
Catalog number	0.1 A	9080GCB01	–	–
	0.5 A	9080GCB05	GB2CB05	GB2CD05
	0.8 A	9080GCB08	–	–
	1.0 A	9080GCB10	GB2CB06	GB2CD06
	1.2 A	9080GCB12	–	–
	1.5 A	9080GCB15	–	–
	2.0 A	9080GCB20	GB2CB07	GB2CD07
	2.5 A	9080GCB25	–	–
	3.0 A	9080GCB30	GB2CB08	GB2CD08
	4.0 A	9080GCB40	GB2CB09	GB2CD09
	5.0 A	9080GCB50	GB2CB10	GB2CD10
	6.0 A	–	GB2CB12	GB2CD12
	7.0 A	9080GCB70	–	–
	8.0 A	–	GB2CB14	GB2CD14
	10.0 A	9080GCB100	GB2CB16	GB2CD16
	12.0 A	–	GB2CB20	GB2CD20
	15.0 A	9080GCB150	–	–

(4) Can also be mounted on Square D track.

For additional information, reference catalog 9080CT9901R5/02.

Terminal blocks—NEMA

Fuseholders

Interfacing



Fuse Type		Type M	Class CC	Class H	Class H	Class R	Class R
Maximum voltage rating		600	600	250	600	250	600
Maximum current rating		30	30	30	30	30	30
	1-pole	9080FB1611M	9080FB1611CC	9080FB1211	9080FB1611	9080FB1211R	9080FB1611R
	2-pole	9080FB2611M	9080FB2611CC	9080FB2211	9080FB2611	9080FB2211R	9080FB2611R
	3-pole	9080FB3611M	9080FB3611CC	9080FB3211	9080FB3611	9080FB3211R	9080FB3611R

Power Distribution Blocks



Splitter Blocks		Aluminum Lugs				Copper Lugs	
Main wire (Number of wires in)		(1) #14-2 AWG	(1) #14-2/0 AWG	(1) #6-350 kcmil	(1) #6-600 kcmil	(1) #18-1/0 AWG	(1) #6-250 kcmil
Branch wire (Number of wires out)		(1) #14-2 AWG	(1) #14-2/0 AWG	(1) #6-350 kcmil	(1) #6-600 kcmil	(1) #18-1/0 AWG	(1) #6-250 kcmil
Maximum voltage rating		600	600	600	600	600	600
Maximum current rating—Cu wire		115	175	310	420	150	255
	1-pole	9080LBA161101	9080LBA162101	9080LBA163101	9080LBA164101	9080LBC162101	9080LBC163101
	2-pole	—	9080LBA262101	9080LBA263101	—	—	—
	3-pole	9080LBA361101	9080LBA362101	9080LBA363101	9080LBA364101	9080LBC362101	9080LBC363101

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Distribution Blocks		Aluminum Lugs					
Main wire (Number of wires in)		(1) #14-2 AWG	(1) #14-2/0 AWG	(1) #6-400 kcmil	(1) #6-400 kcmil	(1) #6-400 kcmil	(1) #4-500 kcmil
Branch wire (Number of wires out)		(4) #18-10 AWG	(4) #14-4 AWG	(4) #14-2 AWG	(6) #14-2 AWG	(8) #14-2 AWG	(12) #14-2 AWG
Maximum voltage rating		600	600	600	600	600	600
Maximum current rating—Cu wire		115	175	335	335	335	380
	1-pole	9080LBA161104	9080LBA162104	9080LBA163104	9080LBA163106	9080LBA164108	9080LBA165112
	2-pole	9080LBA261104	9080LBA262104	9080LBA263104	9080LBA263106	9080LBA264108	9080LBA265112
	3-pole	9080LBA361104	9080LBA362104	9080LBA363104	9080LBA363106	9080LBA364108	9080LBA365112

Advantys ABE7

Telefast® pre-wired system
Passive I/O sub-bases «Discrete»



Type of connection sub-base		Optimum			
Number of channels		16	16		
Max. current per channel		0.5 A	0.5 A		
Control voltage / output voltage		24 VDC / 24 VDC	24 VDC / 24 VDC		
LED per channel		–	With		
Number of terminals per channel/on row number		1/2	1/1	2/2	3/3
Dimensions W x D x H		55 x 59 x 67 mm	106 x 60 x 49 mm		
Catalog number		–	ABE7H16C11	ABE7H16C21	ABE7H16C31
	Cable L = 1 m	ABE7H20E100 (1)	–	–	–
	Cable L = 2 m	ABE7H20E200 (1)	–	–	–
	Cable L = 3 m	ABE7H20E300 (1)	–	–	–
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (2)		ABFH20H100			

(1) Connection cable supplied for PLCs
(2) For a 2 m length cable, replace the number 1 in the catalog number by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



7

Type of connection sub-base		Universal					
Number of channels		16					
Max. current per channel		0.5 A					
Control voltage / output voltage		24 VDC / 24 VDC					
LED per channel		–	With	–	–	With	With
Number of terminals per channel/on row number		1/1	1/1	1/2	2/2	2/2	3/3
Dimensions W x D x H		125 x 58 x 70 mm		84x58x70 mm	125 x 58 x 70 mm		
Catalog number		ABE7H16R10	ABE7H16R11	ABE7H16R50	ABE7H16R20	ABE7H16R21	ABE7H16R31

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (2)
(2) For a 2 m length cable, replace the number 1 in the catalog number by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



Type of connection sub-base		For counter and analog channels	Passive distribution with shielding continuity	Distribution and supply of analog channels
Number of channels		1 counter channel (3)	8	8
Max. current per channel		25 mA	25 mA	25 mA
Control voltage / output voltage		24 VDC / 24 VDC		
Number of terminals per channel		2	2 or 4	2 or 4
Dimensions WxDxH (mm/in)		143 x 58 x 70 mm	125 x 58 x 70 mm	125 x 58 x 70 mm
Catalog number		ABE7CPA01	ABE7CPA02	ABE7CPA03
Connection cable recommended for Modicon PLCs (4)	TSX Micro L=2.5m	TSXCCPS15	–	–
	Premium L=3m	TSXCAP030		

(3) Or 8 inputs + 2 outputs, analog.
(4) Connection cables available for other PLCs, please refer to your Schneider Electric agency.



Advantys ABE7

Sockets with plug-in relays and terminals



Type of connection sub-base	With soldered solid-state relay inputs		With soldered solid-state relay outputs		With soldered electro-mechanical relay outputs	
Number of channels	16		16		16	
Max. current per channel	12 mA		0.5 A		2 A	5 A
Input voltage / output voltage	24 VDC / - 110 VAC / -		- / 24 VDC		- / 5–30 VDC, 250 VAC	
Number of contacts	–		–		1 N/O	
Polarity distribution	–		–		(1)	Volt-free
Number of terminals per channel	2					
Dimensions W x D x H	206 x 58 x 77 mm					
Catalog number	ABE7S16E2B1	ABE7S16E2F0	ABE7S16S2B0(2)	ABE7S16S1B2	ABE7R16S111	ABE7R16S210
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: ABFH20H100 (3)						

- (1) Contact common per group of 8 channels.
- (2) With fault detection signal (can only be used with modules with protected outputs).
- (3) For a 2 m length cable, replace the number 1 in the catalog number by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



Type of connection sub-base	With plug-in electromechanical relays					
Number of channels	16					
Max. current per channel	5 A	2.5 A			4 A	5 A
Control voltage / output voltage	24 VDC / 5–24 VDC, 230 VAC					
Number of contacts	1 N/O			1 C/O	2 C/O	
Polarity distribution	(4)	(5)	Volt-free			
Number of terminals per channel	2	2 or 3			2 to 6	
Dimensions W x D x H	110x54x89mm	211 x 64 x 89 mm			272x74x89 mm	
Catalog number	ABE7R16T111	ABE7R16T212	ABE7R16T210	ABE7R16T230	ABE7R16T330	ABE7R16T370

- Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: ABFH20H100 (6)
- (4) Contact common per group of 4 channels.
- (5) Common on both poles.
- (6) For a 2 m length cable, replace the number 1 in the catalog number by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).

Connection cables for PLCs (7)



Input/Output Functions		Discrete	Analog	Analog and counter	Counter	Axis control
Catalog number	Cable L = 1 m	ABFH20H100	–	–	–	–
	Cable L = 2 m	ABFH20H200	ABFY25S200	–	–	TSXCXP213
	Cable L = 2.5 m	–	–	TSXCCPS15	TSXCCPH15	–
	Cable L = 3 m	ABFH20H300	TSXCAP030	–	–	–
	Cable L = 6 m	–	–	–	–	TSXCXP613

- (7) Modicon, TSX Micro and Premium PLCs.
- For other connection cables and accessories, please refer to your local Schneider Electric/Square D sales office.

Advantys ABE7

Telefast connection interfaces Sub-bases for Twido controllers



Type of connection sub-base	Discrete inputs/outputs			Solid-state and relay
Number of channels	20	20	20	20
Number of inputs	12 I (1 common for 12 channels)			
Number of outputs	8 O (1 common for 8 channels)	8 O, fuse protected (1 common for 8 channels)		2 O, solid-state 6 O, relay (1 common for 6 chnls.)
Voltage / current of inputs	24 VDC / 5–7 mA			
Voltage / current of outputs	24 VDC / 0.3 A			Solid-state: 24 VDC / 2 A Relay: 5–30 VDC, 250 VAC / 3 A
LED per channel	–	With		–
Number of terminals per channel/row number	2/2			
Dimensions W x D x H	130 x 62.5 x 83 mm			
Catalog number	ABE7B20MPN20	ABE7B20MPN22		ABE7B20MRM20

Sub-base for input/output module



Type of connection sub-base	Discrete outputs			Relay
Number of channels	16	16	16	16
Type of outputs	16 I (1 common for 16 channels)	16 O (1 common for 16 channels)	16 O, fuse protected (1 common for 16 channels)	16 O (1 common for 4 channels)
Voltage / current of outputs	24 VDC / 5 mA	24 VDC / 0.1 A		Relay: 5–30 VDC, 250 VAC / 3 A
LED per channel	–		With	–
Number of terminals per channel/row number	2/2			
Dimensions W x D x H	106 x 60 x 49 mm	130 x 62.5 x 83 mm		
Catalog number	ABE7E16EPN20	ABE7E16SPN20	ABE7E16SPN22	ABE7E16SRM20

Connection cables for Twido



Type of cable	For linking Twido and Telefast sub-base		
For use with	TWDLMDA20DTK/40DTK		
Type of connectors	HE10, 26-pin, at either end		
Catalog number	Cable	L = 0.5 m	ABFT26B050
		L = 1 m	ABFT26B100
		L = 2 m	ABFT26B200

Accessories

Type of accessory	Optional clip-in terminals	
Number of linked terminals	20	12 + 8
Catalog number	ABE7BV20	ABE7BV20TB



Passive splitter boxes **Advantys ABE9** IP67



Type of connection			To PLC using multicore cable	
Number of channels			4	8
Type of female connector			M12, 5-pin	M12, 5-pin
Max. number of signals			8	16
Max. current per channel			4 A	
Max. current per splitter box (supply wire size)			16 A (1 mm² / #18 AWG)	
Product certification			cULus	
Dimensions W x D x H			50.2 x 42 x 92.2 mm	50.2 x 42 x 149.2 mm
Catalog number	Without LEDs	Cable L = 5 m	ABE9C1240L05	ABE9C1280L05
		Cable L = 10 m	ABE9C1240L10	ABE9C1280L10
	With LEDs (1)	Cable L = 5 m	ABE9C1241L05	ABE9C1281L05
		Cable L = 10 m	ABE9C1241L10	ABE9C1281L10

(1) Green LED: power supply status, yellow LED: channel status.



Type of connection			To PLC using M23 connector	
Number of channels			4	8
Type of female connector			M12, 5-pin	M12, 5-pin
Max. number of signals			8	16
Max. current per channel			4 A	
Max. current per splitter box (supply wire size)			16 A (1 mm² / #18 AWG)	
Product certification			cULus	
Dimensions W x D x H			50.2 x 36.5 x 92.2 mm	50.2 x 36.5 x 149.2 mm
Catalog number	Without LEDs		ABE9C1240C23	ABE9C1280C23
	With LEDs (1)		ABE9C1241C23	ABE9C1281C23

(1) Green LED: power supply status, yellow LED: channel status.

Accessories



Type of accessory		Splitter boxes w/o cable		Terminal connectors		Sealing plugs
		Without LEDs	With LEDs	Cable L = 5 m	Cable L = 10 m	(sold in lots of 10)
Catalog number	4-channel	ABE9C1240M	ABE9C1241M	ABE9XCA1405	ABE9XCA1410	–
	8-channel	ABE9C1280M	ABE9C1281M	ABE9XCA1805	ABE9XCA1810	–
	for M12 connector	–	–	–	–	FTXCM12B

Advantys OTB

IP 20 distributed I/O, optimized block Interface modules



Discrete Type of bus		CANopen Fieldbus	Ethernet TCP/IP network	Modbus Serial network
Number of I/Os		20 I/O		
Number of inputs		12 inputs 24 VDC IEC type 1		
Number of outputs		6 relay outputs and 2 solid state 24 VDC outputs		
Connection method		Removable terminal block		
Number of I/O expansion modules (1)		7 discrete or analog input/output modules, or connection accessories		
Maximum I/O configuration		With interface module base: 132 with screw terminal I/O expansion; 244 with HE10 connector I/O expansion; up to 48 analog channels		
Supply voltage		24 VDC		
Counting	5 kHz	2 channels, 32 bits (0–4,294,967,295 points) dedicated discrete inputs -up counting/down counting with preset		
	20 kHz	2 channels, 32 bits (0–4,294,967,295 points) up/down counting, up counting, down counting, frequency meter		
Pulse generator, 7 kHz		2 PWM function channels (output with pulse width modulation) or PLS function (pulse generator output)		
Dimension W x D x H		55 x 7 0 x 90 mm		
Catalog number		OTB1C0DM9LP	OTB1E0DM9LP	OTB1S0DM9LP

(1) for the catalog numbers of discrete I/O and analog expansion modules, refer to the Twido or Advantys OTB catalogs

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Accessories

Type of accessory	Commoning modules	Documentation
Usage	For grouping input or output commons, max 8 A	User guides for hardware & software
Positioning	Inter-module (2)	–
Catalog number	OTB9ZZ61JP	FTXES00

(2) Commoning module not required to configure an island.



IP67 distributed I/O, optimized block Interface modules, plastic enclosure

Advantys FTB



Type of module		CANopen Fieldbus	DeviceNet Fieldbus	ProfiBus-DP Fieldbus	InterBus Fieldbus
Number of channels		8			
Type of female connector		M12, 5-pin			
Max. voltage / current of inputs		24 VDC type 2 (conforming to IEC 1131-2) / 200 mA			
Max. voltage / current of outputs		24 VDC / 1.6 A			
Max. current per splitter box		8 A			
Product certification		cULus			
Dimensions, W x D x H		63 x 50.5 x 220 mm			
Diagnostics	Splitter boxes	By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply			
	Channels	By LED for: I/O short-circuit + wire breakage fault + I/O fault			
Catalog number	16 inputs	FTB1CN16EP0	FTB1DN16EP0	FTB1DP16EP0	FTB1IB16EP1
	8 inputs/8 outputs	FTB1CN08E08SP0	FTB1DN08E08SP0	FTB1DP08E08SP0	FTB1IB08E08SP1
	12 inputs/4 outputs	FTB1CN12E04SP0	FTB1DN12E04SP0	FTB1DP12E04SP0	FTB1IB12E04SP1
	16 configurable inputs/outputs	FTB1CN16CP0	FTB1DN16CP0	FTB1DP16CP0	FTB1IB16CP1

Interface modules, metal enclosure



Type of module		CANopen	DeviceNet	ProfiBus-DP
Number of channels		8		
Type of female connector		M12, 5-pin		
Max. voltage / current of inputs		24 VDC type 2 (conforming to IEC 1131-2) / 200 mA		
Max. voltage / current of outputs		24 VDC / 1.6 A		
Max. current per splitter box		8 A		
Product certification		cULus		
Dimensions W x D x H		62.7 x 38.9 x 224.7 mm		
Diagnostics	Splitter boxes	By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply		
	Channels	By LED for: I/O short-circuit + wire breakage fault + I/O fault		
Catalog number	16 inputs	FTB1CN16EM0	FTB1DN16EM0	FTB1DP16EM0
	8 inputs/8 outputs/configurable outputs	FTB1CN08E08CM0	FTB1DN08E08CM0	FTB1DP08E08CM0
	16 configurable inputs/outputs	FTB1CN16CM0	FTB1DN16CM0	FTB1DP16CM0

Advantys STB

IP20 Distributed I/O, modular system Communication modules



Type of module NIM		EthernetTCP/IP network
Baud rate		10 Mbit/s
Protocol		Modbus TCP/IP
Transparent Ready	Class	B20
	Embedded Web server	Standard services
	Ethernet services	SNMP agent, FDR client (replacement of faulty equipment), BOOTP (allocation of IP addresses by a server)
Max. number of addressable I/O modules		32 per island
Dimensions W x D x H		40 x 70 x 128.3 mm
Catalog number	Standard	STBNIP2212



Type of module NIM		Fieldbus CANopen	Fieldbus Fipio	INTERBUS	Profibus DP
Max. number of addressable I/O modules		32 per island (1) (2)	32 per island (1)	32 per island (1) (2)	32 per island (1) (2)
Baud rate		10 Kbit/s-1 Mbit/s	1 Mbit/s	0.5 Mbit/s	9.6 K-12 Mbit/s
Dimensions W x D x H		40x70x128.3 mm			
Catalog number	Standard	STBNCO2212	STBNFP2212	STBNIB2212	STBNDP2212
	Basic	STBNCO1010	-	STBNIB1010	STBNDP1010

(1) On 7 segments max.

(2) 12 per island on 1 segment max for basic versions.



Type of module		Other networks		
		Modbus Plus	DeviceNet	
Max. number of addressable I/O modules		32 per island	32 per island	12 per island
Baud rate		1 Mbit/s	125, 250 or 500 Kbit/s	125, 250 or 500 Kbit/s
Dimensions W x D x H		40 x 70 x 128.3 mm		
Catalog number	Standard	STBNMP2212	STBNDN2212	-
	Basic	-	-	STBNDN1010

Connection accessories

Type of accessory		Removable terminals for 24 VDC power supply	DeviceNet
Use		All communication modules	Network link DeviceNet module
Catalog number	Screw terminals	STBXTS1120 (1)	STBXTS1111
	Spring terminals	STBXTS2120 (1)	STBXTS2111

(1) To be ordered separately, sold in lots of 10.

Connection accessories: See www.us.telemecanique.com



Advantys STB

Power distribution modules ⁽¹⁾



Type of module			PDM				Auxiliary Power supply
Connection by removable terminals			Screw STBXTS1130 (2) Spring STBXTS2130 (2)				Screw STBXTS1120 (2) Spring STBXTS2120 (2)
Supply voltage			24 VDC		115–230 VAC		24 VDC
Maximum current	Inputs		4 A at 30°C 2.5 A at 60°C	–	5 A at 30°C, 2.5 A at 60°C	–	–
	Outputs		8 A at 30°C, 5 A at 60°C	–	10 A at 30°C, 2.5 A at 60°C	–	–
	Inputs/Outputs		–	4 A at 30°C, 2.5 A at 60°C	–	5 A at 30°C, 2.5 A at 60°C	–
	Internal logic 5 VDC		–	–	–	–	1.2 A
Sensor/actuator bus voltage range			19.2–30 VDC		85–265 VAC		–
Dimensions W x D x H			18.4 x 70 x 128.3 mm				
Catalog number	Module	Standard	STBPDT3100	–	STBPDT2100	–	STBCPS2111
		Basic	–	STBPDT3105	–	STBPDT2105	
	Base		STBXBA2200		STBXBA2200		STBXBA2100

(1) Process power supplies see chapter 6 “Power supply.”

(2) To be ordered separately, sold in lots of 10.

Bus extension modules for standard range



Type of module			“EOS” End of segment	“BOS” Beginning of segment	Extension for CANopen connection devices
Connection by removable terminals			–	Screw STBXTS1120 (2) Spring STBXTS2120 (2)	Screw STBXTS1110 (3) Spring STBXTS2110 (3)
Use			For placing at end of segment (except for the last)	For placing at head of each extension segment	For placing at end of last segment
Dimensions W x D x H			18.4 x 70 x 128.3 mm		
Catalog number	Module	Standard	STBXBE1000	STBXBE1200	STBXBE2100
	Base		STBXBA2400	STBXBA2300	STBXBA2000

(2) To be ordered separately, sold in lots of 10.

(3) To be ordered separately, sold in lots of 20.

Software and memory card



Type	Advantys configuration software	Removable memory card
Use	Single station	–
Memory size	–	32 Kb
Catalog number	STBSPU1000	STBXMP4440 (4)

(4) Application backup memory for standard network interface modules only.

Connection accessories

Type of accessory	Island bus extension cable				
Length	0.3 m	1 m	4.5 m	10 m	14 m
Catalog number	STBXCA1001	STBXCA1002	STBXCA1003	STBXCA1004	STBXCA1006

Connection accessories: See www.us.telemecanique.com

Advantys STB

IP20 Distributed I/O, modular system
Discrete modules



Type of module			Discrete inputs				
Connection by removable terminals (1)			Screw STBXTS1100			Screw STBXTS1110	
			Spring STBXTS2100			Spring STBXTS2110	
Number of channels			2	4	6	2	
Input voltage			24 VDC			115 VAC	230 VAC
Dimensions W x D x H			13.9 x 70 x 128.3 mm			18.4 x 70 x 128.3 mm	
Catalog number	Module	Standard	STBDDI3230	STBDDI3420	STBDDI3610	STBD AI5230	STBD AI7220
		Basic	–	STBDDI3425	STBDDI3615	–	–
	Base		STBXBA1000				STBXBA2000

(1) To be ordered separately, sold in lots of 20.



Type of module			Discrete solid state outputs					
Connection by removable terminals (1)			Screw STBXTS1100 Spring STBXTS2100					
Number of channels			2		4		6	
Output voltage			24 VDC		24 VDC		24 VDC	
Output current			0.5 A 2 A		0.25 A 0.5 A		0.25 A 0.5 A	
Dimensions W x D x H			13.9 x 70 x 128.3 mm					
Catalog number	Module	Standard	STBDDO3200	STBDDO3230	–	STBDDO3410	–	STBDDO3600
		Basic	–	–	STBDDO3415	–	STBDDO3605	–
	Base		STBXBA1000					

(1) To be ordered separately, sold in lots of 20.



Type of module			Discrete outputs		
			Triac		Relay
Connection by removable terminals (1)			Screw STBXTS1110 Spring STBXTS2110		
Number of channels			2	2 NC/NO	2 NC+NO
Output voltage			115–230 VAC	24 VDC or 115–230 VAC	
Output current			2 A at 30°C, 1 A at 60°C	2 A per contact	7 A per contact
Dimensions W x D x H			18.4 x 70 x 128.3 mm		28.1 x 70 x 128.3 mm
Catalog number	Module	Standard	STBDAO8210	STBDRC3210	STBDRA3290
	Base		STBXBA2000		STBXBA3000

(1) To be ordered separately, sold in lots of 20.

Connection accessories: See www.us.telemecanique.com



Analog modules



Type of module (3)			Analog inputs					
Connection by removable terminals			Screw STBXTS1100 (1) / Spring STBXTS2100 (1)					
Number of channels			2					
Input signal			- 10 to +10 V		0 to +10 V	0–20 mA	4–20 mA	Multi-range (2)
Resolution			11 bits + sign	9 bits + sign	10 bits	12 bits	10 bits	15 bits + sign
Dimensions W x D x H			13.9 x 70 x 128.3 mm					
Catalog number	Module	Standard	STBAVI1270	–	–	STBACI1230	–	STBART0200
		Basic	–	STBAVI1275	STBAVI1255	–	STBACI1225	–
	Base		STBXBA1000					

(1) To be ordered separately, sold in lots of 20.
(2) Thermocouple B, E, J, K, R, S, T. Thermal probe Pt 100, Pt 1000, Ni 100, Ni 1000, Cu 10, ± 80 mV.



Type of module (3)			Analog outputs				
Connection by removable terminals			Screw STBXTS1100 (1) / Spring STBXTS2100 (1)				
Number of channels			2				
Output signal			- 0 to +10 V, - 10 to +10 V	0 to +10 V	-10 V to +10 V	0–20 mA	4–20 mA
Resolution			11 bits + sign or 12 bits	10 bits	9 bits + sign	12 bits	10 bits
Dimensions W x D x H			13.9 x 70 x 128.3 mm				
Catalog number	Module	Standard	STBAVO1250	–	–	STBACO1210	–
		Basic	–	STB AVO1255	STB AVO1265	–	STBACO1225
	Base		STBXBA1000				

(1) To be ordered separately, sold in lots of 20.

Application-specific modules



Type of module (3)			For motor starters		Counter (1)
			Tego Power	TeSys model U	
Connection by connector			1 HE10 (30 contacts)	4 RJ45	Spring STBXTS2150 (2)
Number of inputs/outputs			16 I / 8 O	12 I / 8 O	4 I / 2 O
Input voltage			24 VDC		24 VDC
Output voltage/current			24 VDC / 0.1 A per channel		24 VDC / 0.5 A
Number of channels			8 non reversing motor starters	4 starters-controllers	1 counter channel 40 kHz
Dimensions W x D x H			18.4 x 70 x 128.3 mm	28.1 x 70 x 128.3 mm	
Catalog number	Module	Standard	STBEPI1145	STBEPI2145	STBEHC3020
	Base		STBXBA2000	STBXBA3000	
	Connection cables		STBXCA3002 (L= 1 m)	490NTW00002 (L= 2 m)	–
			STBXCA3003 (L= 2 m)	490NTW00005 (L= 5 m)	–

(1) For 2/3-wire PNP/NPN 24 VDC sensors, 24 VDC incremental encoders, mechanical contacts.
(2) To be ordered separately.
(3) Required grounding kit (conseilled for counter<40 kHz): STBXSP3000 (connecting support) + STBXSP3010 (1.5–6 mm² terminals) + STBXSP3020 terminals).
Connection accessories: See www.us.telemecanique.com

Advantys FTM

IP67 distributed I/O, modular system

Interface modules



Type of bus module	CANopen Fieldbus	DeviceNet fieldbus	Profibus fieldbus
Max. number of Discrete I/O	256		
Max. number of splitter boxes	16		
Bus module supply voltage	24 V DC		
Bus module max. supply current	9 A		
Product certification	UL/CSA		CULus
Dimensions W x D x H	50 x 50.3 x 151 mm		
Catalog number	FTM1CN10	FTM1DN10	FTM1DP10

Splitter boxes



Type of splitter box		Discrete inputs/outputs			
		Compact		Expandable	
Input voltage		24 V DC / type 2 (conforming to IEC 1131-2) / 200 mA		24 V DC / type 2 (conforming to IEC 1131-2) / 200 mA	
Output voltage		24 V DC		24 V DC	
Type of output		Solid-state		Solid-state	
Output current		0.5 A		0.5 A	
Maximum supply current by internal bus		4 A		4 A	
Diagnostics		Short-circuit on I/O, wire breakage fault, sensor/actuator fault			
Dimensions W x D x H		30 x 34.5 x 126 mm		30 x 34.5 x 151 mm	
I/O connection		M8 connector	M12 connector	M8 connector	M12 connector
Catalog number	8 inputs	FTM1DE08C08	FTM1DE08C12	FTM1DE08C08E	FTM1DE08C12E
	8 configurable inputs/outputs	FTM1DD08C08	FTM1DD08C12	FTM1DD08C08E	FTM1DD08C12E
	16 inputs	–	FTM1DE16C12 (1)	–	FTM1DE16C12E (1)
	16 configurable inputs/outputs	–	FTM1DD16C12 (1)	–	FTM1DD16C12E (1)

(1) Dimensions: 50 x 34.5 x 126 mm.



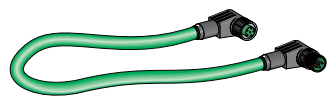
Type of splitter box		Analog inputs/outputs			
		Compact			
Type of inputs/outputs		Current		Voltage	
Measuring range		0–20 mA / 4–20 mA		± 10 V DC / 0–10 V DC	
Diagnostics		Short-circuit on I/O, wire breakage fault, sensor/actuator fault			
Conversion time		- 2 ms per channel			
Dimensions W x D x H		30 x 34.5 x 126 mm			
Resolution		16 bit	12 bit	15 bit + sign	11 bit + sign
Catalog number	4 inputs	FTM1AE04C12C	–	FTM1AE04C12T	–
	4 outputs	–	FTM1AS04C12C	–	FTM1AS04C12T



Accessories for distributed I/O FTM⁽¹⁾

Advantys FTM

Internal bus connection cables



(1) For sensor/actuator cabling accessories, see page 8/8.

Type of cable			For linking bus module and splitter boxes
Type of connector			Elbowed M12, 6-pin, at either end
Catalog number	Cable	L = 0.3 m	FTXCB3203
		L = 0.6 m	FTXCB3206
		L = 1 m	FTXCB3210
		L = 2 m	FTXCB3220
		L = 3 m	FTXCB3230
		L = 5 m	FTXCB3250

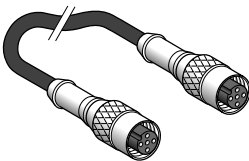
Auxiliary power supply connection cables



Type of cable			For connection of 24 V DC auxiliary power supply	
Type of connector			Elbowed M12, 6-pin, at either end	Elbowed M12, 6-pin, at one end (other end free)
Catalog number	Cable	L = 0.3 m	FTXCA3203	FTXCA3103
		L = 0.6 m	FTXCA3206	FTXCA3106
		L = 1 m	FTXCA3210	FTXCA3110
		L = 2 m	FTXCA3220	FTXCA3120
		L = 3 m	FTXCA3230	FTXCA3130
		L = 5 m	FTXCA3250	FTXCA3150

Accessories

Type		Line terminator for end of internal bus
Type of connector		M12
Catalog number		FTXCBTL12



(1) For sensor and actuator cabling accessories:
see page 8/8.

Type of bus			CANopen fieldbus	DeviceNet fieldbus	ProfiBus fieldbus	INTERBUS fieldbus
Type of female connector			M12, 5-pin, at either end			–
Connector coding			A encoded			–
Catalog number	Cable	L = 0.3 m	FTXCN3203		FTXDP3203	–
		L = 0.6 m	FTXCN3206		FTXDP3206	FTXIB1206 (2)
		L = 1 m	FTXCN3210		FTXDP3210	FTXIB1210 (2)
		L = 2 m	FTXCN3220		FTXDP3220	FTXIB1220 (2)
		L = 3 m	FTXCN3230		FTXDP3230	–
		L = 5 m	FTXCN3250		FTXDP3250	FTXIB1250 (2)

(2) Catalog number includes the Bus connection cable + the power supply cable.

Power supply connection cables



Type of bus			CANopen fieldbus	DeviceNet fieldbus	ProfiBus fieldbus
Type of female connector			Type 7/8, 5-pin, at either end		
Catalog number	Cable	L = 0.6 m	FTXDP2206		
		L = 1 m	FTXDP2210		
		L = 2 m	FTXDP2220		
		L = 5 m	FTXDP2250		
Type of female connector			Type 7/8, 5-pin, at one end (other end free)		
Catalog number	Cable	L = 1.5 m	FTXDP2115		
		L = 3 m	FTXDP2130		
		L = 5 m	FTXDP2150		

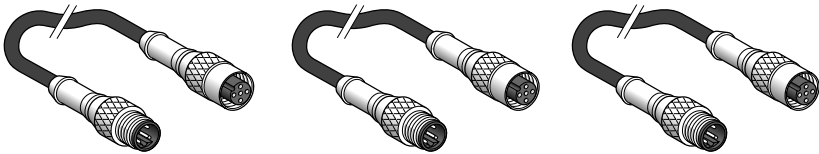
Accessories

Type of bus			CANopen fieldbus	DeviceNet fieldbus	ProfiBus fieldbus	INTERBUS fieldbus
Catalog number	Configuration CD-ROM		FTXES00			
	Diagnostics M12 adaptor		FTXDG12			
	Power supply T-connector		FTXCNCT1			–
	Line terminator		FTXCNTL12		FTXDPTL12	–

Accessories for sensors/actuators

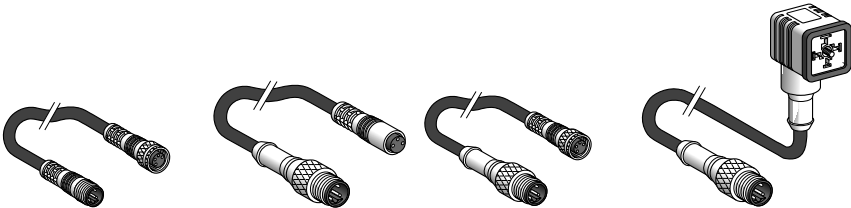
M12 / M12 jumper cables

Advantys



Type			Male / Female jumper cables		
Type of male connector, interface side			M12, 3-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Type of female connector, sensor side			M12, 3-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Cable			PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
		L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

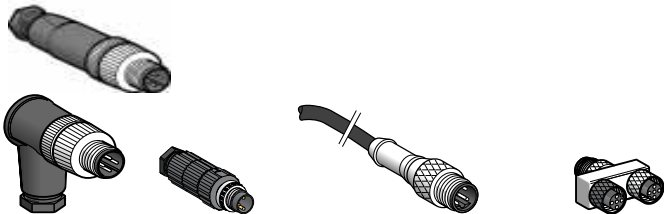
M8/M8, M8/M12 and M12/DIN jumper cables



Type			Male / Female jumper cables			
Type of male connector, interface side			M8, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread
Type of female connector, sensor side			M8, 3-pin straight, screw thread	M8, 3-pin straight, clip together	M8, 3-pin straight, screw thread	DIN 43650A elbowed, screw thread
Cable			PUR, black	PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m	XZCR2705037R1	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
		L = 2 m	XZCR2705037R2	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

7

Pre-wired connectors and splitter box



Type			Connectors		Pre-wired connectors	Splitter box "Y"	
Type of male connector, interface side			M12, 4-pin	M8, 3-pin	M12, 5-pin, straight, screw thread	1 x M12	1 x M12
Type of female connector, sensor side			–	–	–	2 x M12	2 x M8
Cable			–	–	PUR, black	–	–
Catalog number	Straight connector, screw thread		XZCC12MDM40B	XZCC8MDM30V	–	FTXCY1212	FTXCY1208
	Elbowed connector, screw thread		XZCC12MCM40B	–	–	–	–
	Cable	L = 0.5 m	–	–	XZCP1564L05	–	–
		L = 2 m	–	–	XZCP1564L2	–	–

AS-Interface cabling system

The essential guide

A simplified selection guide enabling you to quickly select all the necessary products and accessories to build your installation.

The cabling system that meets your needs for industrial automation systems

AS-Interface With the “Smart Cable” opt for:



(Actuator Sensor Interface)

b Simplicity

A quick and expandable cabling system:

- > Only 1 bus cable for connecting all the components of an automation system
- > Management of communications integrated in the products

b Maximum security

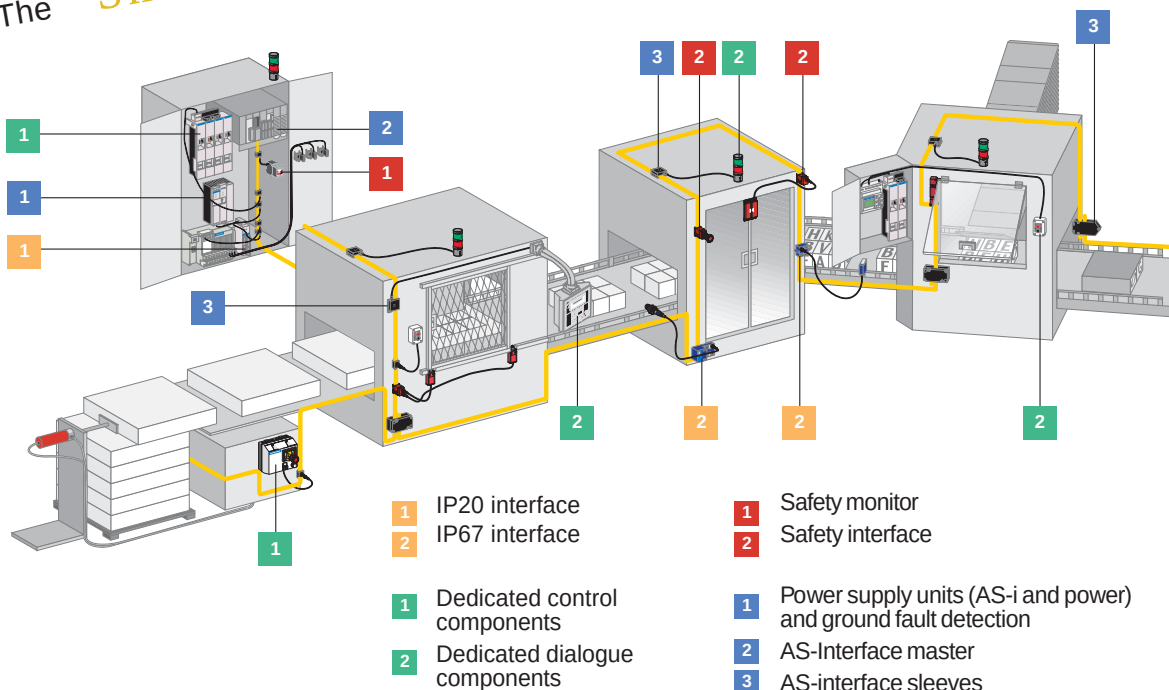
AS-Interface significantly improves the reliability, availability and safety of your machine:

- > Wiring errors are eliminated
- > Risk of electrical connection failure greatly reduced
- > High immunity to electromagnetic interference (EMC)
- > The machine's safety function is fully integrated with AS-Interface Safety at Work.

b Up to 40% savings in costs

- > Savings in time for design, installation, setting-up and commissioning
- > Savings in space required in enclosures due to smaller products and elimination of intermediate boxes
- > Control wiring and the need for cable trays are reduced if not eliminated

The “Smart Cable”



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b IP20 interfaces



b IP67 interfaces



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b For control



b For operator interface



Safety solutions

(see Chapter 9 “Machine safety”)

b Safety monitors



b Safety interfaces



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b Master modules, power supply units



b Cables, repeaters



b Accessories



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b Adjustment and addressing terminals



AS-Interface

Advantys interfaces for generic products IP20 for mounting in enclosure



Modular interface, width 25 mm V2.1 with standard addressing	Analog		Digital		
Number of inputs	2 (0–10V)	2 (0/4–20mA)	4	4	4 isolated
Number of outputs	–	–	4 relay, 2A	4 solid state, 0.5A	4 solid state, 0.5A
Type of addressing	Standard				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.)				–
Supply by 24 VDC external source (black AUX cable)	–	–	–	Outputs	(2)
AS-Interface profile e (I/O code, ID code, ID1, ID2)	S.7.3.F.D	S.7.3.F.D	S.7.0.F.E	S.7.0.F.E	S.7.0.F.E
Maximum consumption from AS-Interface (excluding sensor supply)	60 mA	60 mA	110 mA	50 mA	20 mA
Dimensions W x D x H	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm
Catalog number	ASI20MA2VU	ASI20MA2VI	ASI20MT4I4OR	ASI20MT4I4OS	ASI20MT4I4OSA
Accessory (1) for connection to flat cables	XZCG0122	XZCG0122	XZCG0122	ASIDCPFIL20	ASIDCPFIL20

(1) Or direct screw terminal connection (without accessory), (other accessories, see page 8/9).

(2) Inputs, outputs and sensor supply (200 mA max.).



Modular interface, width 25 mm V2.1 with extended (A/B) addressing	Digital				
Number of inputs	4	2	4	4	4 isolated
Number of outputs	–	1 triac, 2A	3 relay, 2A	3 solid state, 0.5A	3 solid state, 0.5A
Type of addressing	Extended (A/B)				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.) (3)				–
Supply by 24 VDC external source (black AUX cable)	–	–	–	Outputs	(2)
AS-Interface profile (I/O code, ID code, ID1, ID2)	S.0.A.7.0	S.3.A.7.0	S.7.A.7.0	S.7.A.7.0	S.7.A.7.0
Maximum consumption from AS-Interface (excluding sensor supply)	50 mA	40 mA	90 mA	50 mA	20 mA
Dimensions W x D x H	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm	25 x 77 x 87 mm
Catalog number	ASI20MT4IE	ASI20MT2I1OTE	ASI20MT4I3ORE	ASI20MT4I3OSE	ASI20MT4I3OSAE
Accessory (1) for connection to flat cables	XZCG0122	XZCG0122	XZCG0122	ASIDCPFIL20	ASIDCPFIL20

(1) Or direct screw terminal connection (without accessory), (other accessories, see page 8/9).

(2) Inputs, outputs and sensor supply (200 mA max.).

(3) Except ASI20MT4I3ORE (170 mA max.).



AS-Interface

IP67 for mounting on machine



Interface			Digital					
V2.1 with extended (A/B) addressing								
Number of inputs			4	2	–	4	4	4
Input cabling			Standard (1 x M12 input)				Dual "Y" (2 x M12 inputs)	
Number of outputs			–	2 solid-state, 2A	3 solid-state, 2A	3 solid-state, 2A	–	3 solid-state, 2A
Type of addressing			Extended (A/B)					
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA)					
Supply by 24 VDC external source (black AUX cable)			–	Outputs	–	Outputs	–	Outputs
AS-Interface profile (I/O code, ID code, ID1, ID2)			S.0.A.7.0	S.B.A.7.0	S.8.A.7.0	S.7.A.7.0	S.0.A.7.2	S.7.A.7.E
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	18 mA	48 mA	45 mA	48 mA
Dimensions W x D x H			45 x 42 x 80 mm	45 x 42 x 80 mm	45 x 42 x 80 mm	60 x 30.5 x 151 mm	45 x 42 x 80 mm	60 x 30.5 x 151 mm
Connection	IDC	Interface	ASI67FFP40E	ASI67FFP22E	ASI67FFP03E	ASI67FFP43E	ASI67FFP40EY	ASI67FFP43EY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB01 (1)	ASI67FFB03
		M12connector Interface+Connection base (2)	ASI67FMP22E	ASI67FMP03E	ASI67FMP43E	ASI67FMP40EY	ASI67FMP43EY	

(1) A connection base with mounting holes that are compatible with the ASIB4VM12 connection base is available. Catalog number **ASI67FFB02**.

(2) Interfaces with integrated connection base. These do not require a separate connection base.



Interface			Digital				
V2.1 with standard addressing							
Number of inputs			4	2	–	4	4
Input cabling			Standard (1 x M12 input)				Dual "Y" (2 x M12 inputs)
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A
Type of addressing			Standard				
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA)				
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs	Outputs
AS-Interface profile (I/O code, ID code, ID1, ID2)			S.0.0.F.E	S.3.0.F.E	S.8.0.F.E	S.7.0.F.E	S.7.1.F.E
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA	49 mA
Dimensions W x D x H			45 x 42 x 80 mm	45 x 42 x 80 mm	45 x 42 x 80 mm	60 x 30.5 x 151 mm	60 x 30.5 x 151 mm
Connection	IDC	Interface	ASI67FFP40D	ASI67FFP22D	ASI67FFP04D	ASI67FFP44D	ASI67FFP44DY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB03
		M12connector Interface+Connection base (2)	ASI67FMP40D	ASI67FMP22D	ASI67FMP04D	ASI67FMP44D	ASI67FMP44DY

(1) A connection base with mounting holes that are compatible with the ASIB4VM12 connection base is available. Catalog number **ASI67FFB02**.

(2) Interfaces with integrated connection base. These do not require a separate connection base.



Interface			Digital			
V2.1 (V1 compatible) with standard addressing						
Number of inputs			4	2	–	4
Input cabling			Standard (1 x M12 input)			
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A
Type of addressing			Standard			
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA)			
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs
AS-Interface profile (I/O code, ID code, ID1, ID2)			S.0.0.F.F	S.3.0.F.F	S.8.0.F.F	S.7.0.F.F
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA
Dimensions W x D x H			45 x 42 x 80 mm	45 x 42 x 80 mm	45 x 42 x 80 mm	60 x 30.5 x 151 mm
Connection	IDC	Interface	ASI67FFP40A	ASI67FFP22A	ASI67FFP04A	ASI67FFP44A
		Standard connection base	ASI67FFB01	ASI67FFB01	ASI67FFB01	ASI67FFB01

AS-Interface

Dedicated components
For control



Starter in metal enclosure V1		Control by Black rotary knob (blue bkgnd.)	Push buttons
Type of addressing		Standard	Standard
Supply by AS-Interface		Inputs, sensor supply (2)	
Supply by 24 VDC external source (black AUX cable)		(1)	(1)
AS-Interface profile (I/O code, ID code, ID1, ID2)		S.7.D	S.7.D
Maximum consumption from AS-Interface	120 mA	120 mA	
Dimensions	W x D x H	175 x 175 x 195 mm	175 x 175 x 195 mm
Catalog number (2)		LF1MPppD	LF1MM ppD
(see table below)		LF2MPppD	LF2MM ppD
		Non reversing	
		Reversing	

Connection to AS-Interface and external supply (AUX) by accessory for flat cable: **ASIDCPM12D03** (AS-Interface and AUX cables) or **XZCG01205D** (AS-Interface cable).

- (1) Contactors supplied by AS-Interface or external source, configurable directly on terminal block.
- (2) To complete the catalog number, replace **pp** by the numbers indicated in the table below. (Example: LF1MP**pp**D becomes LF1MP**00**D).

kW	A	p p	kW	A	p p
–	without MCB	00	0.75	1.6–2.5	07
0.06	0.16–0.25	02	1.1 / 1.5	2.5–4	08
0.09	0.25–0.40	03	2.2	4–6.3	10
0.12 / 0.18	0.40–0.63	04	3 / 4	6–10	14
0.25	0.63–1	05	5.5	9–14	16
0.37/ 0.55	1–1.6	06			

kW= Motor power ratings in category AC-3, 400/415V, in kilowatts.

A= Adjustable range of circuit-breaker thermal trips, in amperes.

8



Communication interface for	TeSys Model U V2.1	Tego Power V1
Type of addressing	Standard	Standard 2 addresses
Supply by AS-Interface	–	–
Supply by external source (AUX)	Coil	Contactors
AS-Interface profile	S.7.D.F.0	S.7.0
Maximum consumption from AS-Interface	30 mA	< 280 mA x 2
Dimensions	W x D x H	35 x 129 x 254 mm
Catalog number	ASILUFC5	APP1CAS2
Recommended accessory for connection to AS-Interface cable (4)	ASIDCPFIL20	ASIDCPFIL20

- (4) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 8/9).



AS-Interface

For operator interface



Keypads and Control stations V2.1	Control stations with 2 push buttons		
	Non-Illuminated Black and white	Green and red	Illuminated
Type of addressing	Standard	Standard	
Supply by AS-Interface	Buttons	Buttons	Buttons and pilot lights
Supply by external source (AUX)	–	–	–
AS-Interface profile	S.3.F	S.3.F	S.3.F
Consumption from AS-Interface	< 40 mA	< 40 mA	< 80 mA
Dimensions W x D x H	68 x 62 x128 mm	68 x 62 x128 mm	68 x 68 x128 mm
Catalog number	XALS2001E	XALS2002E	XALS2003E
Recommended accessory for connection to AS-Interface cable (4)	ASIDCPM12D03		ASIDCPM12D03

(4) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 8/9).



Interface V2.1	For 2 control units and 2 pilot lights
Nmber of pages available	–
Number of inputs	2
Number of outputs	2 solid state, 0.5A
Type of addressing	Standard
Supply by AS-Interface	Inputs and pilot lights
AS-Interface profile	S.3.F
Maximum consumption from AS-Interface	80 mA
Dimensions W x D x H	52 x 15 x 38 mm
Catalog number	XALSZ1E

Direct screw terminal connection to AS-Interface or by accessory for flat cable: XZCG0122, (other accessories, see page 8/9).



8

Indicator banks, Ø 70 mm (7) V1	Base units and cover		Illuminated units		Audible unit
			"Flashing" dischargetube	Steady light	
Type of addressing	Standard	Standard	–	–	–
Connection to AS-Interface cable and AUX (male M12 connector)	Side entry	Bottom entry w/ 1 m flying lead	–		
Supply by AS-Interface	(5)	(5)	–	–	–
Supply by external source (AUX)	(5)	(5)	–	–	–
AS-Interface profile	S.8.F	S.8.F	–	–	–
Consumption from AS-Interface, supply by AS-Interface / external	250 / 30 mA	250 / 30 mA	–	–	–
Light source	–	–	5 Joule	LED	–
Buzzer	–	–	–	–	70–80 db at 1m
Catalog number	XVBC21A	XVBC21B	XVBC6Bp (6)	XVBC2Bp (6)	XVBC9B
Recommended accessory for connection to AS-Interface cable & AUX	ASIDCPM12D03	XZCG0120	–	–	–

(5) Illuminated units supplied by AS-Interface or externally, configurable by shunt.

(6) To complete the catalog number, replace the **p** by the following number designating the color: green: 3, red: 4, orange: 5, blue: 6, clear: 7, yellow: 8.

(7) To obtain a complete indicator bank, order a base unit + the illuminated or audible units (5 units maximum).

AS-Interface

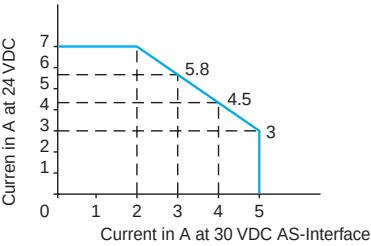
Installation system
Master modules



Platform	Twido	Premium	Micro	Quantum
Maximum number of master modules per PLC	2	2, 4 or 8 depending on processor	1	8 (1)
Compatibility with AS-Interface interfaces and components	V1 /V2.1	V1 /V2.1	V1	V1
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block
Maximum number of addresses	62	62	31	31
Type of addressing	Standard/Extended (A/B)	Standard/Extended (A/B)	Standard	Standard
Compatibility with analog interfaces	Yes	Yes	–	–
Compatibility with safety interfaces	Yes	Yes	Yes	Yes
AS-Interface profile	M.3	M.2.E	M.2	M.2
Catalog number	TWDNOI10M3	TSXSAY1000	TSXSAZ10	140EIA92100

(1) 4 per local rack, 4 per remote I/O, 2 per distributed I/O.

Power supply units



Type of supply	AS-Interface		AS-Interface + Auxiliary	
Input voltage	100–240 VAC	100–240 VAC	100–240 VAC	100–120 & 200–240 VAC
AS-Interface output voltage	30 VDC	30 VDC	30 VDC	30 VDC
Auxiliary output voltage	–	–	24 VDC	24 VDC
AS-Interface nominal power	73 W	146 W	73 W	61-153 W
Auxiliary nominal power	–	–	72 W	72-168 W
AS-Interface nominal current	2.4 A	4.8 A	2.4 A	5 A (2)
AUX nominal current	–	–	3 A	7 A (2)
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block
Dimensions W x D x H	54 x 120 x 1 20 mm	81 x 120 x 120 mm	81 x 120 x 120 mm	225 x 135 x 151.5 mm
Catalog number	without ground fault detection	ASIABL3002	ASIABL3004	ASIABLM3024
	with ground fault detection	ASIABLD3002	ASIABLD3004	–

(2) Power supply unit with constant maximum output, see curve above.



AS-Interface

Cables and repeater



Type			Yellow AS-Interface cable	Black Auxiliary cable	Repeater (4)
Wire size (gauge)			1 X 5 mm ² (# 16 AWG)	1 X 5 mm ² (# 16 AWG)	–
Catalog number	Cable	L = 20 m	XZCB10201 (3)	XZCB10202 (3)	–
		L = 50 m	XZCB10501 (3)	XZCB10502 (3)	–
		L = 100 m	XZCB11001 (3)	XZCB11002 (3)	–
Catalog number of repeater			–	–	ASIRPT01

(3) Standard cable. For TPE cable (oil and vapor resistant) add the letter **H** to the end of the catalog number, example: XZCB10201 becomes **XZCB10201H**.
(4) Enables an AS-Interface network to be extended by 100 m. Direct connection to the AS-Interface yellow cable by IDC.

Tap-offs for flat cable

(For connecting interfaces and components)



Connection to cable by IDC			AS-Interface IP54		AS-Interface + Auxiliary IP67	
Cable extremity			M12 connector (5)	Bare wires (6)	M12 connector (5)	Bare wires (7)
Catalog number	Cable	L = 0.3 m	–	–	ASIDCPM12D03	–
		L = 0.6 m	XZCG01205D	–	–	–
		L = 1 m	XZCG0121D	–	–	–
		L = 2 m	–	XZCG0122	ASIDCPM12D20	ASIDCPFIL20
		L = 5 m	–	–	–	ASIDCPFIL50

(5) Female 5-pin M12 end connector, screw threaded for connection with M12 male connector.
(6) #22 AWG for product with terminal block.
(7) #22 AWG for product with terminal block.

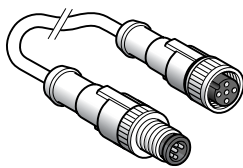


Connection to cable by IDC			AS-Interface	2 AS-Interface or 2 Auxiliary
Tap-off			1 x M12 connector 5-pin female, screw threaded	1 flat cable
Catalog number	Tap-off		XZCG0120	–
	IDC connection base		–	XZSDE1113
	Cover		–	XZSDP (8)

(8) For the complete product, include the connection base.

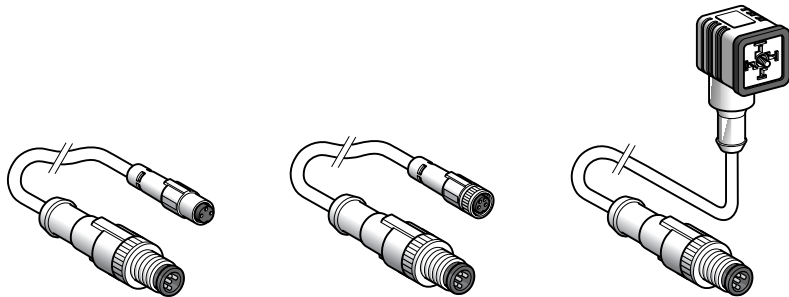
AS-Interface

Installation system
Jumper cables M12 / M12



Type			Male / Female jumper cable		
Male connector type, interface side			M12, 3-pin, straight, screw thread.	M12, 4-pin, straight, screw thread.	M12, 5-pin, straight, screw thread.
Female connector type, sensor side			M12, 3-pin, straight, screw thread.	M12, 4-pin, straight, screw thread.	M12, 5-pin, straight, screw thread.
Cable			PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
		L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

Jumper cables M12 / M8 or DIN

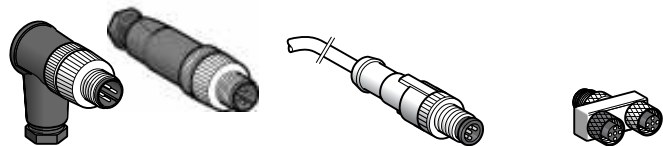


Type			Male / Female jumper cable		
Male connector type, interface side			M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.
Female connector type, sensor side			M8, 3-pin, straight (1)	M8, 3-pin, straight, screw thread.	DIN 43650A, elbowed, screw thrd.
Cable			PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
		L = 2 m	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

(1) Clip together connector.

8

Connectors, splitter box



Type		Connectors	Pre-wired connectors	Splitter box
Male connector type, interface side		M12, 4-pin	M12, 5-pin, straight, screw thread.	1 x M12, 5-pin, straight, screw thrd.
Female connector type, sensor side		–	–	2 x M12, 5-pin, straight, screw thrd.
Cable		–	PUR, black	–
Catalog number	Straight connector, screw thread.	XZCC12MDM40B	–	FTXCY1212
	Elbowed connector, screw thread.	XZCC12MCM40B	–	–
	Cable L = 0.5 m	–	XZCP1564L05	–
	Cable L = 2 m	–	XZCP1564L2	–



Tools

AS-Interface

Adjustment and addressing terminals



Display	25 mm LCD screen	13 mm LCD screen
Degree of protection	IP40	IP20
AS-Interface voltage / current measurement	yes	no
Addresses stored in memory	yes	no
Access to functions	direct by selector switch	by pull-down menu
Compatibility	V1/V2	V1/V2
Operating time	2500 addressing operations	250 read/write operations
Catalog number	ASITERV2	XZMC11
Catalog number with set of 7 leads + protective cover for terminal	ASITERV2SET	-

Addressing accessories for terminals ASITERV2

and XZMC11



Product connection	Infrared addressing	Socket
For products	ASISL-	ABE8- / APP1 / ASILUF- / XBZS43 / ASI20M
Catalog number	ASITERIR1	XZMG12



Product connection	M12, male	M12, female	Jack plug
For products	(2)	ASI67FMP XVB- / XAL- / LF-	ASI20M- / ASI67FFP-
Catalog number	ASITERACC1M	ASITERACC1F	ASITERACC

(2) Possibility to connect AS-Interface cable using T connector XZCG0120.

Machine safety

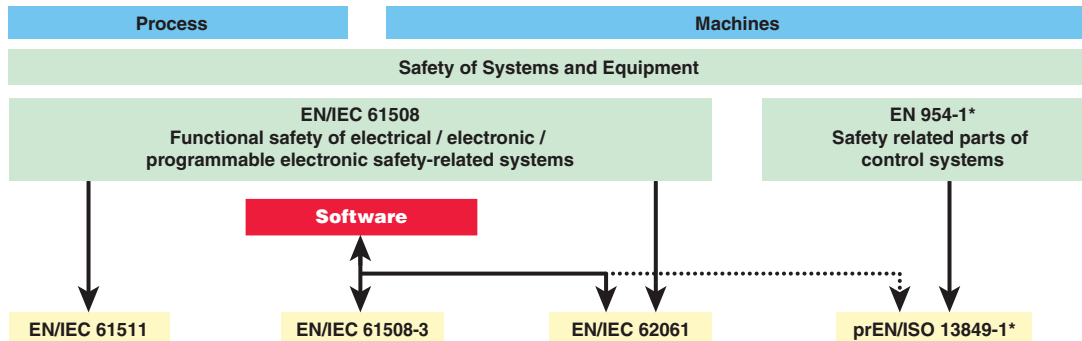
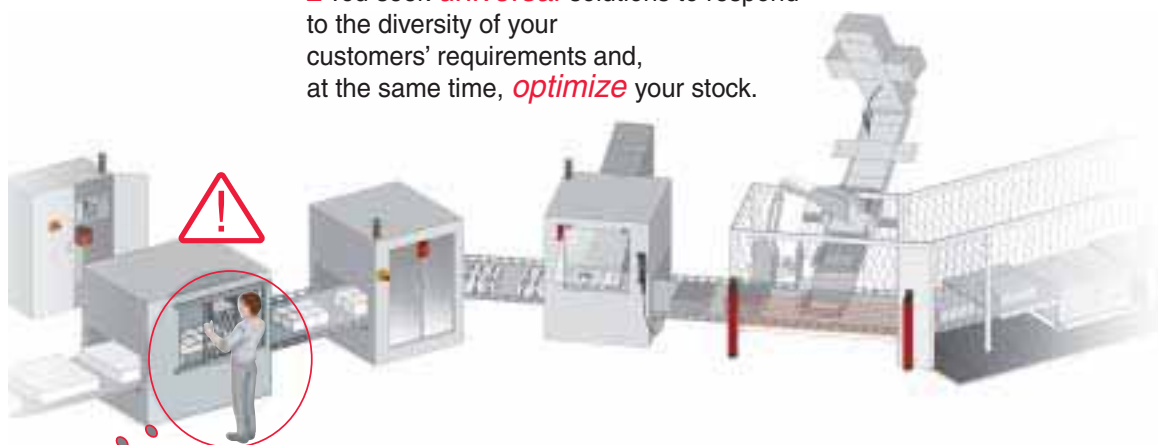
Safety solutions using Preventa for better protection

Preventa

Ingenious and innovative, Preventa safety solutions provide maximum protection for all the safety functions of your automation system.

Select Preventa:

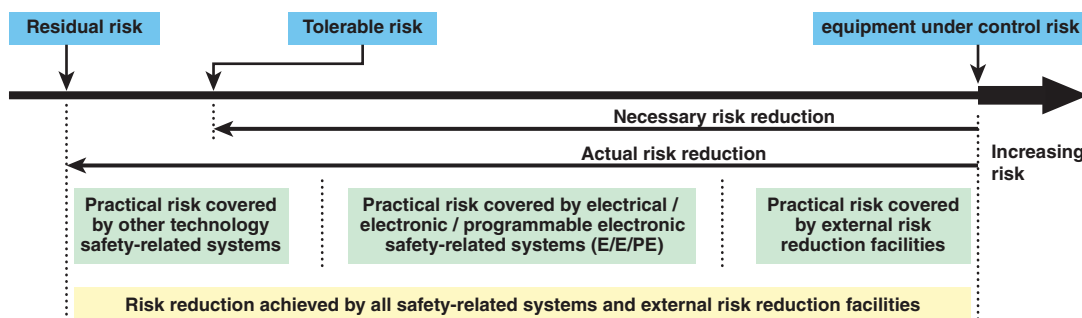
- To export your machines to any location in the world, you expect solutions that are both *approved* and *conform* to international standards.
- To maintain productivity, you need solutions *quickly* to assist you, irrespective of the circumstances.
- You seek *universal* solutions to respond to the diversity of your customers' requirements and, at the same time, *optimize* your stock.



Functional Safety and Safety Integrity Level (SIL)

Risk reduction according to EN/IEC 61508

- **Safety** is achieved by risk reduction (for those hazards that cannot be designed-out).
- **Residual risk** is the risk remaining after protective measures have been taken.
- **Protective measures** realized by E/E/PE safety related systems contribute to risk reduction.



Since a perfect safety system does not exist, the latest standards relating to functional safety and voluntary application provide new risk management methods to be used from the design stage by applying principles such as the safety integrity level (SIL) as well as extensively using established operating safety concepts.

Safety of Machinery: * prEN/ISO 13849-1, definition of MTTF_d

* standard project in process

■ Instead of a failure rate per hour (λ), prEN/ISO 13849-1 uses the mean time to failure (MTTF) as the parameter for the probability of failures.

● **MTTF = mean time to failure** [years]

- The mean time after installation of devices to any first failure.
- The relation between λ and MTTF is:

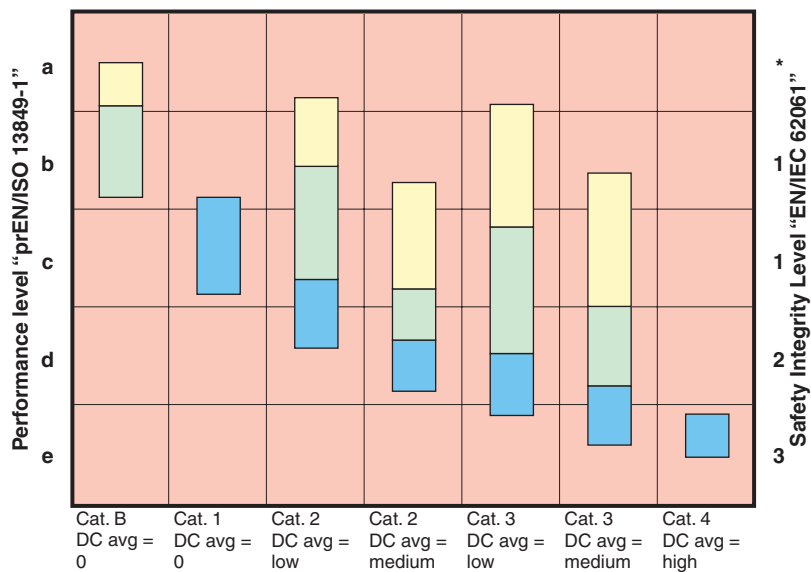
$$\text{MTTF} = 1/\lambda$$

● **MTBF = mean time between failures**

- Not relevant for devices which are not repaired.

● **MTTF_d = mean time to dangerous failure**

- The MTTF_d is defined in prEN/ISO 13849-1 as the expectation of the mean time to dangerous failure of a safety related part of a control system.



DC = Diagnostic Coverage —
The rate of the probability of the detected dangerous failures to the probability of total dangerous failures.

- MTTF_d of each channel = low
- MTTF_d of each channel = medium
- MTTF_d of each channel = high

Safety of Machinery: * prEN/ISO 13849-1 Risk graph and parameters

* standard project in process

S = Severity of injury

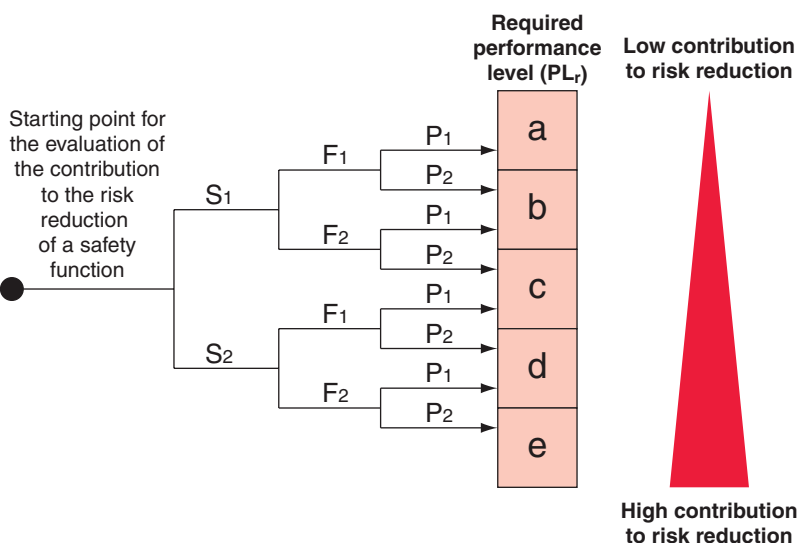
- S1 = Slight (normally reversible injury)
- S2 = Serious (normally irreversible) injury including death

F = Frequency and/or exposure time to the hazard

- F1 = Seldom to less often and/or the exposure time is short
- F2 = Frequent to continuous and/or the exposure time is long

P = Possibility of avoiding the hazard or limiting the harm

- P1 = Possible under specific conditions
- P2 = Scarcely possible



Contents

Automation 9/4 to 9/7

- b Safety controllers
- b Safety relays

AS-Interface Safety at work 9/8 and 9/9

- b Safety monitors and interfaces

Detection 9/10 to 9/13

- b Safety interlock switches
- b Non-contact safety interlock switches
- b Safety limit switches
- b Light curtains

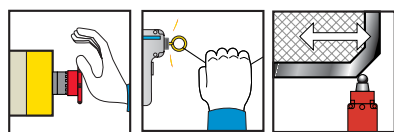
Dialog 9/14

- b Emergency stop–Cable pull switches



Preventa Automation

Safety controllers Emergency stops and limit switches



Universal

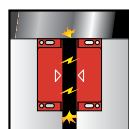


Maximum category of the solution		SIL3 per EN/IEC 61508 Category 4 per EN 954-1			Category 4 per EN 954-1
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state			2 x 3 N.O. per function
	Additional	–			3 solid-state
Display (number of LEDs)		30			12
Width of housing		74 mm			45 mm
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1) (2)	XPSMC32ZC (1) (2)	XPSMC32ZP (1) (2)	XPSMP11123P (3)

Non-contact safety interlock switches



Universal



Maximum category of the solution		SIL3 per EN/IEC 61508 Category 4 per EN 954-1			Category 4 per EN 954-1
For monitoring		non-contact safety interlock switches			
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state			2 x 3 N.O. per function
	Additional	–			3 solid-state
Display (number of LEDs)		30			12
Width of housing		74 mm			45 mm
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2)	XPSMC32ZC (1)(2)	XPSMC32ZP (1)(2)	XPSMP11123P (3)

Safety mats and safety edges



Universal



Maximum category of the solution		SIL3 per EN/IEC 61508 Category 4 per EN 954-1			Category 4 per EN 954-1
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state			2 x 3 N.O. per function
	Additional	–			3 solid-state
Display (number of LEDs)		30			12
Width of housing		74 mm			45 mm
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2)	XPSMC32ZC (1)(2)	XPSMC32ZP (1)(2)	XPSMP11123P (3)

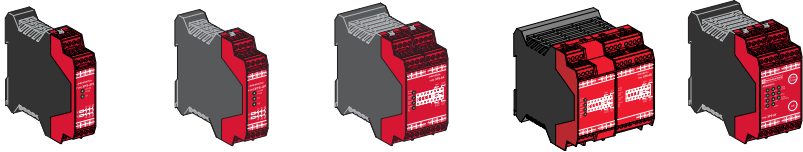
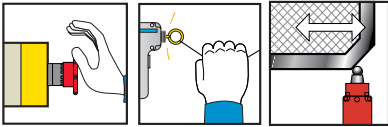
(1) Version with 32 inputs. For version with 16 inputs, replace 32 in the catalog number by 16 (example: XPSMC32Z becomes XPSMC16Z).

(2) XPSMCWIN configuration software, configuration cable TSXPCX1031, adaptor XPSMCCPC and a set of plug in connectors with screw terminals XPSMCTS16 or XPSMCTS32 or set of plug in connectors with spring terminals XPSMCTC16 or XPSMCTC32 to be ordered separately.

(3) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSMP11123P becomes XPSMP11123).

Safety relays
Emergency stops and
limit switches

Preventa
Automation



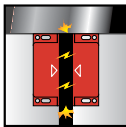
Maximum category of the solution (EN 954-1)		Category 3		Category 4		
Number of circuits	Safety	3 N.O.	3 N.O.	3 N.O.	7 N.O.	3 N.O. + 3 N.O. time delay
	Additional	1 solid-state	–	1 N.C. + 4 solid-state	2 N.C. + 4 solid-state	3 solid-state
Display (number of LEDs)		2	3	4	4	11
Width of housing		22.5 mm	22.5 mm	45 mm	90 mm	45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	–	–	–	–	XPSAV11113P (1)
	24 VAC/DC	XPSAC5121P (1)	XPSAF5130P (1)	XPSAK311144P (1)	XPSAR311144P (1)	–
	24 VDC/120 VAC	–	–	XPSAK351144P (1)	XPSAR351144P (1)	–

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSAV11113P becomes XPSAV11113).

Non-contact safety interlock switches



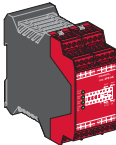
Maximum category of the solution (EN 954-1)		Category 4	
For monitoring		2 non-contact safety interlock switches maximum	6 non-contact safety interlock switches maximum
Number of circuits	Safety	2 N.O.	2 N.O.
	Additional	2 solid-state	2 solid-state
Display (number of LEDs)		3	15
Width of housing		22.5 mm	45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSDMB1132P (1)	XPSDME1132P (1)

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSDMB1132P becomes XPSDMB1132).

Safety mats and safety edges



Maximum category of the solution (EN 954-1)		Category 3
Number of circuits	Safety	3 N.O.
	Additional	1 N.C. + 4 solid-state
Display (number of LEDs)		4
Width of housing		45 mm

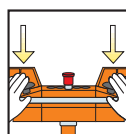
Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VAC/DC	XPSAK311144P (1)
	24 VDC/120 VAC	XPSAK351144P (1)

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSAK311144P becomes XPSAK311144).

Preventa Automation

Safety controllers Two-hand control



Universal

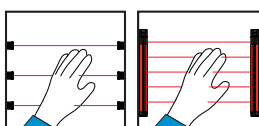


Maximum category of the solution		SIL 3 per EN/IEC 61508 Category 4 per EN 954-1		
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state		
	Additional	–		
Display (number of LEDs)		30		
Width of housing		74 mm		
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2)	XPSMC32ZC (1)(2)	XPSMC32ZP (1)(2)

Light curtains



Universal

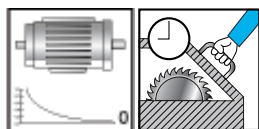


Maximum category of the solution		SIL 3 per EN/IEC 61508 Category 4 per EN 954-1		Category 4 per EN 954-1	
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state		2 x 3 N.O. per function	6 PNP solid-state
	Additional	–		3 solid-state	1 PNP + 1 NPN
Display (number of LEDs)		30		12	14 + double display units
Width of housing		74 mm		45 mm	100 mm
Integral Muting function		Yes		No	Yes
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2)	XPSMC32ZC (1)(2)	XPSMC32ZP (1)(2)	XPSMP11123P (3)	XPSLCM1150

Zero speed and time delay



Universal



Maximum category of the solution		SIL 3 per EN/IEC 61508 Category 4 per EN 954-1		
For monitoring		Motor zero speed condition		
Number of circuits	Safety	2 x 2 N.O. + 6 solid-state		
	Additional	–		
Display (number of LEDs)		30		
Width of housing		74 mm		
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1) (2)	XPSMC32ZC (1) (2)	XPSMC32ZP (1) (2)

(1) Version with 32 inputs, for version with 16 inputs, replace 32 in the catalog number by 16 (example: XPSMC32Z becomes XPSMC16Z).

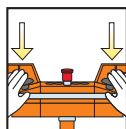
(2) XPSMCWIN configuration software, configuration cable TSXPCX1031, adaptor XPSMCCPC and a set of plug in connectors with screw terminals XPSMCTS16 or XPSMCTS32 or set of plug in connectors with spring terminals XPSMCTC16 or XPSMCTC32 to be ordered separately.

(3) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSMP11123P becomes XPSMP11123).



Safety relays Two-hand control

Preventa
Automation



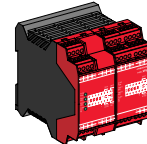
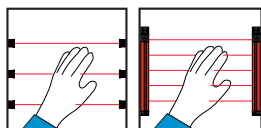
Maximum category of the solution (EN 954-1)		Category 1 (type IIIA to EN 574)	Category 4 (type IIIC to EN 574)	
Number of circuits	Safety	1 N.O.	2 N.O.	2 N.O.
	Additional	1 N.C.	1 N.C.	2 solid-state
Display (number of LEDs)		2	3	3
Width of housing		22.5 mm	45 mm	22.5 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	–	XPSBC1110	XPSBF1132P (1)
	24 VAC/DC	XPSBA5120	–	–
	120 VAC	XPSBA3420	XPSBC3410	–

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSBF1132P becomes XPSBF1132).

Light curtains



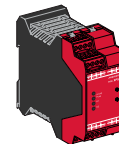
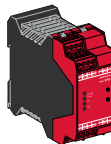
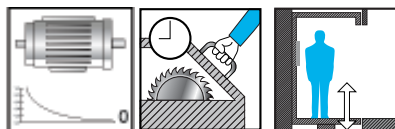
Maximum category of the solution (EN 954-1)		Category 2	Category 4		
Number of circuits	Safety	2 N.O.	3 N.O.	3 N.O.	7 N.O.
	Additional	4 solid-state	–	1 N.O. + 4 solid-state	1 N.C. + 4 solid-state
Display (number of LEDs)		4	3	4	4
Width of housing		45 mm	22.5 mm	45 mm	90 mm
Integral Muting function		Yes	No	No	No

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSCM1144P (1)	–	–	–
	24 VAC/DC	–	XPSAFL5130P (1)	XPSAK311144P (1)	XPSAR311144P (1)
	24 VDC/120 VAC	–	–	XPSAK351144P (1)	XPSAR351144P (1)

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSCM1144P becomes XPSCM1144).

Zero speed, time delay and elevators



Maximum category of the solution (EN 954-1)		Category 4	Category 3		Category 4
For monitoring		Motor zero speed	Safety time delay		Elevators
Number of circuits	Safety	1 N.O. + 1 N.C.	1 N.O. time delay	1 N.O. pulse	2 N.O.
	Additional	2 solid-state	2 N.C. + 2 solid-state	2 N.C. + 2 solid-state	2 solid-state
Display (number of LEDs)		4	4	4	4
Width of housing		90 mm	45 mm	45 mm	45 mm

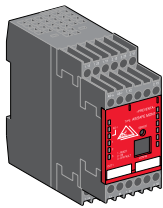
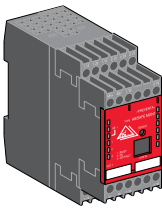
Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSVN1142	–	–	–
	24 VAC/DC	–	XPSTSA5142P (2)	XPSTSW5142P (2)	XPSDA5142
	120 VAC	XPSVN3442	XPSTSA3442P (2)	XPSTSW3442P (2)	XPSDA3442

(2) Removable terminal block version only.

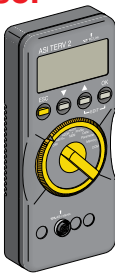
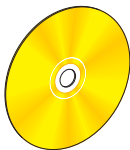
Preventa
AS-Interface
safety at work

Safety monitors
Monitors



Maximum category of the solution		SIL 3 per EN/IEC 61508 Category 4 per EN 954-1	
Number of circuits	Safety	2 N.O.	2 x 2 N.O.
	Auxiliary	1 solid-state	2 solid-state
Display (number of LEDs)		5	8
Width of housing		45 mm	45 mm
AS-Interface profile		S.7.F	S.7.F
Master module compatibility		V1 / V2.1	V1 / V2.1
Catalog number of monitor with enhanced functions		ASISAFEMON1B	ASISAFEMON2B

Configuration software, adjustment terminal and AS-Interface analyser

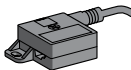


Type	Configuration software (1)	Adjustment terminal (2)	AS-Interface Analyser
Multilingual	EN / FR / DE / ES / IT / PT	–	b Analysis and diagnostics of AS-Interface line and Safety at Work
For use with	ASISAFEMON1B/2B	–	b Complements the diagnostic functions of the local AS-Interface master
Media	CD-ROM PC	–	b Maintenance or validation of AS-Interface lines
Environment	Windows	–	b Print-out of AS-Interface line tests
Degree of protection	–	IP 20	
Supply	–	4 x LR6 batteries	
Dimensions W x D x H	–	84 x 35 x 195 mm	92 x 28 x 139 mm
Catalog number	ASISWIN2	ASITERV2	ASISA01

(1) CD-ROM with hardware and software user guides.
(2) For addressing safety interfaces, use the infrared adaptor ASITERIR1 or the standard adaptor ASISAD1. (See accessories below.)

9

Accessories



Type	Adaptor for the addressing of safety interfaces	Infrared adaptor for adjustment terminal	Tap-off for AS-Interface cable	Cable for monitor parametering, RS 232	Cable for monitor to monitor transfer
Degree of protection	IP 67	IP 67	IP 67	IP 20	IP 20
Cable length	–	1 m	2 m	2 m	0.2 m
Catalog number	ASISAD1	ASITERIR1	XZCG0122	ASISCP	ASISCM



Safety interfaces
For Ø 22 Emergency stop

Preventa
AS-Interface
safety at work



Interface type	For mushroom head push buttons (3)				Control stations	
	Metal	(1)	Plastic	(1)	Plastic	
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 65	IP 65
Dimensions W x D x H	40 x 90 x 68 mm	40 x 80 x 40 mm	40 x 90 x 64 mm	40 x 90 x 40 mm	66 x 95 x 78 mm	66 x 95 x 78 mm
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA	45 mA	45 mA	45 mA
Infrared addressing	Yes	No	Yes	No	No	No
Connection on AS-Interface	IDC (2)	Connector	IDC (2)	Connector	M12 connector	M12 connector
Catalog number with N.C. + N.C. contact (mushroom head push button not included)	ASISSLB4	ASISSE4	ASISSLB5	ASISSE5	ASISEA1C	ASISEK1C
Catalog number of mushroom head push button (Ø40 latching mushroom head push button, turn to release)	ZB4BS844 (3)	ZB4BS844 (3)	ZB4AS844 (3)	ZB4AS844 (3)	Integrated (4)	Integrated (5)

- (1) For installation in enclosures.
- (2) IDC: Insulation Displacement Connector.
- (3) Mushroom head push button to be ordered separately.
- (4) Turn to release latching mushroom head push button.
- (5) Key release (n° 455) latching mushroom head push button.

For other safety products with
M12 connector outputs or ISO M16/20



Type of entry	2 x M12 entries (6)	1 x M12 entry	1 x ISO M16 entry (7)
Degree of protection	IP 67	IP 67	IP 67
Dimensions W x D x H	40 x 40 x 58 mm	40 x 40 x 58 mm	40 x 40 x 57.5 mm
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA
Infrared addressing	Yes	Yes	Yes
Connection on AS-Interface	IDC (2)	IDC (2)	IDC (2)
Catalog number	ASISSLC2	ASISSLC1	ASISLLS

- (2) IDC: Insulation Displacement Connector.
- (6) For connection using 2 pre-wired connectors, or 1 pre-wired connector + 1 connector.
- (7) For 1 x ISO M20 entry, use adaptor shown below.

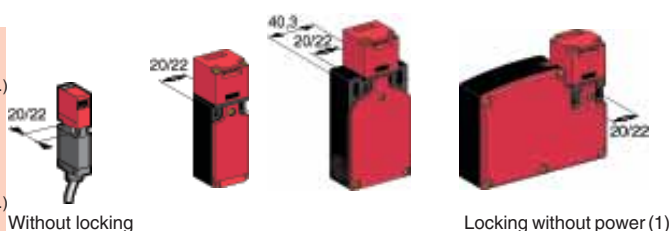
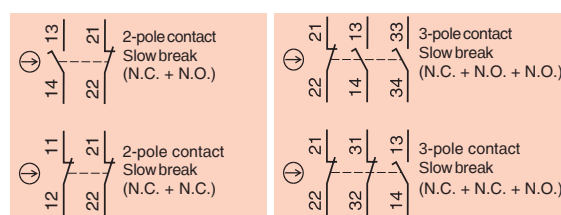
Accessories



Type	Tap-off for AS-Interface cable	Connectors		Pre-wired connector	Adaptor (sold in lots of 5)
Description	M12 female, threaded	elbowed	straight	straight	ISO M16/M20
Degree of protection	IP 67	IP 67	IP 67	IP 67	IP 67
Length of cable	—	—	—	2 m	—
Catalog number	XZCG0120	XZCC12MCM40B	XZCC12MDM40B	XZCP1541L2	DE9RI2016

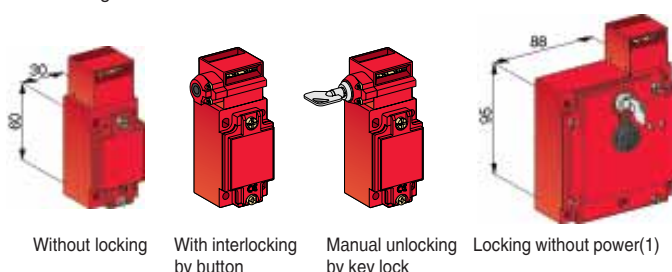
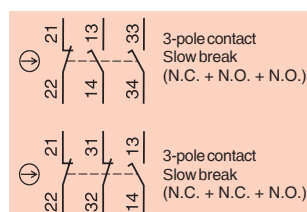
Preventa Detection

Safety interlock switches and actuating keys



Plastic, double insulated switches		Type XCSMP pre-cabled, L = 2 m	Type XCSPA and TA 1x1/2" NPT entry 2x11 mm entry (2)		Type XCSTE 1 x 11 mm entry (2)		
Actuation speed (min/ max)		0.05 m/s / 1.5m/s	0.1 m/s / 0.5 m/s		0.1 m/s / 0.5 m/s		
Degree of protection		IP 67, Type 4, 4X indoor, 12					
Rated operational characteristics (conforming to IEC/EN 60947-5-1)		AC 15, C 300 DC 13, Q 300	AC 15, A 300 DC 13, Q 300		AC 15, B 300 DC 13, Q 300		
Dimensions (body + head) W x D x H		30 x 15 x 87 mm	30 x 30 x 93.5 mm	52 x 30 x 114.5 mm	110 x 33 x 93.5 mm		
Solenoid supply voltage		—	—	—	24 VAC/DC	120 VAC/DC	230 VAC/DC
Complete switch	N.C.+N.O. stag. (XCSMP/PA/TE) N.C.+N.O.+N.O. (XCSTA)	XCSMP59L2(3) ➞	XCSPA593 ➞	XCSTA593 ➞	XCSTE5313 ➞	XCSTE5333 ➞	XCSTE5343 ➞
	N.C.+N.C. (XCSMP/PA/TE) N.C.+N.C.+N.O. (XCSTA)	XCSMP79L2(3) ➞	XCSPA793 ➞	XCSTA793 ➞	XCSTE7313 ➞	XCSTE7333 ➞	XCSTE7343 ➞

- (1) For locking with power, refer to the Machine Safeguarding Products Catalog #9007CT0201.
(2) With 1/2" NPT conduit adaptor.



Metal switches	Type XCSA/B/C 1 x 1/2" NPT conduit entry	Type XCSE 2 x 1/2" NPT conduit entry		
Actuation speed (min/ max)	0.1 m/s / 0.5 m/s	0.1 m/s / 0.5 m/s		
Degree of protection	IP 67	IP 67		
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	AC 15, A 300 DC 13, Q 300	AC 15, B 300 DC 13, Q 300		
Dimensions (body + head) W x D x H	40 x 44 x 113.5 mm	52 x 44 x 113.5 mm	52 x 44 x 113.5 mm	98 x 44 x 146 mm
Solenoid supply voltage	—	—	—	24 VAC/DC 110/120 VAC/DC 220/240 VAC/DC
Complete switch	N.C. + N.O. + N.O.	XCSA503 →	XCSB503 →	XCSC503 →
	N.C. + N.C. + N.O.	XCSA703 →	XCSB703 →	XCSC703 →
				XCSE5313 →
				XCSE5333 →
				XCSE7313 →
				XCSE7333 →
				XCSE7343 →

- (1) For locking with power, refer to the Machine Safeguarding Products Catalog #9007CT0201.

Actuating keys and accessories

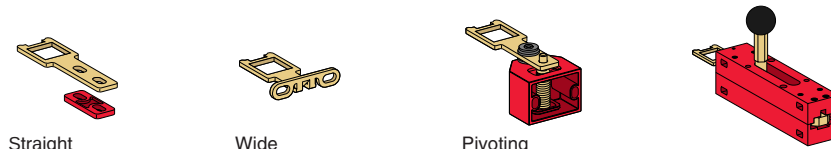


For safety switches XCSMP	Actuating keys			
Catalog number	XCSZ81	XCSZ84	XCSZ83	XCSZ85



For safety switches XCSPA/TA/TE	Actuators				Retaining device
Catalog number	XCSZ11	XCSZ12	XCSZ14	XCSZ13	XCSZ21

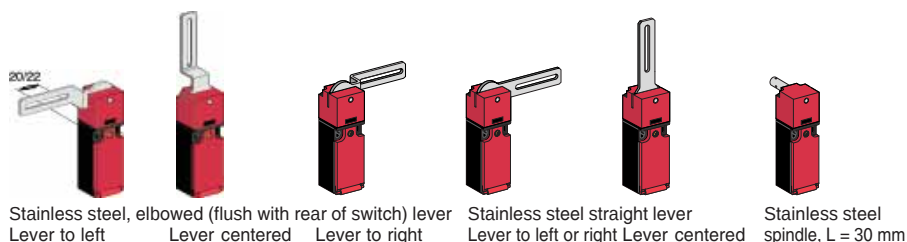
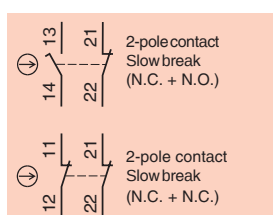
- (1) For L = 29 mm, catalog number = XCSZ15.



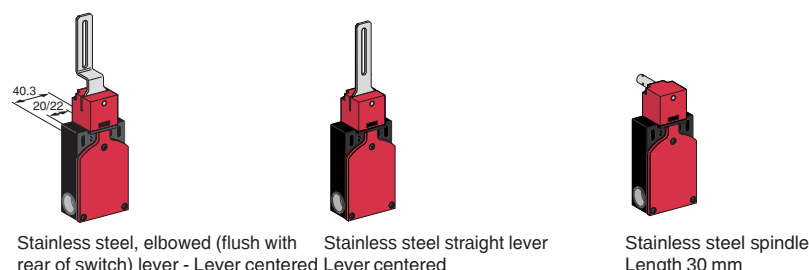
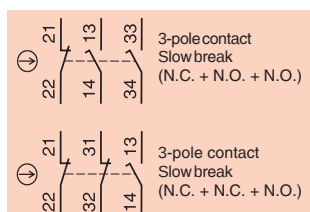
For safety interlock switches XCSA/B/C/E	Actuating keys			Door lock
Catalog number	XCSZ01	XCSZ02	XCSZ03	XCSZ05

Safety interlock switches with rotary lever or rotary shaft

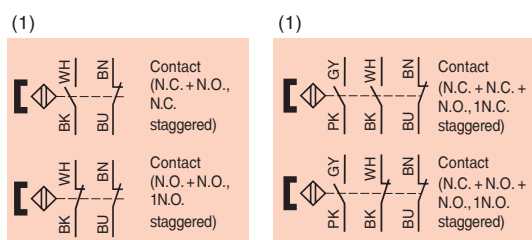
Preventa Detection



Plastic switches		Type XCSPL with rotary lever or XCSPR with spindle 1 x 1/2" NPT conduit entry					
Minimum torque (actuation / positive opening)		0.88 in-lb / 2.2 in-lb					
Degree of protection		IP67, Type 4, 4X indoor, 12					
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)					
Dimensions (body + head) W x D x H		30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 96 mm
Tripping angle		5°	5°	5°	5°	5°	5°
Complete switch	N.C. + N.O., break before make	XCSPL593 →	XCSPL583 →	XCSPL573 →	XCSPL563 →	XCSPL553 →	XCSPR553 →
	N.C. + N.C.	XCSPL793 →	XCSPL783 →	XCSPL773 →	XCSPL763 →	XCSPL753 →	XCSPR753 →



Plastic switches		Type XCSTL with rotary lever or XCSTR with spindle 2 X 11 mm conduit entry with 1/2" NPT conduit adaptor		
Minimum torque (actuation / positive opening)		0.1 in-lb	0.1 in-lb	0.1 in-lb
Degree of protection		IP 67	IP 67	IP 67
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)		
Dimensions (body + head) W x P x H		52 x 30 x 180 mm	52 x 30 x 180 mm	52 x 30 x 117 mm
Tripping angle		5°	5°	5°
Complete switch	N.C.+N.O.+N.O., 2N.O. staggered	XCSTL583 →	XCSTL553 →	XCSTR553 →
	N.C.+N.C.+N.O., N.O. staggered	XCSTL783 →	XCSTL753 →	XCSTR753 →



Non-contact safety interlock switches



Plastic switches		Type XCSDM non-contact safety interlock switches Pre-cabled, L = 2 m		
Switches for actuation		Face to face, face to side, side to side		Face to face
Degree of protection		IP 66 + IP 67		
Type of contact		REED		
Rated operational characteristics		Ue = 24 Vdc, Ie = 100 mA		
Dimensions W x D x H		16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38.5 mm
Operating zone (3)		Sao: 0.20", Sar: 0.59"	Sao: 0.31", Sar: 0.79"	Sao: 0.31", Sar: 0.79
Switch with coded magnet	N.C. + N.O., N.C. staggered	XCSDMC5912	—	XCSDMR5912
	N.O. + N.O., 1N.O. staggered	XCSDMC7912	—	XCSDMR7912
	N.C.+N.C.+N.O., 1N.C. staggered	—	XCSDMP5012	—
	N.C.+N.O.+N.O., 1N.O. staggered	—	XCSDMP7012	—

(1) Contact states shown are with the magnet present.

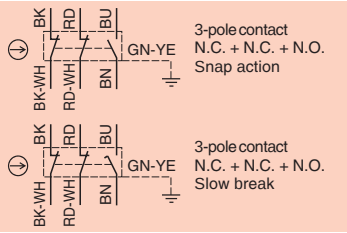
(2) For version without LED indicator, replace the last 1 in the catalog number by 0 (example: XCSDMC5912 becomes XCSDMC5902).

(3) Sao: assured operating distance. Sar: assured release distance.

For additional information, reference catalog 9007CT0201.

Preventa
Detection

Limit switches
Safety limit switches



Metal
end plunger



Roller plunger

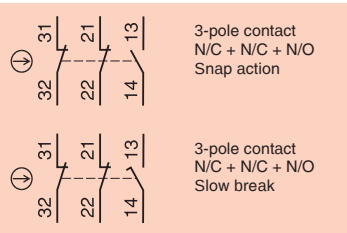


Thermoplastic
roller lever

Miniature switches		Type XCSM, metal pre-wired, L = 2 m (1)		
Maximum actuation speed (min/max)	slow break	19.7 ft/min. / 1.64 ft/sec.	19.7 ft/min. / 1.64 ft/sec.	19.7 ft/min. / 4.9 ft/sec.
	snap action	0.39 in/min. / 1.64 ft/sec.	0.39 in/min. / 1.64 ft/sec.	0.39 in/min. / 4.9 ft/sec.
Minimum force or torque (actuation / positive opening)		1.9 in-lb / 9.5 in-lb	1.6 in-lb / 7.9 in-lb	0.9 in-lb / 4.4 in-lb
Degree of protection		IP 66 + IP 67 + IP 68, Type 4, 4X, 6, 12		
Dimensions (body + head) W x D x H		30 x 16 x 60 mm	30 x 16 x 70.5 mm	30 x 32 x 92.5 mm
Complete switch	N.C. + N.C. + N.O. snap action	XCSM3910L2 →	XCSM3902L2 →	XCSM3915L2 →
	N.C. + N.C. + N.O. slow break	XCSM3710L2 →	XCSM3702L2 →	XCSM3715L2 →



(1) For a 5 m long cable, replace the last digit of the catalog number by 5 (example: XCSM3910L2 becomes XCSM3910L5).



Metal
end plunger



Roller
plunger



Thermoplastic
roller lever



Metal
end plunger



Roller
plunger



Thermoplastic
roller lever

Compact switches			Type XCSD, metal 1 x 1/2" NPT conduit (2)			Type XCSP, plastic 1 x 1/2" NPT conduit (2)		
Maximum actuation speed	slow break	min	19.7 ft/min.	19.7 ft/min.	19.7 ft/min.	19.7 ft/min.	19.7 ft/min.	19.7 ft/min.
		max	1.64 ft/sec.	1.64 ft/sec.	4.9 ft/sec.	1.64 ft/sec.	1.64 ft/sec.	4.9 ft/sec.
	snap action	min	0.39 in/min.	0.39 in/min.	0.39 in/min.	0.39 in/min.	0.39 in/min.	0.39 in/min.
		max	1.64 ft/sec.	1.64 ft/sec.	4.9 ft/sec.	1.64 ft/sec.	1.64 ft/sec.	4.9 ft/sec.
Minimum force or torque (actuation / positive opening)			3.72 / 10.12 in-lb	2.7 / 8.09 in-lb	0.89 / 2.21 in-lb	3.72 / 10.12 in-lb	2.7 / 8.09 in-lb	0.89 / 2.21 in-lb
Degree of protection			IP 66 + IP 67, Type 4, 4X, 12					
Dimensions (body + head) W x D x H			34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm	34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm
Complete switch	N.C. + N.C. + N.O. snap action		XCSD3910N12	XCSD3902N12	XCSD3918N12	XCSP3910N12	XCSP3902N12	XCSP3918N12
	N.C. + N.C. + N.O. slow break		XCSD3710N12	XCSD3702N12	XCSD3718N12	XCSP3710N12	XCSP3702N12	XCSP3718N12

(2) For other conduit entries, refer to the Machine Safeguarding Products Catalog #9007CT0201.



Light curtains

Type 4 conforming to IEC/EN 61496-2

Preventa Detection



Light curtain functions

- Auto/Manual/Manual 1st cycle
- Monitoring of external switching devices (EDM: External Devices Monitoring),
- Test input (MTS: Monitoring Test Signal),
- Alignment aid by LED display of each light beam broken,
- LED display of operating modes and alarms,
- Coding of the beams

Type			Single-beam and multi-beam, infrared transmission	
Compact range			Transmitter/receiver	Transmitter/passive receiver
Sensing range			0.8–20 or 70 m (according to config)	0.8–8 m
Minimum object sensitivity (MOS)			Body Detection	
Number of circuits	Safety		2 solid-state PNP	
	Auxiliary (alarm or following)		1 solid-state PNP	
Response time (depending on model)			16–24 ms	
Connection			M12 Connector (1)	M12 Connector
Beam	Interval	Number		
	–	1	XUSLPZ1AM	–
	300 mm	4	XUSLPZ4A0300M	–
		5	XUSLPZ5A0300M	–
		6	XUSLPZ6A0300M	–
	400 mm	3	XUSLPZ3A0400M	–
	500 mm	2	XUSLPZ2A0500M	XUSLPB2A0500M
		3	XUSLPZ3A0500M	–
	600 mm	2	XUSLPZ2A0600M	XUSLPB2A0600M

(1) Light curtain with M12 connector output, for terminal block output, replace **M** from the end of the catalog number by **B**. Example : XUSLPZ1AM becomes XUSLPZ1AB

Type 4 conforming to IEC/EN 61496-1



Light curtain functions

- Auto/Manual,
- Monitoring of external switching devices (EDM: External Devices Monitoring),
- Test input (MTS: Monitoring Test Signal, XUSLT only),
- Blanking (ECS/B),
- Floating Blanking (FB),
- Blanking + Floating Blanking,
- Alignment aid by LED display of each light beam broken,
- LED display of operating modes and alarms.

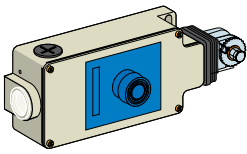
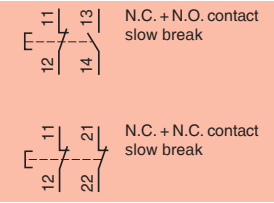
Compact range			Type 4 conforming to IEC/EN 61496-1.	
			Pre-wired with 0.25 m cable with connector.	
Sensing range			0.3–7.5 m	0.3–9 m
Minimum object sensitivity (MOS)			14 mm finger protection	30 mm hand protection
Number of circuits	Safety		2 solid-state PNP	2 solid-state PNP
	Additional		1 solid-state PNP	1 solid-state PNP
Response time			20–40 ms depending on model	20–30 ms depending on model
Transmitter + receiver	Height protected (mm)	260	XUSLTQ6A0260	–
		350	XUSLTQ6A0350	XUSLTR5A0350
		435	XUSLTQ6A0435	–
		520	XUSLTQ6A0520	XUSLTR5A0520
		610	XUSLTQ6A0610	–
		700	XUSLTQ6A0700	XUSLTR5A0700
		870	XUSLTQ6A0870	XUSLTR5A0870
		955	XUSLTQ6A0955	–
		1045	XUSLTQ6A1045	XUSLTR5A1045
		1215	XUSLTQ6A1215	XUSLTR5A1215
		1390	XUSLTQ6A1390	XUSLTR5A1390
		1570	–	XUSLTR5A1570

			Connector Cables				
Cable length			3 m	5 m	10 m	15 m	30 m
Pre-wired connector for (shielded cable)	XUSLT	receiver cable	–	XSZTCR05	XSZTCR10	XSZTCR15	XSZTCR30
		transmitter cable	–	XSZTCT05	XSZTCT10	XSZTCT15	XSZTCT30
	XUSLP	receiver cable	–	XSZPCR05	XSZPCR10	XSZPCR15	XSZPCR30
		transmitter cable	–	XSZPCT05	XSZPCT10	XSZPCT15	XSZPCT30

For additional information, reference catalog 9007CT0201.

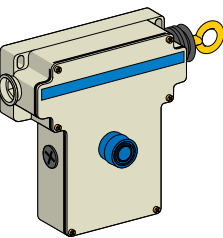
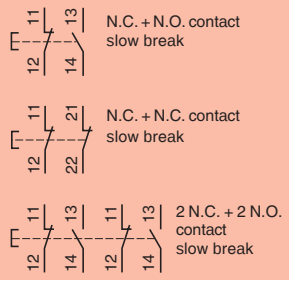
Safety

Emergency stop
Cable pull switches



Booted push button reset

For operating cable length - 15 m		Latching, when tripped 1 x 1/2" NPT conduit entry
Mechanical life (millions of operating cycles)		0.01
Shock / vibration resistance		50 gn / 10 gn
Degree of protection		IP 65, Type 4, 12
Rated operational characteristics		AC-15, A300 / DC-13, Q300 (conforming to IEC/EN 60947-5-1)
Dimensions W x D x H		201 x 71 x 68 mm
Operating cable length		≤15 m
Operating cable anchoring point		To right or to left
Contact	N.C. + N.O. slow break	XY2CH13150 Standard reset
	N.C. + N.C. slow break	XY2CH13170 Standard reset



Booted push button reset

For operating cable length - 50 m		Latching, without indicator light 1 x 1/2" NPT conduit entry			
Mechanical life (millions of operating cycles)		0.01			
Shock / vibration resistance		50 gn / 10 gn			
Degree of protection		IP 65, Type 4, 12			
Rated operational characteristics		AC-15, A300 / DC-13, Q300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		229 x 82 x 142 mm			
Operating cable length		≤50 m			
Operating cable anchoring point		Standard reset	Std. reset with pilot light	Booted reset	Booted reset with pilot light
Contact	N.C. + N.O. slow break	XY2CE1A150 (1)	–	XY2CE1A250 (1)	–
	N.C. + N.C. slow break	XY2CE1A170 (1)	–	XY2CE1A270 (1)	–
	2 N.C. + 2 N.O. slow break	XY2CE1A190 (1)	XY2CE1A196 (1)	XY2CE1A290 (1)	XY2CE1A296 (1)

(1) Right cable mount listed. For left hand cable mount, replace the first 1 after the "CE" with a 2 (example: XY2CE1A150 becomes XY2CE2A150).

9

	Cable kits		
For use with	XY2CH	XY2CE	XY2CE
Contains	1 cable - 34.4' (10.5m) long, 1 cable clamp and 1 end spring	1 cable - 83.7' (25.5m) long, 4 cable clamps, 1 turnbuckle, 3 cable end protectors, 1 cable support, 1 end spring	1 cable - 165.6' (50.5m) long, 4 cable clamps, 1 turnbuckle, 3 cable end protectors, 1 cable support, 1 end spring
Catalog number	XY2CZ9310	XY2CZ9325	XY2CZ9350



	Accessories			
For use with	all XY2CE and XY2CH			
Style	Cable support	Pulley	Pulley support	Cable clamp
Catalog number	XY2CZ601	XY2CZ708	XY2CZ705	XY2CZ523

For additional information, reference catalog 9007CT0201.



Notes

Safety



US Field Offices

FO Albany, NY	501 New Karner Road	Suite 5	Albany	NY	12205-3800	518-452-2590
FO Albuquerque, NM	4300 San Mateo Boulevard, NE	Suite B265	Albuquerque	NM	87110	505-888-8816
FO Allentown, PA	961 Marcon Blvd	Suite 302	Allentown	PA	18109	610-231-8950
FO Alpharetta, GA	1252 Old Alpharetta Road		Alpharetta	GA	30005	
FO Altoona, Pa	1929 Union Avenue		Altoona	PA	16601	814-942-1966
FO Amarillo, TX	1800 S. Washington St	Suite 201H	Amarillo	TX	79102	806-372-1938
FO Anchorage, AL	2028 E. Northern Lights Blvd	Suite 202	Anchorage	AK	99508	907-278-6048
FO Appleton, WI	North 1051 Tower View Drive		Greenville	WI	54942	
FO Asheville, NC	128 Bingham Road		Asheville	NC	28806	828-255-1537
FO Atlanta, GA	225 Townpark Drive	Suite 400	Kennesaw	GA	30144	770-792-4830
FO Augusta, GA	One 10th Street	Suite 640	Augusta	GA	30901	
FO Austin, TX	9101 Burnet Road	Suite 200	Austin	TX	78758	512-834-3070
FO Baltimore, MD	809 Gleneagles Court	Suite 309	Towson	MD	21286	410-337-8448
FO Baton Rouge, LA	11847 Bricksome Ave.	Suite B	Baton Rouge	LA	70816	225-291-6730
FO Beaver creek, OH	897 Winesap Drive		Beaver creek	OH	45434	
FO Billings, MT	1925 Grand Avenue	Suite 132	Billings	MT	59102	406-252-5587
FO Binghamton, NY	1944 Jefferson St.		Binghamton	NY	13903	607-724-2200
FO Birmingham, AL	2700 Corporate Dr.	Suite 110	Birmingham	AL	35242	205-981-3120
FO Blue Ash, OH	4675 Cornell Road	Suite 190	Cincinnati	OH	45241	
FO Boise, ID	760 East Ranch Drive		Eagle	ID	83616	208-938-8530
FO Boston, MA	780 Dedham Street	Suite 200	Canton	MA	2021	781-232-1300
FO Buffalo / Getzville, NY	6265 Sheridan Drive	Suite 116	Williamsville	NY	14221	716-565-2068
FO Canton, MA (Providence)	780 Dedham Street	Suite 200	Canton	MA	2021	781-232-1300
FO Cedar Rapids, IA	3700 Sixth Street Southwest		Cedar Rapids	IA	52404	319-368-3036
FO Champaign, IL	313 N. Mattis	Suite 206	Champaign	IL	61821	217-356-0211
FO Charleston, SC	1 Poston Road	Suite 160 Parkshore Center I	Charleston	SC	29407	843-556-0773
FO Charleston, WV	300 E. Prestige Drive		Hurricane	WV	25526	304-757-4193
FO Charlotte, NC	950 Fairview Plaza	Suite 300	Charlotte	NC	28210	704-571-6000
FO Chattanooga, TN	9223 Mountain Shadows Drive		Chattanooga	TN	37421	423-855-4180



US Field Offices

FO Chicago, IL	3050 Finley Road	Suite 301	Downers Grove	IL	60515	847-925-7773
FO Cincinnati, OH	4675 Cornell Drive	Suite 190	Cincinnati	OH	45241	513-605-8000
FO Cleveland, OH	2525 East Royalton Road		Broadview Heights	OH	44147	440-526-9070
FO Colorado Springs, CO	950 S. Cherry Street	Suite 1010	Colorado Springs	CO	80908	303-756-5700
FO Columbia, SC	810 Dutch Square Blvd	Suite 310	Columbia	SC	29210	803-731-2975
FO Columbus, OH	777 Brooksedge Plaza Drive		Westerville	OH	43081	614-818-7517
FO Corpus Christi, TX	555 N. Carancahua	Suite 230	Corpus Christi	TX	78478	361-887-5055
FO Dallas/ft Worth, TX	204 Airline Drive	Suite 300	Coppell	TX	75019	972-471-6100
FO Davenport, IA	1140 East Kimberly Road	Suite 100	Davenport	IA	52807-1710	563-386-7992
FO Dayton, OH	1875 Founders Drive	Miami Valley Research Park	Kettering	OH	45420	937-258-8426
FO Denver, CO	501 South Cherry Street	#1080	Denver	CO	80246	303-756-5700
FO Des Moines, IA	939 Office Park Road	Suite 223	West Des Moines	IA	50265	515-280-1731
FO Detroit, MI	1960 Research Drive	Maple Research Suite 100, Bldg F	Troy	MI	48083-2163	248-457-4100
FO Dothan, AL	4155 Lomac Drive	Suite A	Montgomery	AL	36106	334-271-0230
FO East Carolina, NC	203 Commerce Street	Suite A	Greenville	NC	27858	252-756-2117
FO Easton, MD	9102 High Banks Drive		Easton	MD	21601	410-819-0001
FO Eau Claire, WI	3774 North Shore Drive		Eau Claire	WI	54703	
FO El Paso, TX	1790 N. Lee Trevino	Suite 201	El Paso	TX	79936-4525	915-592-8813
FO Erie, MI	6434 Edgewater Drive		Erie	MI	48133	
FO Eugene, OR	313 West Thirteenth Ave.		Eugene	OR	97401	541-485-9022
FO Evansville, IN	4424 Vogel Road	Suite 304	Evansville	IN	47715-2268	812-473-9900
FO Fargo, ND	112 North University Drive	Suite 105	Fargo	ND	58102	701-235-7223
FO Findley LAKE, NY	2747 Sunnyside Road		Findley Lake	NY	14736	
FO Flint, MI	4110 Pier North Blvd.	Suite D	Flint	MI	48504-1337	810-733-9400
FO Florence, SC	1831 West Evans Street	Suite 308	Florence	SC	29501	
FO Fort Myers, FL	4310 Metro Parkway	Suite 150	Fort Myers	FL	33916	239-936-5573
FO Fresno, CA	6730 North West Avenue	Suite 114	Fresno	CA	93711	559-438-5388
FO Ft Wayne, IN	415 Airport North Office Park		Ft Wayne	IN	46825	260-490-6870
FO Grainger/ Lincolnshire, IL	333 Knightsbridge Parkway		Lincolnshire	IL	60069-3639	



US Field Offices

FO Grand Junciton, CO	360 High Desert Road		Grand Junction	CO	81503	970-245-6328
FO Grand Rapids, MI	6651 Crossing Drive, SE	Suite B	Grand Rapids	MI	49508	616-656-5005
FO Green Bay, WI	110 Packerland Drive	Suite C-2	Green Bay	WI	54303	920-494-3313
FO Greensboro, NC	1500 Pinecroft Road	Suite 104	Greensboro	NC	27407	336-292-8995
FO Greenville, SC	300 Executive Center	Suite 102	Greenville	SC	29615	864-288-6384
FO Hagerstown, MD	265 Mill Street	Suite 300	Hagerstown	MD	21740	301-739-5760
FO Hammond, IN	1204 Erie Court		Crown Point	IN	46307	219-663-5420
FO Harlingen, TX	1418 East Tyler	Suite 3	Harlingen	TX	78550	956-423-1694
FO Hartford, CT	1090 Elm Street	Suite 101	Rocky Hill	CT	6067	860-529-7472
FO Honolulu, HI	560 N. Nimitz Hwy	Suite 201B	Honolulu	HI	96817	808-522-0511
FO Houston, TX	14800 St Mary's Lane	Suite 110	Houston	TX	77079	713-570-2100
FO Huntsville, AL	906 Bob Wallace Ave.	Suite C-3	Huntsville	AL	35801	256-539-2465
FO Hurricane, WV	300 East Prestige Drive		Hurricane	WV	25526	304-757-4193
FO Idaho Falls, ID	611 Wilson	Suite 6D	Pocatello	ID	83201-5029	208-232-1650
FO Indianapolis, IN	8250 Woodfield Crossing Blvd	Suite 150	Indianapolis	IN	46240-4319	317-202-6310
FO Jackson, MS	2084 Dunbarton	Suite A&b	Jackson	MS	39216	601-982-1031
FO Jacksonville, FL	4811 Beach Boulevard	Suite 302	Jacksonville	FL	32207	904-348-3150
FO Jefferson City, MO	13515 Barrett Parkway Dr.	Suite 170	Ballwin	MO	63021	314-821-8181
FO Kalamazoo, MI	5380 Holiday Terrace		Kalamazoo	MI	49009	269-372-2117
FO Kansas City, KS	8207 Melrose Drive	Suite 150	Lenexa	KS	66214	913-599-3000
FO Kennesaw, GA	4016 Southbrook Court		Kennesaw	GA	30152	
FO Kettering, OH	1875 Founder Drive		Kettering	OH	45420	937-258-8426
FO Kingsport, TN	901 Beechwood Drive		Kingsport	TN	37663	423-239-9610
FO Knoxville, TN	408 N. Cedar Bluff Road	Suite 250	Knoxville	TN	37923	865-693-1500
FO Lansing, MI	416 North Homer Street	Suite 109	Lansing	MI	48912	517-337-2835
FO Las Vegas, NV	1210 South Valley View Blvd	Suite 208	Las Vegas	NV	89102	702-258-8889
FO Lexington, KY	1601 Mercer Road		Lexington	KY	40511	859-245-7901
FO Little Rock, AR	2001 Club Manor	Suite J	Maumelle	AR	72113	501-803-9494
FO Longview, TX	911 Northwest Loop 281	Suite 317	Longview	TX	75604	903-297-1267
FO Los Angeles, CA	21680 Gateway Center Drive	Suite 300	Diamond Bar	CA	91765	909-612-5400
FO Louisville, KY	101 Bullitt Lane	Suite 208	Louisville	KY	40222-8814	502-425-8363
FO Lubbock, TX	6502 Slide Road	Suite 400	Lubbock	TX	79424	806-794-4754



US Field Offices

FO Macon, GA	2960 Riverside Drive	Suite 220	Macon	GA	31204-1244	478-471-9033
FO Madison, WI	700 Rayovac Drive	Suite 212, 55 Oaks Bldg One	Madison	WI	53711-2476	608-271-2600
FO Media, PA	1023 East Baltimore Pike	Suite 300	Media	PA	19063	610-565-8750
FO Memphis, TN	65 Germantown Court	Suite 315	Cordova	TN	38018	901-754-3233
FO Miami International, FL	8410 NW 53rd Terrace	Suite 205, Monterey (04) Bldg.	Miami	FL	33166	305-591-9716
FO Miami, FL	490 Sawgrass Corporate Parkway	Suite 130, Bldg. D	Sunrise	FL	33325	954-331-2100
FO Midland, TX	4305 N Garfield	Suite 258	Midland	TX	79705	432-685-5005
FO Milwaukee, WI	11950 West Lake Park Drive	Suite 240	Milwaukee	WI	53224	414-247-6200
FO Minneapolis, MN	9220 Bass Lake Road	Suite 230	New Hope	MN	55428	763-543-5500
FO Mobile, AL	6170 Rangeline Road		Theodore	AL	36582	251-443-9454
FO Monroe, LA	1103 Hudson Lane	Building 1	Monroe	LA	71207	318-325-4501
FO Montgomery, AL	4155 Lomac Drive	Suite A	Montgomery	AL	36106	334-271-0230
FO Muscogee, GA	2013 Devonshire Drive	Suite 107	Columbus	GA	31904	706-596-0980
FO Nashville, TN	1010 Airpark Center Drive		Nashville	TN	37217	615-844-8700
FO New Orleans, LA	3501 North Causeway Blvd.	Suite 510	Metairie	LA	70002-3621	504-837-9022
FO New York, NY	366 North Broadway	Suite 300	Jericho	NY	11753	516-433-9257
FO New York, NY	145 W. 45th Street	Suite 1100	New York	NY	10036	
FO Norfolk, VA	6350 Center Drive	Bldg 5, Suite 102	Norfolk	VA	23502	757-461-1290
FO North Andover, MA	1 High Street		North Andover	MA	1845	
FO Oklahoma City, OK	4200 Perimeter Center Drive	Suite 150	Oklahoma City	OK	73112	405-942-7334
FO Omaha, NE	11640 Arbor Street	Suite 300	Omaha	NE	68144	402-330-3753
FO Oregon City, OR	817 Brighton Avenue		Oregon City	OR	97045	
FO Orlando, FL	2300 Maitland Center Parkway	Suite 215	Maitland	FL	32751	407-774-5151
FO Paducah, KY	2920 Lone Oak Road	#5	Paducah	KY	42001	
FO Parsippany, NJ	2001 Route 46	Suite 402	Parsippany	NJ	7054	973-263-6100
FO Peoria, IL	331 Fulton Street	Suite 325	Peoria	IL	61602	314-821-8181
FO Philadelphia, PA	1023 E. Baltimore Pike	Suite 300, 1 Media Plaza	Philadelphia	PA	19063	610-565-8750
FO Phoenix, AZ	410 North 44th Street	Suite 270	Phoenix	AZ	85008	602-231-8694
FO Pittsburgh, PA	790 Holiday Drive	Foster Plaza, Bldg II	Pittsburgh	PA	15220-2750	412-921-3810
FO Pocatello, ID	611 Wilson	Suite 6D	Pocatello	ID	83201	



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FO Portland, OR	10121 SE Sunnyside Road	Suite 120, Three Town Cntr	Clackamas	OR	97015	503-786-8771
FO Portsmouth, NH	360 Harvey Road	Unit 1, Upper	Manchester	NH	3103	606-817-6161
FO Raleigh, NC	8001 Knightdale Blvd.		Knightdale	NC	27545	
FO Richmond, VA	2812 Emerywood Parkway	Suite 231	Richmond	VA	23294	804-285-7508
FO Roanoke, VA	2820 Electric Road SW	Colonade #1, Suite 105	Roanoke	VA	24018	540-989-1250
FO Rochester, NY	125 Tech Park Drive	Suite 102	Rochester	NY	14623	585-424-4171
FO Rockford, IL	1437 South Bell School Rd	Suite 4	Rockford	IL	61108	815-397-1992
FO Sacramento, CA	4600 Northgate Blvd	Suite 230	Sacramento	CA	95834	916-648-8002
FO Salt Lake City, UT	1751 South 4800 West		Salt Lake City	UT	84104	801-994-1408
FO San Antonio, TX	84 Ne Loop 410	Suite 152	San Antonio	TX	78216	210-507-4587
FO San Diego, CA	6727 Flanders Drive	Suite 228	San Diego	CA	92121	858-455-9821
FO San Francisco, CA	6160 Stoneridge Mall Rd.	Suite 200	Pleasanton	CA	94588	925-469-0986
FO San Juan, PR	40 Road 165	Suite 31	Guaynabo	PR	00968-8001	787-783-2835
FO Sangamon, IL	313 N. Mattis	Suite 206	Champaign	IL	61821	314-821-8181
FO Savannah, GA	5 Oglethorpe Prof Blvd	Suite 110	Savannah	GA	31405-0783	912-356-9546
FO Seattle, WA	7525 Se 24th St	Suite 320, Bldg B	Mercer Island	WA	98040-2300	206-232-9702
FO Sherman, TX	100 N. Travis Street	Suite 503	Sherman	TX	75090	903-868-2720
FO Shreveport, LA	3010 Knight Street	Suite 380	Shreveport	LA	71105-2478	318-865-4267
FO Silverlake, WI	432 Evergreen Ave		Silverlake	WI	52170	
FO Sioux Falls, SD	707 East 41st Street	Suite 136	Sioux Falls	SD	57105-6085	605-334-2151
FO South Bend, IN	Two Edison Center, 245 Edison Road	Suite 200	Mishawaka	IN	46545	574-259-8521
FO Spokane, WA	104 South Freya	Suite 117, Lilac Flag	Spokane	WA	99202	
FO Springdale, AR	2760 N. Stagecoach		Fayetteville	AR	72703	479-571-2017
FO Springfield, MO	777 East Battelfield	Suite 103-B	Springfield	MO	65807	417-887-2307



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FO St. Louis, MO	13515 Barrett Parkway Drive	Suite 170	Ballwin	MO	63021	314-821-8181
FO Syracuse, NY	200 Salina Meadows Parkway	Suite 140	Liverpool	NY	13212	315-457-5593
FO Tallahassee, FL	1400 Metropolitan Blvd.		Tallahassee	FL	32308	
FO Tampa, FL	5110 Eisenhower Blvd.	Sunforest II, Suite 350	Tampa	FL	33634	813-286-0227
FO Toledo, OH	3231 Central Park West	Suite 204	Toledo	OH	43617	419-842-9836
FO Towson, MD	809 Gleneagles Court	Suite 309	Towson	MD	21286	410-337-8448
FO Traverse City, MI	3185 Logan Valley Rd.		Traverse City	MI	49684	231-946-3773
FO Tucson, AZ	410 N. 44th Street		Phoenix	AZ	85008	
FO Tulsa, OK	5100 East Skelly Drive	Suite 410	Tulsa	OK	74135-6454	918-622-2800
FO Tupelo, MS	144 South Thomas	Suite 101-4	Tupelo	MS	38801	662-842-3398
FO Ventura, CA	4882 Mcgrath Street	Suite 250	Ventura	CA	93003	805-658-2566
FO Waco, TX	6515 Sanger Avenue	Suite 5	Waco	TX	76710-7806	254-776-3432
FO Washington, DC	109 Carpenter Drive	Suite 220	Sterling	VA	20164	
FO Washington, DC (in VA)	109 Carpenter Drive	Suite 220	Sterling	VA	20164	703-709-1161
FO Westerville, OH	777 Brooksedge Plaza Dr.		Westerville	OH	43081	614-818-7517
FO Wichita Falls, TX	2629 Plaza Parkway	Suite B-11	Wichita Falls	TX	76308-3874	940-696-8088
FO Wichita, KS	Epic Center, 301 N. Main Street	Suite 240	Wichita	KS	67202	316-264-9338
FO Wilmington, NC	6700 Piedmont Place		Wilmington	NC	28411	910-686-1146
FO York, PA	3568 Concord Road		York	PA	17402	717-755-6470
FSD - Cleves, OH	531 Laurewood Drive		Cleves	OH	45002	
FSD Etters, PA	185 Bobby Jones Drive		Etters	PA	17319	
FSD Hockessin, DE	306 Stonehame Drive		Hockessin	DE	19707	

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