

Automation and Control

The Essential Guide

\$ 7.00

Catalog

04



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Telemecanique

Power control and protection

The essential guide

Welcome to the Simply Smart* world, compliments of Telemecanique

The TeSys range makes you a full part of it,
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- simplicity...
- compactness...
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Application-based selection guides allowing fast selection from a
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Solutions for a variety of power control applications: lighting,
capacitor switching, heating, changeover contactor pairs, resistive
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*A simplified selection
guide that allows you to
quickly select the
components you need to
build your motor starters
and controllers.
A range of simple,
compact and advanced
components for power
control and protection.*



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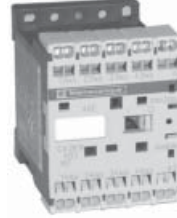


IEC type industrial control relays

TeSys® Type CA2K, CA3K and CA4K



CA2KN40**



CA2KN403**



CA3KN407**



CA4KN405***

Control relays

	Control Circuit		Type of Termination	Contact Configuration		Catalog Number (1)
	Supply	Consumption		N.O.	N.C.	
<ul style="list-style-type: none"> 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 	ac	4.5 VA	screw clamp	4	0	CA2KN40**
				3	1	CA2KN31**
				2	2	CA2KN22**
				4	0	CA2KN403**
	ac	4.5 VA	spring terminals	3	1	CA2KN313**
				2	2	CA2KN223**
				4	0	CA2KN407**
				3	1	CA2KN317**
	ac	4.5 VA	Slip-on 1 x 6.35 or 2 x 2.8	2	2	CA2KN227**
				4	0	CA2KN405**
				3	1	CA2KN315**
				2	2	CA2KN225**
	dc	3 W	screw clamp	4	0	CA3KN40**
				3	1	CA3KN31**
				2	2	CA3KN22**
				4	0	CA3KN403**
	dc	3 W	spring terminals	3	1	CA3KN313**
				2	2	CA3KN223**
				4	0	CA3KN407**
				3	1	CA3KN317**
	dc	3 W	Slip-on 1 x 6.35 or 2 x 2.8	2	2	CA3KN227**
				4	0	CA3KN405**
				3	1	CA3KN315**
				2	2	CA3KN225**

Low consumption control relays

<ul style="list-style-type: none"> 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***
				4	0	CA4KN403***
	dc	1.8 W	spring terminals	3	1	CA4KN313***
				2	2	CA4KN223***
				4	0	CA4KN407***
				3	1	CA4KN317***
	dc	1.8 W	Slip-on 1 x 6.35 or 2 x 2.8	2	2	CA4KN227***
				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 240 V. 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

Instantaneous auxiliary contact blocks

<ul style="list-style-type: none"> ■ 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

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

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
4	1	-	Spring Terminal	0	4	LADN04
				4	0	LADN403
				3	1	LADN313
				2	2	LADN223
4	1	-	Screw Clamp	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

Contactors

0.5 to 10 Hp TeSys K-line



Connections

■ screw clamp terminals

Rated operational current	le max AC-3	6 A	9 A	12 A
(Ue ≤ 440V)	le AC-1	-	20 A	-
Horsepower ratings	115/120 V 1 phase	0.5 hp	0.5 hp	0.5 hp
(UL ratings)	230/240 V 1 phase	1.0 hp	1.5 hp	1.5 hp
	208 V 3 phase	1.5 hp	3 hp	2 hp
	240 V 3 phase	1.5 hp	3 hp	3 hp
	480 V 3 phase	3 hp	5 hp	7.5 hp
	600 V 3 phase	3 hp	5 hp	10 hp
Contactor type (1)	ac	LC1K06**	LC1K09**	LC1K12**
	dc	LP1K06** or LP4K06**	LP1K09** or LP4K09**	LP1K12** or LP4K12**
Reversing contactor type (1)	ac	LC2K06**	LC2K09**	LC2K12**
(with mechanical interlock)	dc	LP2K06** or LP5K06**	LP2K09** or LP5K09**	LP2K12** or LP5K12**

■ spring terminals

Add the number **3** before the voltage code. Example **LC1K0610**** becomes **LC1K06103****

■ Slip-on connectors, 1 x 6.35 or 2 x 2.8

Add the number **7** before the voltage code. Example **LC1K0610**** becomes **LC1K06107****

■ solder pins for printed circuit boards

Add the number **5** before the voltage code. Example **LC1K0610**** becomes **LC1K06105****

(1) Catalog number completed by adding 01 for N.C. auxiliary contact, or 10 for N.O. auxiliary contact, and adding the coil voltage code from the table below.

Example of complete catalog number: **LC1K0910BD**.

Standard control circuit voltages

ac supply

Contactors LC1K (0.8–1.15 Uc) (0.85–1.1Uc for M7, U7, Q7, N7, Y7 only)

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 and LP2K (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

Low consumption

Contactors LP4K and LP5K (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



Auxiliary contact blocks

■ instantaneous, screw clamp connections (1)

	■ for LC0K, LP0K			■ for LC0K, LC1, LP2K				
Contact arrangement	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 time delay period, 0.5 s after the time delay period

Type On-delay

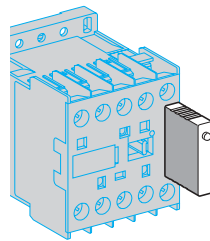
Timing range 1–30 s

Contact arrangement 1 C/O (Form C)

Voltage ac or dc 24–48 V ac 110–240

Catalog number LA2KT2E LA2KT2U

(1) Also available with spring and slip-on terminals.



Suppressor modules

For LC1, LP1K

Type (2)	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	220–250 V
Catalog number	LA4KE1B	LA4KE1E	LA4KE1FC	LA4KE1UG	LA4KC1B	LA4KC1E	LA4KA1U

(2) For details on levels of protection, refer to Catalog #8502CT9901.

Contactors

0.5 to 125 Hp TeSys D-line



Connections

■ screw clamp terminals or connectors

Rated operational voltage		690 V				
Rated operational current	le max AC-3	9 A	12 A	18 A	25 A	32 A
(U _e ≤ 440V)	le AC-1	20 A	25 A	32 A	40 A	50 A
Horsepower ratings	115/120 V single phase	0.5 hp	1 hp	1 hp	2 hp	2 hp
(UL ratings)	220/230 V single phase	1 hp	2 hp	3 hp	3 hp	5 hp
	208 V three phase	2 hp	3 hp	5 hp	7.5 hp	10 hp
	240 V three phase	2 hp	3 hp	5 hp	7.5 hp	10 hp
	480 V three phase	5 hp	7.5 hp	10 hp	15 hp	20 hp
	600 V three phase	7.5 hp	10 hp	15 hp	20 hp	30 hp
Contactor type (1)		LC1D09	LC1D12	LC1D18	LC1D25	LC1D32
Reversing contactor type (with mechanical interlock)		LC2D09	LC2D12	LC2D18	LC2D25	LC2D32

■ spring terminals up to D38 only

Add the number **3** before the voltage code. Example **LC1D09P7** becomes **LC1093P7**

■ ring tongue

Add the number **6** before the voltage code. Example **LC1D09P7** becomes **LC1096P7**

■ slip-on connectors 2 x 6.35 (power) and 1 x 6.35 (control) up to D12 only

Add the number **9** before the voltage code. Example **LC1D09P7** becomes **LC1099P7**

(1) Catalog number to be completed by adding the coil voltage code from the table below. Example of complete catalog number: **LC1D09P7**.



LC1D183



LC1D186



LC1D189

For enclosed version of D-Line starters up to 80 A, reference catalog 8502CT9901.

Standard control circuit voltages

ac supply

Volts	24	42	48	110	115	120	208	220	230	240	380	415	440
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Contactors LC1D09–D150 (D09 through D38 and D150 available with 50/60 Hz only)

50/60 Hz	B7	D7	E7	F7	FE7	G7	LE7	M7	P7	U7	Q7	N7	R7
50 Hz	B5	D5	E5	F5	FE5	G5	-	M5	P5	U5	Q5	N5	R5
60 Hz	B6	-	E6	F6	-	-	L6	M6	-	U6	Q6	-	R6

dc supply

Volts	12	24	36	48	60	72	110	125	220	440
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Contactors LC1D09–D38 (coils with integral suppression device fitted as standard)

0.7–1.25 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	RD
-------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

Contactors LC1D40–D95

0.85–1.1 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	RD
-------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

0.75–1.2 Uc	JW	BW	CW	EW	-	SW	FW	-	MW	-
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Contactors LC1D115 and D150 (coils with integral suppression device fitted as standard)

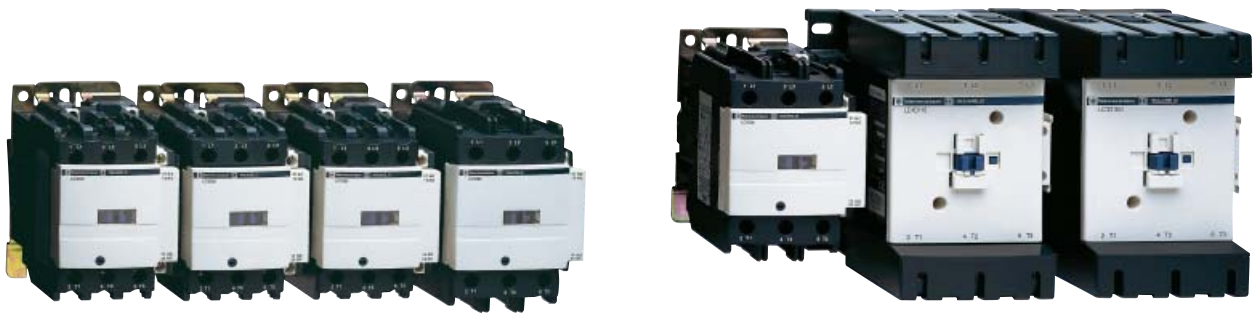
0.75–1.2 Uc	-	BD	-	ED	ND	SD	FD	GD	MD	RD
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Low consumption

Volts dc	5	12	20	24	48	110	120	250
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Contactors LC1D09–D38 (coils with integral suppression device fitted as standard)

0.7–1.25 Uc	AL	JL	ZL	BL	EL	FL	ML	UL
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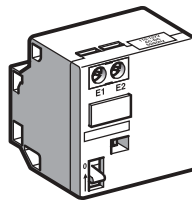


1 000 V on ~ supply, 690 V on ≡ supply							
38 A	40 A	50 A	65 A	80 A	95 A	115 A	150 A
–	60 A	80 A	80 A	125 A	–	200 A	–
2 hp	3 hp	3 hp	5 hp	7.5 hp	7.5 hp	–	–
5 hp	5 hp	7.5 hp	10 hp	15 hp	15 hp	–	–
10 hp	10 hp	15 hp	20 hp	25 hp	25 hp	30 hp	40 hp
10 hp	10 hp	15 hp	20 hp	30 hp	30 hp	40 hp	50 hp
20 hp	30 hp	40 hp	50 hp	60 hp	60 hp	75 hp	100 hp
30 hp	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
<ul style="list-style-type: none"> with an electrical interlocking kit for the contactors 		
LC1D09–D38	LAD9R1V	included
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> without electrical interlocking 		
LC1D09–D38	LAD9R1	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 (50/60 Hz)				
		24 V	42/48 V	110/127 V	220/240 V	380/415 V
LC1D40–D65 ac or dc	LA6DK10•	B	E	F	M	Q
LC1D80–D150 ac, LC1D80 and D115	LA6DK20•	B	E	F	M	Q
LC1D09–D38 ac or dc	LAD6K10•	B	E	F	M	Q

Contactors

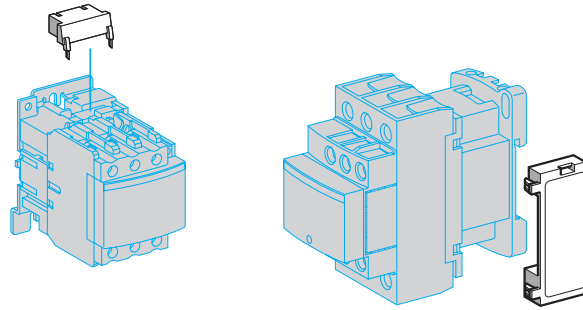
0.5 to 125 Hp

TeSys D-line



Auxiliary contact blocks										
■ instantaneous, for connection by screw clamp terminals						■ time delay				
■ front mounting			■ side mounting			■ front mounting				
Contact	Catalog No.	Contact	Catalog No.	Contact	Catalog No.	Contact	Catalog No.	Type	Range	Catalog No.
Arrangement		Arrangement		Arrangement		Arrangement				
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

Maximum number of auxiliary contacts that can be fitted						
Contactors						
Control circuit	Instantaneous auxiliary contact blocks	Contactors			Time delay	
		Side mounting	Front mounting		Front mounting	
ac	LC1D09–D38	1 contact	2 contacts	4 contacts		
	LC1D40–D95 (50/60 Hz)	1 on LH side and	-	1	or 1	or 1
	LC1D40–D95 (50 or 60 Hz)	1 on each side or	2	and 1	or 1	or 1
	LC1D115 and D150	1 on each side and	2	and 1	or 1	or 1
dc	LC1D115 and D150	1 on LH side	-	and 1	or 1	or 1
	LC1D09–D38	-	-	1	or 1	or 1
	LC1D40–D95	-	1	or 1	or 1	or 1
Low Consumption	LC1D115 and D150	1 on LH side and	-	1	or 1	or 1
	LC1D09–D38	-	-	1	-	-
	LC1DT20–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		Catalog Number
		Volts ac	Volts dc	
Clip-on	D09–D38	12–24 V	-	LAD4VE
		50–127 V	-	LAD4VG
		110–240 V	-	LAD4VU
Screw clamp	D40–D115	24–48 V	-	LA4DE2E
		50–127 V	-	LA4DE2G
		110–250 V	-	LA4DE2U
	D40–D115	-	24–48 V	LA4DE3E
		-	50–127 V	LA4DE3G
		-	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	24 V	-	LAD4TB
		72 V	-	LAD4TS
Screw clamp	D40–D95	24 V	-	LA4DB2B
		72 V	-	LA4DB2S
	D40–D95	-	24 V	LA4DB3B
		-	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	12–24 V	-	LAD4RCE
		110–240 V	-	LAD4RCU
Screw clamp	D40–D150	24–48 V	-	LA4DA2E
		50–127 V	-	LA4DA2G
		110–240 V	-	LA4DA2U
		380–415 V	-	LA4DA2N

For enclosed versions, reference catalog 8502CT9901.

Contactors

30 to 900 Hp TeSys F-line



Rated operational current	le max AC-3 (Ue ≤ 440V) le AC-1 (θ ≤ 40° C)	115 A 200 A	150 A 250 A	185 A 275 A	225 A 315 A	265 A 350 A	330 A 400 A
Rated operational voltage		1 000 V	1 000 V	1 000 V	1 000 V	1 000 V	1 000 V
Horsepower ratings	208 V three phase	30 hp	40 hp	50 hp	(2)	60 hp	75 hp
(UL ratings)	240 V three phase	40 hp	50 hp	60 hp	(2)	75 hp	100 hp
	480 V three phase	75 hp	100 hp	125 hp	(2)	150 hp	200 hp
	600 V three phase	100 hp	125 hp	150 hp	(2)	175 hp	250 hp
Contactor type (1)		LC1F115	LC1F150	LC1F185	LC1F225	LC1F265	LC1F330
Reversing contactor type (1)		LC2F115	LC2F150	LC2F185	LC2F225	LC2F265	-

(1) Basic catalog number to be completed by adding the coil voltage code from the table below. Example of complete catalog number: **LC1F185G7**.

(2) Current rated only.

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
40–400 Hz (coil LX9)	-	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1F265–F330 (0.85–1.1UC)													
40–400 Hz (coil LX1)	B7	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1F400–F630 (0.85–1.1UC)													
40–400 Hz (coil LX1)	-	E7	F7	FE7	G7 (1)	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1F780 (0.85–1.1UC)													
40–400 Hz (coil LX1)	-	-	F7	FE7	F7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1F800 (0.7–1.3UC)													
40–400 Hz (coil LX1)	-	-	FE7	FE7	FE7	-	P7	P7	P7	V7	V7	V7	V7
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 (0.7–1.3UC)													
(coil LX4F)	-	-	FW	FW	MW	MW	-	QW	-				

Example: For a 630 A contactor with a 110 V ~ 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
	100 hp	150 hp	250 hp	(2)	-
	125 hp	200 hp	300 hp	(2)	450 hp
	250 hp	400 hp	600 hp	(2)	800 hp
	300 hp	500 hp	800 hp	(2)	900 hp
	LC1F400	LC1F500	LC1F630	LC1F780	LC1F800

For customer assembly



Auxiliary contact blocks

instantaneous

Contact	Catalog No.	Contact	Catalog No.	Contact	Catalog No.
Arrangement		Arrangement		Arrangement	
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

time delay 1N.O. + 1 N.C.

Type	Range	Catalog No.
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

Contactors 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

Manual motor starters

0.1 to 30 Hp Type GV2ME and GV2P



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				Setting range of thermal trips A	Magnetic tripping current A	Catalog Number	
200 V	230 V	460 V	575 V			Pushbutton	Rotary Handle
-	-	-	-	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 GV2-ME for connection by spring terminals

Add the number **3** to the end of the catalog number. Example **GV2-ME223** (available up to **GV2-ME22**)



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



Accessories for GV2ME and GV2P			
Combination block			
For mounting on	LC1K or LP1K	LC1D09–D38	LAD31, LAD311 or LC1D09–D38
	GV2AF01	GV2AF3	GV2AF4
Sets of 3-pole busbars			
63 A	45 mm pitch	54 mm pitch	72 mm pitch
Number of tap-offs	2	3	4
	GV2G245	GV2G254	GV2G272
	GV2G345	GV2G354	
	4	5	
	GV2G445	GV2G454	GV2G472
		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		

Add-on blocks						
Contact blocks						
Contact arrangement	N.O. or N.C.	N.O. + N.C.	N.O. + N.O.	(fault) + N.C.	N.C. + N.O.	N.O. SPDT
Instantaneous auxiliary contacts						
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 device)	50 Hz			60 Hz		
Voltage	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

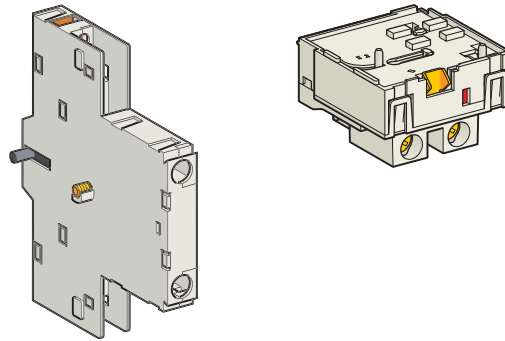
0.5 to 60 Hp Type GV3ME



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 A	Catalog Number
200 V	230 V	460 V	575 V		
-	-	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



Add-on blocks

Contact blocks

Instantaneous auxiliary contacts (1 per device)

Normal early break type contacts	N.C. + N.O. (2)	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
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(1) + 2 volt free terminals.

(2) Normal early break contacts.

Manual motor starters

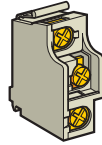
0.5 to 200 Hp Type GV7R



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 A	Catalog Number
230 V	460V	575 V		
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 (Form C)
	GV7AE11

Thermal or magnetic fault discrimination (trip on thermal fault)

	24–48 Vac 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	
	50 Hz					525 V
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
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Phase barriers

Safety accessories used when fitting of shields is impossible	GV7AC04
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Insulating screens

Ensure insulation between the connections and the backplate	GV7AC05
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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

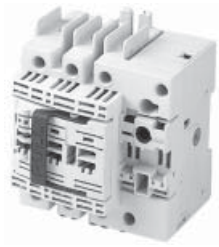
for mounting on enclosure door IP 43	GV7AP05
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Locking device

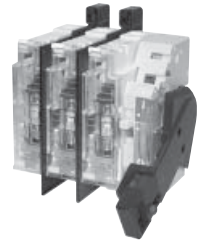
For circuit-breaker not fitted with a rotary handle	GV7V01
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Disconnect switches

Type GS1 fusible and LK3 non-fused



Compact 30A Switch
GS1DDU3



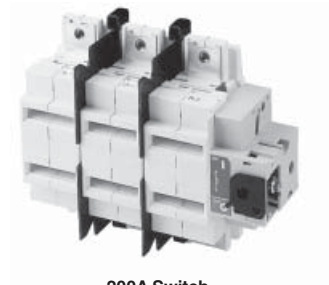
30A Side Handle
GS1EERU30

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



Compact 30A Switch
LK3DU3



200A Switch
LK3MU3

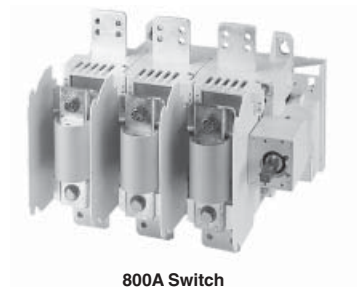
LK3 non-fused disconnect switch 30–1200 A

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) Terminal lugs must be ordered separately.



200A Switch
GS1MU3



800A Switch
GS1TU3

	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



600A Switch
LK3SU3



800A Switch
LK3TU3

	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

0.11 to 11.5 A K-line



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 Class 10 A	Fuses to be used with selected relay—international applications (1)			Catalog Number
	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 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 of relay LRD01–35 or LR3D01–D35 to the contactor	For use on	
	LC1D09–D18	LAD7C1
	LC1D25–D38	LAD7C2

Terminal blocks (2)

For clip-on mounting on 35 mm mounting rail (AM1DP200) or screw clamp	LRD01–35 and LR3D01–D35	LAD7B10
	LRD3***, LR3D3***, LRD35**	LA7D3064 (3)
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
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Stop or electrical reset

Remote (4)	LRD01–35 and LR3D01–D35	LAD703• (5)
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Tripping or electrical reset device

Remote (4)	All D-line relays except LRD01–35 and LR3D01–D35	LA7D03• (5)
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(1) Short circuit protection for North American applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.

(2) Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open "ready-to-tighten" position.

(3) To order a terminal block for connection by lug-clamps, the catalog number becomes LA7D30646.

(4) The time for which the coil of remote tripping or electrical resetting device LA7D03 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.

(5) Catalog number to be completed by adding the code indicating the control circuit voltage.

Standard control circuit voltages

ac supply

Volts	12	24	48	110	125	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	F	G	M	-	-
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Thermal overload relays

0.1 to 140 A 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 a.c. or d.c.

	Relay setting range	Fuses to be used with selected relay—international applications (1)			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–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	(2)	LRD33656	
95–120 A	125 A	200 A	200 A	(2)	LRD33676	
110–140 A	160 A	250 A	200 A	(2)	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	LC1D65–D80	LR2D3563

(1) Short circuit protection for North American applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.

(2) 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 unbalanced loads, with connection by screw clamp terminals, change the prefix in the catalog number above from LRD (except LRD-4***) to LR3D. Example LRD01 becomes LR3D01.

Electronic thermal overload relays

60 to 630 A Type LR9



For use with contactor	LC1D	LC1F
Motor current	60–150 A	30–630 A
Basic catalog number, to be completed	LR9D	LR9F

Relay setting range	Fuse to be used with selected relay (international applications (1))		For mounting beneath contactor LC1	Compensated and differential		
	aM	gG		Class 10	Class 20	Class 10 or 20 (selectable)
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 (2)	LA7D03• (3)	
Reset by flexible cable (length 0.5 m)	LA7D305	
Adapter for door interlock mechanism		LA7D1020

Operating head for pushbutton

Spring return	ZA2BL639	ZA2BL432
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Rod with snap-off end

Adjustable from 17 to 120 mm	ZA2BZ13	
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Insulated terminal blocks

For relays LR9F5•57, F5•63, F5•67, F5•69	Set of 2 blocks	
	LA9F103	

(1) Short circuit protection for North American applications: circuit breakers selected in accordance with NEC and local codes; fuses selected with maximum of 400% full load current.

(2) 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.

(3) Catalog number to be completed by adding the coil voltage code, see page 1-22.

Electronic protection relays for use with PTC thermistor probes

0 to 800 A Type LT3



For use with contactor	LC1D or LC1F
Motor current	No limit
Connection	Cage connectors
Basic catalog number, to be completed	LT3S

Protection units with automatic reset with thermistor short-circuit detection

■ without fault memory

	Voltage	Output Contact	Catalog Number
On front panel: fault and voltage signalling indicator			
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

	Voltage	Output Contact	Catalog Number
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

Accessories

PTC thermistor probes for LT3 and LT6 relays

Normal operating temperature (NOT)	90 °C	110 °C	120 °C	130 °C	140 °C	150 °C	160 °C	170 °C
Integrated triple probes	DA1TT090	DA1TT110	DA1TT120	DA1TT130	DA1TT140	DA1TT150	DA1TT160	DA1TT170
Normal operating temperature (NOT)		60 °C	70 °C	80 °C	90 °C	100 °C		
Surface probes	DA1TS060	DA1TS070	DA1TS080	DA1TS090	DA1TS100			

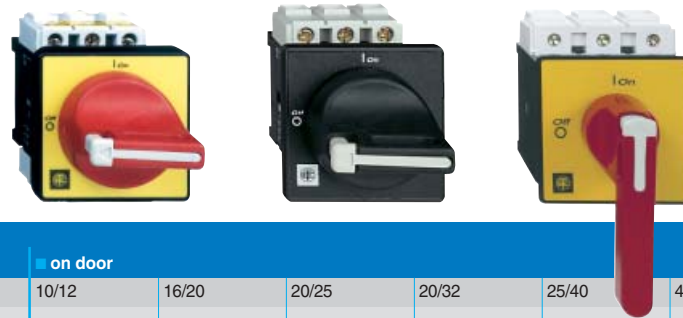
(1) Comprising 2 x 3-1/2" diskettes, 1 x 2 m connection cable with 2 SUB-D 9-pin connectors (female-female)

Manual motor control switches 10 to 175 A

Mini Vario™ and Vario™ switches



Mini-Vario switch Mounting	on door		at back of an enclosure	
	Switch rating UL/IEC (A)	10/12	16/20	10/12
Red handle (Ø 4 to Ø 8 shank)				
Yellow front plate 60 x 60 mm	VCDN12	VCDN20	VCCDN12	VCCDN20
Black handle (Ø 4 to Ø 8 shank)				
Black front plate 60 x 60 mm	VBDN12	VBDN20		
Switch base only	VN12	VN20		



Vario switch disconnectors Mounting	on door							
	Switch rating UL/IEC (A)	10/12	16/20	20/25	20/32	25/40	45/63	63/80
Red handle (Ø 4 to Ø 8 shank)								
Yellow front plate 60 x 60 mm	VCD02	VCD01	VCD0	VCD1	VCD2			
4 screw mounting	VCF02	VCF01	VCF0	VCF1	VCF2	VCF3	VCF4	
Long red handle (Ø 4 to Ø 8 shank)								
Yellow front plate 90 x 90 mm 4 screw mounting								
Black handle (Ø 4 to Ø 8 shank)								
Black front plate 60 x 60 mm	VBD02	VBD01	VBD0	VBD1	VBD-2			
4 screw mounting	VBF02	VBF01	VBF0	VBF1	VBF2	VBF3	VBF4	
Long black handle (Ø 4 to Ø 8 shank)								
Black front plate 90 x 90 mm 4 screw mounting								
Switch base only	V02	V01	V0	V1	V2	V3	V4	



Add-on modules							
Main pole modules							
Rating UL/IEC (A)	10/12	16/20	20/25	20/32	25/40	45/63	63/80
	VZ02	VZ01	VZ0	VZ1	VZ2	VZ3	VZ4
Auxiliary contact block modules							
Contact types	N.O. + N.C.				N.O. + N.O.		
	VZ7				VZ20		



■ at back of an enclosure											
100/125	115/175	10/12	16/20	20/25	20/32	25/40	45/63	63/80	100/125	115/175	
		VCCD02	VCCD01	VCCD0	VCCD1	VCCD2					
		VCCF02	VCCF01	VCCF0	VCCF1	VCCF2	VCCF3	VCCF4			
VCF5	VCF6								VCCF5	VCCF6	
VBF5	VBF6										
V5	V6	V02	V01	V0	V1	V2	V3	V4	V5	V6	

TeSys starter-controller

0 to 32 A Type U



Power base

for D.O.L. starter

Connection by screw clamp

	200/208V	230/240 V	460 V	575/600 V
Operational voltage	200/208V	230/240 V	460 V	575/600 V
Horsepower ratings (UL ratings)	3	3	7.5	10
	10	10	20	25

Non reversing

Catalog number

Current rating

Reversing

Catalog number

Current rating

LUB12	12 A	LU2B12**	12 A
LUB32	32 A	LU2B32**	32 A



Add-on blocks

Contact blocks

Signalling		Contact					
■ status of starter-controller power poles		N.O. (53-54)		N.C. (95-96)		N.O. (97-98)	
■ fault				N.O. (17-18)		N.C. (95-96)	
■ control handle in position O						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	



Function modules

■ parallel wiring	LUF00	
■ alarm	LUFW10	
■ communication	As-i	Modbus
	ASILUFC5	LULC031
■ indication of motor load		4-20 mA
		LUFV2
■ fault differentiation and reset	manual reset	automatic reset
	LUFDH20	LUFDA10





Standard



Advanced



Multifunction

Control units				
standard		Class 10		
Setting range	Clip-in mounting on power base	Catalog Number (1)		
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		three-phase	single-phase	three-phase
0.15–0.6	12 and 32	LUCBX6**	LUCCX6**	LUCDX6**
0.35–1.4	12 and 32	LUCB1X**	LUCC1X**	LUCD1X**
1.25–5	12 and 32	LUCB05**	LUCC05**	LUCD05**
3–12	12 and 32	LUCB12**	LUCC12**	LUCD12**
4.5–18	32	LUCB18**	LUCC18**	LUCD18**
8–32	32	LUCB32**	LUCC32**	LUCD32**
multifunction		Class 5 to 35		
0.15–0.6	12 and 32	LUCMX6BL		
0.35–1.4	12 and 32	LUCM1XBL		
1.25–5	12 and 32	LUCM05BL		
3–12	12 and 32	LUCM12BL		
4.5–18	32	LUCM18BL		
8–32	32	LUCM32BL		

(1) Basic catalog number to be completed by adding the voltage code from the table below.

Standard control circuit voltages			
Volts	24	48–72	110–240
dc	BL	-	-
ac	B	-	-
dc or ac	-	ES (1)	FU (2)

(1) dc 48–72 V, ac 48 V.

(2) dc 110–220 V, ac 110–240 V.

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: 8502 SAO 12 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 no. Complete with code indicating control circuit voltage (1) and optional Forms (2)	Basic catalog no. 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	
	<i>Hp kW</i>	<i>Hp kW</i>	<i>Hp kW</i>	<i>Hp kW</i>	A
00	1.5 1.1	1.5 1.1	2 1.5	2 1.5	9
0	3 2.2	3 2.2	5 3.7	5 3.7	18
1	7.5 5.5	7.5 5.5	10 7.5	10 7.5	27
2	10 7.5	15 11	25 18.5	25 18.5	45
3	25 18.5	30 22	50 37	50 37	90
4	40 30	50 37	100 75	100 75	135
5	75 55	100 75	200 150	200 150	270
6	150 110	200 150	400 300	400 300	540
7	–	300 220	600 450	600 450	810
					8502 SAO 12 ●●●
					8502 SBO 2 ●●●
					8502 SCO 2 ●●●
					8502 SDO 2 ●●●
					8502 SEO 2 ●●●
					8502 SFO 2 ●●●
					8502 SGO 2 ●●●
					8502 SHO 2 ●●●
					8502 SJO 2 ●●●
					8536 SAO 12 ●●●
					8536 SBO 2 ●●●
					8536 SCO 3 ●●●
					8536 SDO 1 ●●●
					8536 SEO 1 ●●●
					8536 SFO 1 ●●●
					8536 SGO 1 ●●●
					8536 SHO 2 ●●●
					8536 SJO 2 ●●●

(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:

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	40–135	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 no. (7)	Suffix to be added to the starter catalog no. (7)
Base unit, Trip class 10	(6)	8536 S●● 8736 S●●	H10	H11
Base unit, Trip class 20	(6)	8536 S●● 8736 S●●	H20	H21
Feature unit	(6)	8536 S●● 8736 S●●	H30	H31

(7) Example: 8536 SAO 12 V01 H10.

(8) Only available with feature units.

(9) Only available with feature units with auxiliary contact.

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: 8702 SAO 4 V01S.

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 no. Complete with code indicating control circuit voltage (1) and optional Forms (2)				Basic catalog no. 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	Vertical		Side by side		Vertical		Side by side	
	Hp kW	Hp kW	Hp kW	Hp kW	Hp kW	Hp kW	Hp kW									
00	1.5 1.1	1.5 1.1	2 1.5	2 1.5	9	–	8702 SBO 12 ●●●	8702 SBO 4 ●●●	–	8702 SBO 4 ●●●	–	8736 SBO 10 ●●●	8736 SBO 4 ●●●			
0	3 2.2	3 2.2	5 3.7	5 3.7	18	8702 SCO 7 ●●●	8702 SCO 8 ●●●	8702 SDO 1 ●●●	8702 SDO 2 ●●●	8702 SEO 1 ●●●	8702 SEO 2 ●●●	8736 SCO 7 ●●●	8736 SCO 8 ●●●			
1	7.5 5.5	7.5 5.5	10 7.5	10 7.5	27	8702 SFO 1 ●●●	8702 SFO 3 ●●●	8702 SGO 1 ●●●	8702 SGO 3 ●●●	8702 SHO 1 ●●●	8702 SJO 1 ●●●	8736 SDO 1 ●●●	8736 SDO 2 ●●●			
2	10 7.5	15 11	25 18.5	25 18.5	45	–	–	–	–	–	–	8736 SEO 1 ●●●	8736 SEO 2 ●●●			
3	25 18.5	30 22	50 37	50 37	90	–	–	–	–	–	–	8736 SFO 1 ●●●	8736 SFO 3 ●●●			
4	40 30	50 37	100 75	100 75	135	–	–	–	–	–	–	8736 SGO 1 ●●●	8736 SGO 3 ●●●			
5	75 55	100 75	200 150	200 150	270	–	–	–	–	–	–	8736 SHO 1 ●●●	8736 SJO 1 ●●●			
6	150 110	200 150	400 300	400 300	540	–	–	–	–	–	–	–	–			
7	–	300 220	600 450	600 450	810	–	–	–	–	–	–	–	–			

(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 no. (7)	Suffix to be added to the starter catalog no. (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: 8536 SAO 12 V01 B20.

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 of 3-phase motors 50/60 Hz					Fuse size	Basic catalog no. Complete with code indicating control circuit voltage (1) optional Forms (2) and H code (3)		Basic catalog no. Complete with code indicating control circuit voltage (1) and optional Forms (2)		Basic catalog no. Complete with code indicating control 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)						
	<i>Hp</i>	<i>kW</i>	<i>Hp</i>	<i>kW</i>	<i>Hp</i>	<i>kW</i>	<i>Hp</i>	<i>kW</i>	A			
0	3	2.2	3	2.2	–	–	–	–	30	8538 SBG 12 ●●●	8538 SBG 32 ●●●	
	–	–	–	–	5	3.75	5	3.75	30	8538 SBG 13 ●●●	8538 SBG 33 ●●●	
1	5	3.75	5	3.75	–	–	–	–	30	8538 SCG 12 ●●●	8538 SCG 32 ●●●	
	–	–	–	–	10	7.5	10	7.5	30	8538 SCG 14 ●●●	8538 SCG 34 ●●●	
	7.5	5.5	7.5	5.5	–	–	–	–	60	8538 SCG 13 ●●●	8538 SCG 33 ●●●	
2	10	7.5	15	11	–	–	–	–	60	8538 SDG 12 ●●●	8538 SDG 32 ●●●	
	–	–	–	–	15	11	15	11	30	8538 SDG 16 ●●●	8538 SDG 36 ●●●	
	–	–	–	–	25	18.5	25	18.5	60	8538 SDG 14 ●●●	8538 SDG 34 ●●●	
3	20	15	25	18.5	–	–	–	–	100	8538 SEG 15 ●●●	8538 SEG 35 ●●●	
	–	–	–	–	50	37	50	37	100	8538 SEG 13 ●●●	8538 SEG 33 ●●●	
	25	18.5	30	22	–	–	–	–	200	8538 SEG 12 ●●●	8538 SEG 32 ●●●	
4	40	30	50	37	–	–	–	–	200	8538 SFG 15 ●●●	8538 SFG 35 ●●●	
	–	–	–	–	100	75	100	75	200	8538 SFG 13 ●●●	8538 SFG 33 ●●●	
5	75	55	100	75	–	–	–	–	400	8538 SGG 15 ●●●	8538 SGG 35 ●●●	
	–	–	–	–	200	150	200	150	400	8538 SGG 13 ●●●	8538 SGG 33 ●●●	
6	150	110	200	150	–	–	–	–	600	8538 SHG 13 ●●●	8538 SHG 33 ●●●	
	–	–	–	–	400	300	400	300	600	8538 SHG 12 ●●●	8538 SHG 32 ●●●	

(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: 8538 SBG 12 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).

Solid state overload Relays



Form adders			Motor Logic® solid state relays
For use with	Current range	Description	Suffix to be added to the starter catalog no. (9)
8538 S●G 1●/S●A 1●/S●A 2● (except 8538 SDG 16/SDA 16/SDA 26)	(8)	Base unit, Trip Class 10	H10
	(8)	Base unit, Trip Class 20	H20
	(8)	Feature unit	H30
8538 SBG 12/13, 8538 SBA 12/22/13/23, 8538 SCG 12/14, 8538 SCA 12/22/14/24, 8538 SDG 16, 8538 SDA 16/26	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
8538 SCG 12/14 8538 SCA 12/22/14/24, 8538 SDG 16 8538 SDA 16/26	6-18 A	Base unit, Trip Class 10	H100
	6-18 A	Base unit, Trip Class 20	H200
	6-18 A	Feature unit	H300
8538 SDG 16, 8538 SDA 16/26	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: **8538 SBG 12 V01 H10**.

(10) Only available with feature units.

(11) Only available with feature units with auxiliary contact.

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: 8539 SCG 41 V02 H10S.



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 no. 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)			
	<i>Hp kW</i>	<i>Hp kW</i>	<i>Hp kW</i>	<i>Hp kW</i>			
0	0.3 0.2	0.3 0.2	1 0.75	1 0.75	GJL 36003 MO1	8539 SBG 41 ●●●	
	1 0.75	1 0.75	3 2.2	3 2.2	GJL 36007 MO2	8539 SBG 42 ●●●	
	3 2.2	3 2.2	5 3.7	5 3.7	GJL 36015 MO3	8539 SBG 43 ●●●	
1	0.3 0.2	0.3 0.2	1 0.75	1 0.75	GJL 36003 MO1	8539 SCG 41 ●●●	
	1 0.75	1 0.75	3 2.2	3 2.2	GJL 36007 MO2	8539 SCG 42 ●●●	
	3 2.2	3 2.2	7.5 5.5	10 7.5	GJL 36015 MO3	8539 SCG 43 ●●●	
	5 3.7	7.5 5.5	10 7.5	– –	GJL 36030 MO4	8539 SCG 44 ●●●	
	7.5 5.5	– –	– –	– –	GJL 36050 MO5	8539 SCG 45 ●●●	
2	3 2.2	3 2.2	7.5 5.5	10 7.5	GJL 36015 MO3	8539 SDG 41 ●●●	
	5 3.7	7.5 5.5	15 11	20 15	GJL 36030 MO4	8539 SDG 42 ●●●	
	10 7.5	10 7.5	25 18.5	25 18.5	GJL 36050 MO5	8539 SDG 43 ●●●	
	– –	15 11	– –	– –	GJL 36075 MO6	8539 SDG 44 ●●●	
3	– –	– –	25 18.5	30 22	GJL 36050 MO5	8539 SEG 41 ●●●	
	25 18.5	30 22	30 22	50 37	FAL 36100 18M	8539 SEG 42 ●●●	
4	30 22	– –	75 55	100 75	KAL 36250 25M	8539 SFG 42 ●●●	
	– –	40 30	– –	– –	KAL 36250 26M	8539 SFG 43 ●●●	
	– –	50 37	100 75	– –	KAL 36250 29M	8539 SFG 44 ●●●	
5	– –	– –	– –	125 90	KAL 36250 29M	8539 SGG 41 ●●●	
	50 37	– –	– –	150 110	KAL 36250 30M	8539 SGG 42 ●●●	
	– –	60 45	125 90	– –	KAL 36250 31M	8539 SGG 43 ●●●	
	60 45	75 55	150 110	200 150	LAL 36400 32M	8539 SGG 44 ●●●	
	75 55	– –	– –	– –	LAL 36400 33M	8539 SGG 45 ●●●	
	– –	100 75	200 150	– –	LAL 36400 35M	8539 SGG 46 ●●●	
6	– –	– –	– –	250 185	LAL 36400 35M	8539 SHG 42 ●●●	
	100 75	– –	250 185	300 220	LAL 36400 36M	8539 SHG 43 ●●●	
	125 90	150 110	300 220	400 300	MAL 36600 40M	8539 SHG 44 ●●●	
	150 110	– –	350 250	– –	MAL 36600 42M	8539 SHG 45 ●●●	
	– –	200 150	400 300	– –	MAL 36600 44M	8539 SHG 46 ●●●	
7	– –	– –	– –	500 370	MAL 36800 44M	8539 SJG 41 ●●●	
	– –	250 185	500 370	600 450	MAL 36800 45M	8539 SJG 42 ●●●	
	– –	300 220	600 450	– –	MAL 361000 47M	8539 SJG 43 ●●●	

(2) For optional Forms, please consult your nearest Square D/Schneider Electric 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).

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: 8539 SBG 1 V02 H10S.



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 no. 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	8539 SBG 1 ●●●	
	–	–	5 3.7	5 3.7	–	FAL	15	8539 SBG 2 ●●●	
	3 2.2	3 2.2	–	–	–	FAL	20	8539 SBG 3 ●●●	
1	5 3.7	–	–	–	–	FAL	35	8539 SCG 5 ●●●	
	7.5 5.5	–	–	–	–	FAL	50	8539 SCG 2 ●●●	
	–	5 3.7	–	–	–	FAL	30	8539 SCG 1 ●●●	
	–	7.5 5.5	–	–	–	FAL	45	8539 SCG 6 ●●●	
	–	–	7.5 5.5	10 7.5	–	FAL	20	8539 SCG 3 ●●●	
	–	–	10 7.5	–	–	FAL	25	8539 SCG 7 ●●●	
	–	–	–	7.5 5.5	–	FAL	15	8539 SCG 8 ●●●	
2	10 7.5	10 7.5	–	–	–	FAL	60	8539 SDG 1 ●●●	
	–	15 11	–	–	–	FAL	80	8539 SDG 7 ●●●	
	–	–	7.5 5.5	–	–	FAL	20	8539 SDG 3 ●●●	
	–	–	20 15	25 18.5	–	FAL	60	8539 SDG 4 ●●●	
	–	–	25 18.5	–	–	FAL	70	8539 SDG 5 ●●●	
	–	–	–	15 11	–	FAL	35	8539 SDG 8 ●●●	
	–	–	–	20 15	–	FAL	45	8539 SDG 9 ●●●	
3	15 11	20 15	40 30	50 37	–	FAL	90	8539 SEG 3 ●●●	
	20 15	25 18.5	50 37	–	–	FAL	100	8539 SEG 1 ●●●	
	25 18.5	30 22	–	–	–	KAL	110	8539 SEG 5 ●●●	
	–	–	30 22	40 30	–	FAL	80	8539 SEG 6 ●●●	
	–	–	–	30 22	–	FAL	60	8539 SEG 4 ●●●	
4	30 22	–	75 55	–	–	KAL	125	8539 SFG 3 ●●●	
	40 30	50 37	100 75	–	–	KAL	200	8539 SFG 4 ●●●	
	–	40 30	–	100 75	–	KAL	150	8539 SFG 1 ●●●	
	–	–	60 45	75 55	–	KAL	110	8539 SFG 5 ●●●	
	–	–	–	60 45	–	FAL	100	8539 SFG 6 ●●●	
5	50 37	–	–	150 110	–	LAL	200	8539 SGG 6 ●●●	
	60 45	75 55	150 110	200 150	–	LAL	250	8539 SGG 1 ●●●	
	75 55	–	–	–	–	LAL	300	8539 SGG 4 ●●●	
	–	60 45	125 90	–	–	LAL	225	8539 SGG 3 ●●●	
	–	100 75	200 150	–	–	LAL	350	8539 SGG 2 ●●●	
	–	–	–	125 90	–	KAL	200	8539 SGG 7 ●●●	
6	100 75	125 90	250 185	300 220	–	MAL	450	8539 SHG 4 ●●●	
	125 90	150 110	300 220	400 300	–	MAL	600	8539 SHG 3 ●●●	
	150 110	–	350 250	–	–	MAL	600	8539 SHG 5 ●●●	
	–	200 150	400 300	–	–	MAL	800	8539 SHG 7 ●●●	
	–	–	–	250 185	–	MAL	250	8539 SHG 6 ●●●	
	–	–	–	350 250	–	MAL	500	8539 SHG 2 ●●●	
7	–	250 185	500 370	600 450	–	MAL	900	8539 SJG 2 ●●●	
	–	300 220	600 450	–	–	MAL	1000	8539 SJG 3 ●●●	
	–	–	–	500 370	–	MAL	800	8539 SJG 1 ●●●	

(2) For optional Forms, please consult your nearest Square D/Schneider Electric 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).

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 no.	Catalog no.
00C (1)	3–9 A	Trip Class 10	9065 SSC 10	9065 SSC 10
		Trip Class 20	9065 SSC 20	9065 SSC 20
0 (1)	6–18 A	Trip Class 10	9065 SS 010	9065 SS 010
		Trip Class 20	9065 SS 020	9065 SS 020
1 (1)	9–27 A	Trip Class 10	9065 SS 110	9065 SS 110
		Trip Class 20	9065 SS 120	9065 SS 120
2	15–45 A	Trip Class 10	9065 SS 210	9065 SR 210
		Trip Cass 20	9065 SS 220	9065 SR 220
3	30–90 A	Trip Class 10	9065 SS 310	9065 SR 310
		Trip Class 20	9065 SS 320	9065 SR 320
4	45–135 A	Trip Class 10	9065 SS 410	9065 SR 410
		Trip Cass 20	9065 SS 420	9065 SR 420

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 no.	Catalog no.
00B (1)	1.5–4.5 A	Trip Class 10/20	9065 SFB 20	9065 SFB 20
00C (1)	3–9 A	Trip Class 10/20	9065 SFC 20	9065 SFC 20
0 (1)	6–18 A	Trip Class 10/20	9065 SF 020	9065 SF 020
1 (1)	9–27 A	Trip Class 10/20	9065 SF 120	9065 SF 120
2	15–45 A	Trip Class 10/20	9065 SF 220	9065 ST 220
3	30–90 A	Trip Class 10/20	9065 SF 320	9065 ST 320
4	45–135 A	Trip Class 10/20	9065 SF 420	9065 ST 420
5 (3)	90–270 A	Trip Class 10/20	–	9065 ST 520
6(3)	180–540 A	Trip Class 10/20	–	9065 ST 620
7 (3)	270–810 A	Trip Class 10/20	–	9065 ST 720

(1) For power connection kit, see table on page opposite.

(2) For Type S starter catalog numbers, see page 1-30.

(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.

Motor Logic® PLUS programmable units



Type			Base units for separate mounting
NEMA Size	Current range	Voltage	Catalog no.
3-phase	A	V	
0	0.5–2.3	200–480	9065 SPB 4
		600	9065 SPB 6
0	2–9	200–480	9065 SPC 4
		600	9065 SPC 6
1	6–27	200–480	9065 SP 14
		600	9065 SP 16
2	10–45	200–480	9065 SP 24
		600	9065 SP 26
3	20–90	200–480	9065 SP 34
		600	9065 SP 36
4 (1)	60–135	200–480	9065 SP 44
		600	9065 SP 46
5 (2)	120–270	200–480	9065 SP 54
		600	9065 SP 56
6 (3)	240–540	200–480	9065 SP 64
		600	9065 SP 66

(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 no.
Lug connector kits	For separate mounting For mounting on Type S starters	9065 S● (Sizes 00B/00C/0/1)	9999 LLO 9999 LBO

NEMA Type

SQUARE D

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 current	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		115 V single-phase	230 V single-phase	230 V 3-phase	460/575 V 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	8910 DP 11 ●●●	8910 DP 12 ●●●
25	125	125	100	30	2	1.5	3	2.2	-	-	-	-	1 or 2	8910 DP 21 ●●●	8910 DP 22 ●●●
30	150	150	120	40	2	1.5	(1)	(1)	-	-	-	-	1 or 2	8910 DP 31 ●●●	8910 DP 32 ●●●
40	240	200	160	50 (2)	2	1.5	5	3.7	-	-	-	-	1 or 2	8910 DP 41 ●●●	8910 DP 42 ●●●

(1) 3 hp (2.2 kW) for 1-pole device; 5 hp (3.7 kW) for 2-pole device.

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				N.O. poles					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	460/575 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	8910 DPA 12 ●●●
													3	8910 DPA 13 ●●●
													4	8910 DPA 14 ●●●
25	150	125	100	35	2	1.5	3	2.2	7.5	5.5	10	7.5	2	8910 DPA 22 ●●●
													3	8910 DPA 23 ●●●
													4	8910 DPA 24 ●●●
30	180	150	120	40	2	1.5	5	3.7	10	7.5	15	11	2	8910 DPA 32 ●●●
													3	8910 DPA 33 ●●●
													4	8910 DPA 34 ●●●
40	240	200	160	50	3	2.2	7.5	5.5	10	7.5	20	15	2	8910 DPA 42 ●●●
													3	8910 DPA 43 ●●●
													4	8910 DPA 44 ●●●
50	300	250	200	62	3	2.2	10	7.5	15	11	30	22	2	8910 DPA 52 ●●●
													3	8910 DPA 53 ●●●
													4	8910 DPA 54 ●●●
60	360	300	240	75	5	3.7	10	7.5	25	18.5	30	22	2	8910 DPA 62 ●●●
													3	8910 DPA 63 ●●●
													4	8910 DPA 64 ●●●
75	450	375	300	94	5	3.7	15	11	25	18.5	40	30	2	8910 DPA 72 ●●●
													3	8910 DPA 73 ●●●
													4	8910 DPA 74 ●●●
90	540	450	360	120	7.5	5.5	20	15	30	22	50	37	2	8910 DPA 92 ●●●
													3	8910 DPA 93 ●●●
													4	8910 DPA 94 ●●●
120	720	600	480	120	10	7.5	25	18.5	40	30	75	55	2	8910 DPA 122 ●●●
													3	8910 DPA 123 ●●●
													4	8910 DPA 124 ●●●

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								N.O. poles (3)	N.C. poles (7)	Basic catalog number. Complete with code indicating control circuit voltage (1)
	277 V	480 V	575 V		115 V	230 V	230 V	460/575 V	3-phase	3-phase	3-phase				
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	2	8910 DPA 14 ●●● Y392
25	150	125	100	35	2	1.5	3	2.2	7.5	5.5	10	7.5	2	2	8910 DPA 24 ●●● Y392
30	180	150	120	40	2	1.5	5	3.7	10	7.5	15	11	2	2	8910 DPA 34 ●●● Y392
40	240	200	160	50	3	2.2	7.5	5.5	10	7.5	20	15	2	2	8910 DPA 44 ●●● Y392

Accessories

Type		External auxiliary contacts	
For use on	Description	Catalog number	
8910 DPA	1 N.O. contact	9999 D10	
	1 N.C. contact	9999 D01	
	1 N.O. and 1 N.C. contacts	9999 D11	
	2 N.O. contacts	9999 D20	
8910 DPA 122/123	1 N.O. contact	9999 SX6	
	1 N.C. contact	9999 SX7	
	1 N.O. and 1 N.C. isolated contacts	9999 SX8	
	1 N.O. overlapping contact	9999 SX9	
	1 N.C. overlapping contact	9999 SX10	

(1) Standard control circuit voltages for 8910 DP/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 8910 DPA 122/DPA 123:

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 8910 DP 11 to 8910 DP 31 single-pole devices.

(5) Not available for type 8910 DP single and 2-pole devices.

(6) Only available on types 8910 DPA 122/DPA 123.

(7) N.C. poles on outside. N.C. poles "open" before N.O. poles "close".

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 no. Complete with code indicating control circuit voltage (1)	Basic catalog no. Complete with code indicating control circuit voltage (1)
20 (30 A fluorescent ballast load)	2	8903 LO 20 ●●●	8903 LXO 20 ●●●
	3	8903 LO 30 ●●●	8903 LXO 30 ●●●
	4	8903 LO 40 ●●●	8903 LXO 40 ●●●
	6	8903 LO 60 ●●●	8903 LXO 60 ●●●
	8	8903 LO 80 ●●●	8903 LXO 80 ●●●
	10	8903 LO 1000 ●●●	8903 LXO 1000 ●●●
	12	8903 LO 1200 ●●●	8903 LXO 1200 ●●●

(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 no. Complete with code indicating control circuit voltage (1)	Basic catalog no. Complete with code indicating control circuit voltage (1)
30	2	8903 SMO 1 ●●●	8903 SMO 10 ●●●
	3	8903 SMO 2 ●●●	8903 SMO 11 ●●●
	4	8903 SMO 3 ●●●	8903 SMO 12 ●●●
	5	8903 SMO 4 ●●●	8903 SMO 13 ●●●
	60	2	8903 SPO 1 ●●●
60	3	8903 SPO 2 ●●●	8903 SPO 11 ●●●
	4	8903 SPO 3 ●●●	8903 SPO 12 ●●●
	5	8903 SPO 4 ●●●	8903 SPO 13 ●●●
100	2	8903 SQO 1 ●●●	8903 SQO 10 ●●●
	3	8903 SQO 2 ●●●	8903 SQO 11 ●●●
	4	8903 SQO 3 ●●●	8903 SQO 12 ●●●
	5	8903 SQO 4 ●●●	8903 SQO 13 ●●●
200	2	8903 SVO 1 ●●●	8903 SVO 10 ●●●
	3	8903 SVO 2 ●●●	8903 SVO 11 ●●●
	4	8903 SVO 3 ●●●	8903 SVO 12 ●●●
	5	8903 SVO 4 ●●●	–
300	2	8903 SXO 1 ●●●	8903 SXO 13 ●●●
	3	8903 SXO 2 ●●●	8903 SXO 14 ●●●
400 (5)	2	8903 SYO 1 ●●●	8903 SYO 16 ●●●
	3	8903 SYO 2 ●●●	8903 SYO 17 ●●●
600 (5)	2	8903 SZO 1 ●●●	8903 SZO 18 ●●●
	3	8903 SZO 2 ●●●	8903 SZO 19 ●●●
800 (5)	2	8903 SJO 1 ●●●	8903 SJO 10 ●●●
	3	8903 SJO 2 ●●●	8903 SJO 11 ●●●

(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. **8903 LO 22**.

There is a maximum of eight N.C. poles for Type **8903 L** contactors and a maximum of six N.C. poles for Type **8903 LX** 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.

Manual starters and switches

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 no.	Catalog no.
		115-230 Vac		115-230 Vdc		277 Vac					
		Hp	kW	Hp	kW	Hp	kW	A			
Toggle operator	1	1	0.75	-	-	1	0.75	16	Standard	2510 FG 1	2510 FG 5
									With red pilot light	2510 FG 1P	2510 FG 5P
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard	2510 FG 2	2510 FG 6
									With red pilot light	2510 FG 2P	2510 FG 6P
Removable key	1	1	0.75	-	-	1	0.75	16	Standard	2510 FG 3	-
									With red pilot light	2510 FG 3P	-
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard	2510 FG 4	-
									With red pilot light	2510 FG 4P	-

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 no.	Catalog no.
		115-230 Vac		115-230 Vdc		277 Vac					
		Hp	kW	Hp	kW	Hp	kW	A			
Toggle operator	2 (3)	1	0.75	0.75	0.55	1	0.75	16	Standard	2510 FG 02	2510 FG 22
									With red pilot light	2510 FG 02P	2510 FG 22P
(1) (2)											
Removable key	2 (3)	1	0.75	0.75	0.55	1	0.75	16	With red pilot light	2510 FG 04P	2510 FG 44P
(1) (2)											

Type										Duplex units, starters with "AUTO-OFF-HAND" selector switch
Type of operator	Number of poles	Maximum power of single-phase motors						Maximum continuous current	Features	Catalog no.
		115-230 Vac		115-230 Vdc		277 Vac				
		Hp	kW	Hp	kW	Hp	kW	A		
Toggle operator	1	1	0.75	-	-	1	0.75	16	Standard	2510 FG 71
									With red pilot light	2510 FG 71P
(1)	2	1	0.75	0.75	0.55	1	0.75	16	Standard	2510 FG 72
									With red pilot light	2510 FG 72P
Removable key	2	1	0.75	0.75	0.55	1	0.75	16	With red pilot light	2510 FG 74P
(1)										

(1) One thermal unit is required

(2) For two starters in one enclosure, two thermal units are required.

(3) Two poles for each starter.

NEMA Type

SQUARE D

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	Features	Catalog no.					
		115 Vac		230 Vac		460 Vac		575 Vac		90 Vdc				115 Vdc		230 Vdc		
		Hp	kW	Hp	kW	Hp	kW	Hp	kW	Hp	kW	Hp	kW	Hp	kW	A		
Toggle operator	2 (Single phase)	2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5	1.1	30	Standard	2510 KG 1
		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	2510 KG 1A
		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	2510 KG 1B
	3 (Three phase)	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	2510 KG 2
		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	2510 KG 2B
		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	2510 KG 2C
	2 (Single phase)	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	2510 KG 5
		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	2510 KG 5A
		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	2510 KG 5B
	3 (Three phase)	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	2510 KG 6
		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	2510 KG 6B
		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	2510 KG 6C
Removable key	2 (Single phase)	2	1.5	2	1.5	3	2.2	3	2.2	1	0.75	2	1.5	1.5	1.1	30	Standard	2510 KG 3
		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	2510 KG 3A
		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	2510 KG 3B
	3 (Three phase)	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	2510 KG 4
		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	2510 KG 4B
		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	2510 KG 4C

(1) With red pilot light

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 no.
			Motor voltage			Max. power				
			V	DC		3-phase		Single-phase		
				Hp	kW	Hp	kW	Hp	kW	
Toggle operator	AC 2	M-0	115	–	–	–	–	1	0.75	2510 TBG 1
			230	–	–	–	–	2	1.5	
		M-1	115	–	–	–	–	2	1.5	2510 TCG 1
			230	–	–	–	–	3	2.2	
		M-1P	115	–	–	–	–	3	2.2	2510 TCG 2
			230	–	–	–	–	5	3.7	
	AC 3	M-0	200–230	–	–	3 (2)	2.2 (2)	–	–	2510 TBG 2
			380–575	–	–	5 (3)	3.7 (3)	–	–	
		M-1	200–230	–	–	7.5 (2)	5.5 (2)	–	–	2510 TCG 3
			380–575	–	–	10 (3)	7.5 (3)	–	–	
	DC 2	M-0	115	1	0.75	–	–	–	–	2510 TBG 4
			230	1.5	1.1	–	–	–	–	
M-1		115	1.5	1.1	–	–	–	–	2510 TCG 5	
		230	2	1.5	–	–	–	–		
Pushbutton	AC 2	M-0	115	–	–	–	–	1	0.75	2510 MBG 1
			230	–	–	–	–	2	1.5	
		M-1	115	–	–	–	–	2	1.5	2510 MCG 1
			230	–	–	–	–	3	2.2	
		M-1P	115	–	–	–	–	3	2.2	2510 MCG 2
			230	–	–	–	–	5	3.7	
	AC 3	M-0	200–230	–	–	3 (2)	2.2 (2)	–	–	2510 MBG 2
			380–575	–	–	5 (3)	3.7 (3)	–	–	
		M-1	200–230	–	–	7.5 (2)	5.5 (2)	–	–	2510 MCG 3
			380–575	–	–	10 (3)	7.5 (3)	–	–	
	DC 2	M-0	115	1	0.75	–	–	–	–	2510 MBG 4
			230	1.5	1.1	–	–	–	–	
M-1		115	1.5	1.1	–	–	–	–	2510 MCG 5	
		230	2	1.5	–	–	–	–		

(2) Value for 230 V.

(3) Value for 575 V.

Type					Replacement parts kits
Description	For use with			Number of poles in the kit	Catalog no.
	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	9998 SJ 1
		SB	0	3	9998 SL 2
				4	9998 SL 12
		SB, SC (power pole adder)	0 and 1	1	9998 SL 22
		SC	1 and 1P	3	9998 SL 3
				4	9998 SL 13
		SD	2	3	9998 SL 4
				4	9998 SL 14
		SD (power pole adder)	2	1	9998 SL 24
		SE	3	2	9998 SL 6
				3	9998 SL 7
		SF	4	2	9998 SL 8
				3	9998 SL 9
		SG	5	2	9998 SL 10
				3	9998 SL 11
		SH	6	2	9998 SL 25
				3	9998 SL 26
		SJ	7	2	9998 SL 30
	3			9998 SL 31	
	8903	L (Series C) and LX (Series B)	20 A	4	9998 RA 5B
				3	9998 SL 3
		SM	30 A	4	9998 SL 13
				3	9998 SL 4
		SP	60 A	4	9998 SL 14
				3	9998 SL 6
		SQ	100 A	3	9998 SL 7
				2	9998 SL 8
		SV	200 A	3	9998 SL 9
				2	9998 SL 10
		SX	300 A	3	9998 SL 11
				2	9998 SL 25
		SY	400 A	3	9998 SL 26
				2	9998 SL 32
	SZ	600 A	3	9998 SL 33	
			2	9998 SL 30	
	SJ	800 A	3	9998 SL 31	
			1	9998 DRC 1	
	8910	DPA 1●	20 A	1	9998 DRC 2
		DPA 2●	25 A	1	9998 DRC 3
		DPA 3●	30 A	1	9998 DRC 4
		DPA 4●	40 A	1	9998 DRC 5
		DPA 5●	50 A	1	9998 DRC 6
DPA 6●		60 A	1	9998 DRC 7	
DPA 7●		75 A	1	9998 DRC 9	
DPA 9●		90 A	1	9998 DRC 12	
DPA 123		120 A	1		

External auxiliary contacts



Type				External contact kits	
Description	For use with		Type of contact	Catalog no.	
	Class	Type			NEMA size or current
External convertible contact kits	8502, 8702, 8536, 8736	SA to SJ	00 to 7	1 N.O. contact	9999 SX 6
				1 N.C. contact	9999 SX 7
	8903 (Type S only)	SM to SJ	30–800 A	2 isolated contacts 1 N.O. and 1 N.C.	9999 SX 8
				1 N.O. overlapping contact	9999 SX 9 (1)
External non-convertible contact kits	8502, 8702, 8536, 8736	SA to SJ	00 to 7	1 N.C. overlapping contact	9999 SX 10 (1)
				1 N.O. contact	9999 SX 13
	8903 (Type S only)	SM to SJ	30–800 A	1 N.C. contact	9999 SX 14
				2 isolated contacts 1 N.O. and 1 N.C.	9999 SX 15
				1 N.O. overlapping contact	9999 SX 16 (1)
			1 N.C. overlapping contact	9999 SX 17 (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 no.
	Class	Type		
External auxiliary contacts	8910	DPA	1 N.O. contact	9999 D10
			1 N.C. contact	9999 D01
			2 isolated contacts 1 N.O. and 1 N.C.	9999 D11
			2 N.O. contacts	9999 D20
		DPA 122/123	1 N.O. contact	9999 SX6
			1 N.C. contact	9999 SX7
			2 isolated contacts 1 N.O. and 1 N.C.	9999 SX8
			1 N.O. overlapping contact	9999 SX9
			1 N.C. overlapping contact	9999 SX10

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: 8501 XO20 V02.



		AC Control relay	AC Latching relay
Continuous Load Rating	Normally Open Convertible	Basic catalog no. Complete with code	Basic catalog no. Complete with code
Inductive / resistive	Instantaneous Contacts	indicating control circuit voltage (1)	indicating control circuit voltage (1)
10 A / 10 A	0	8501XO00 ●●●	–
	2	8501XO20 ●●●	8501XO20XL ●●●
	3	8501XO30 ●●●	8501XO30XL ●●●
	4	8501XO40 ●●●	8501XO40XL ●●●
	6	8501XO60 ●●●	8501XO60XL ●●●
	8	8501XO80 ●●●	8501XO80XL ●●●
	10	8501XO1000 ●●●	–
	12	8501XO1200 ●●●	–

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.

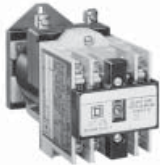
DC relays

(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: 8501 XDO80 V53.



		DC Control relay	DC Latching relay
Continuous Load Rating	Normally Open Convertible	Basic catalog no. Complete with code	Basic catalog no. Complete with code
Inductive / resistive	Instantaneous Contacts	indicating control circuit voltage (2)	indicating control circuit voltage (2)
5 A / 5 A	0	8501XDO00 ●●●	–
	2	8501XDO20 ●●●	8501XDO20XDL ●●●
	4	8501XDO40 ●●●	8501XDO40XDL ●●●
	6	8501XDO60 ●●●	8501XDO60XDL ●●●
	8	8501XDO80 ●●●	8501XDO80XDL ●●●

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



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	
Use with:								
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)	

(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	9421LH48	9421LH48	9421LC48	(3)		
MAL, MHL	2-3	1000	9421LH48	9421LH48	9421LC48	(3)		
NAL, NCL, NEL, NXL	2-3	1200	9421LH48	9421LH48	9421LC48	(3)		

(3) 3" handles are not recommended for use with these circuit breakers.

Disconnect switches Variable depth and cable operated



										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	
		208 (200)	240 (230)	480 (460)	600 (575)			250 V	600 V			Includes Type A1 handle mechanism Type	Includes Type A2 handle mechanism 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 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)	—		
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)	—		

- (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.

Circuit breaker operating mechanisms

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 circuit breakers						
MG-NSF	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 1-48.

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	3	250	36"	9422CSF30	–
			60"	9422CSF50	–
			84"	9422CSF70	–
			120"	9422CSF10	–
MG-NSF	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	–

Circuit breakers Powerpact and J-frame



SQUARE D

Frame / product	H-frame				J-frame				
Number of poles	2, 3				2, 3				
Current rating	15–150 A				150–250 A				
Interruption rating (kA)		HD	HG	HJ	HL	JD	JG	JJ	JL
	240 Vac	25	65	100	125	25	65	100	125
	480 Vac	18	35	65	100	18	35	65	100
	600 Vac	14	18	25	50	14	18	25	50
Standard	UL, IEC, CSA, NOM				UL, IEC, CSA, NOM				
Handle actuators	Yes				Yes				
See Catalog 0611CT0401									

Multi 9™ circuit breakers



Merlin Gerin

Frame / product	UL489 C60N			UL1077 C60N				
Number of poles	1, 2, 3			1, 2, 3, 4				
Current rating	0.5–35 A			0.5–63				
Trip curve	C and D			B, C, D				
Interruption rating (kA)		1P	2P	3P	1P	2P	3P	4P
	120 Vac	10	10	10	10	10	10	10
	240 Vac	5	10	10	5	10	10	10
	480Y/277 Vac	—	—	—	5	5	5	5
	60 Vdc	10	—	—	10	—	—	—
Supply Power	125 Vdc	—	10	—	—	10	—	—
Standard	UL489, IEC, CSA			UL1077, IEC, CSA				
Handle actuators	Yes			Yes				
See Multi 9 System Catalog 0860CT0201								

Vigirex™ relay



SQUARE D

		RH10M relay				
Packaging/mounting		DIN Mount (Multi 9 profile)				
Standard		UL1053 and CSA C22.2 No. 144				
Reset (after trip)		Manual reset				
Sensitivity (Milliamperes)		30	100	300	500	1 A
Time delay		Inst.	Inst.	Inst.	Inst.	Inst.
Supply power	12–24 Vac/12–48 Vdc	56300	56302	56305	56306	56307
	110–130 Vac	56320	56322	56325	56326	56327
	220–240 Vac	56330	56332	56335	56336	56337
See Vigirex Catalog 0972CT0301						

Circuit protection

Vigirex™ relay



		RH21M relay
Packaging/mounting		DIN Mount (Multi 9 profile)
Standard		UL1053 and CSA C22.2 No. 144
Reset (after trip)		Manual reset
Sensitivity (Milliamperes)		30 or 300 mA (selectable)
Time delay		Inst at 30 mA; Inst or 60 ms at 300 mA
Supply power	12–24 Vac/12–48 Vdc	56360
	110–130 Vac	56362
	220–240 Vac	56363
		See Vigirex Catalog 0972CT0301



		RH99M relay	
Packaging/mounting		DIN Mount (Multi 9 profile)	
Standard		UL1053 and CSA C22.2 No. 144	
Reset (after trip)		Manual and automatic reset available	
Sensitivity (Amperes)		0.03, 0.1, 0.3, 0.5, 1, 3, 5, 10, 30	
Time delay (in seconds)		Inst., 0.05, 0.15, 0.25, 0.31, 0.5, 0.8, 1.0, 4.5	
Supply power	12–24 Vac/12–48 Vdc	Manual reset	Automatic reset
		56370	56390
	110–130 Vac	56372	56392
	220–240 Vac	56373	56393
		See Vigirex Catalog 0972CT0301	

Vigirex toroid sensors



		Toroid sensors					
Packaging/mounting		Closed Toroid					
Standard		UL489, IEC, CSA					
Current Rating (Amperes)		65	85	160	250	400	630
Window Diameter (inches)		1.18	1.97	3.15	4.72	7.87	11.81
Window Diameter (mm / in.)		30 / 1.18	50 / 1.97	80 / 3.15	120 / 4.72	200 / 7.87	300 / 11.81
Model		TA30	PA50	IA80	MA120	SA200	GA300
Catalog number		50437	50438	50439	50440	50441	50442
		See Vigirex Catalog 0972CT0301					

The *simplicity* of a complete offer



Welcome to the Simply Smart* products of Telemecanique

Altivar adjustable speed drives and **Altistart** soft starts open the doors to increased productivity by offering you **simple, compact, open** and **flexible solutions**:

- Ready to use
- Easy to integrate
- Large choice of communication networks and configuration tools
- Many functions to meet your specific applications

... so many solutions to increase your productivity.

* **Simply Smart** : using ingenuity and intelligence to continually improve ease of use.

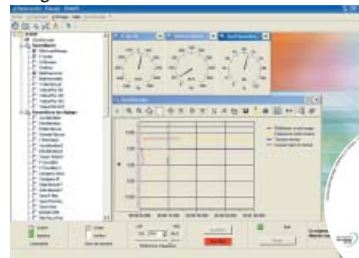
PowerSuite : a unique software for all Altistart and Altivar products.

Customize your settings with **minimum effort!**

- Clear definition of parameters
- Prepare and print the configurations
- Compare configurations
- Easy to duplicate configurations for similar applications
- Remote monitoring and diagnostics



Graphic display of settings,
Current status,
Diagnostics...



The essential guide

Soft starts and adjustable speed drives
Altistart / Altivar

A simplified selection guide enabling you to quickly select the soft start or the drive suitable for your application.

Additional flexibility with the pocket PC

Contents

*a solution for every
soft starting and
adjustable speed
application*

Altistart / Altivar selection guide page 2-2



Small machines



Large machines

Soft starts



■ 0.25–75 hp
Altistart 01 - page 2-6



■ 2–1200 hp
Altistart 48 - page 2-8



■ 3–600 hp
Enclosed 48 - page 2-4

Adjustable speed drives



Small machines



■ 0.25–3 hp
**Altivar 11
page 2-10**



■ 0.25–20 hp
Altivar 31 - page 2-12



Large machines,
variable torque
applications



■ 0.50–500 hp
**Altivar 58 TRX
page 2-14**



■ 1–100 hp
**Econoflex
page 2-4**



■ 1–500 hp
**Enclosed 58M
page 2-5**



Large machines,
constant torque
applications



■ 0.50–350 hp
**Altivar 58 TRX
page 2-16**






■ 1–350 hp
**Enclosed 58M
page 2-5**



■ 1–500 hp
**Motor control centers
page 2-5**

Dialog and communication page 2-20

Selection guide

Type of machine Key application/market segment		Small machines		
		<ul style="list-style-type: none"> • pumps • fans • conveyors 	<ul style="list-style-type: none"> • agitators 	<ul style="list-style-type: none"> • commercial kitchen equipment • packaging equipment • parking gates • door controls
Soft starts/drives		Soft starts	AC drives	Reversing starter applications
		<p>Altistart 01</p> 	<p>Altivar 11</p> 	<p>Altivar 31</p> 
Supply voltage ranges for 50/60 Hz line supply		Single phase 110–230 V Three phase 200–690 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		0.37–75 kW 0.25–75 hp	0.18–2.2 kW 0.25–3 hp	0.18–15 kW 0.25–20 hp
Drive	Output frequency	50/60 Hz	0.5–200 Hz	0.5–500 Hz
	Type of control	Voltage ramp	Sensorless flux vector control	
	Transient overtorque	200–300% of the nominal motor torque for 200 ms	150–170% of the nominal motor torque	170–200% of the nominal motor torque
Functions				
Number of functions		7	26	50
Number of preset speeds		–	4	16
Number of I/O	Analog inputs	–	1	3
	Logic inputs	3	4	6
	Analog outputs	–	1	1
	Logic outputs	1	1	1
	Relay outputs	1	1	2
Communication	Integrated	–	–	Modbus and CANopen
	Available as an option	Modbus, Ethernet TCP/IP, Profibus DP and Fipio when combined with TeSys U-line motor starter	–	DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP
Cards (available as an option)		–	–	–
Standards and certifications		IEC/EN 60947-4-2 UL, CSA, CE, CCC, C-TICK	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		2-6 to 2-7	2-10 to 2-11	2-12 to 2-13
Reference literature		8637CT0401	–	8800CT0401

Large machines
Fixed speed machines
for reduced voltage starting/stopping

- industrial facility
- compressors
- conveyors
- fans
- pumps

Variable torque machines

- centrifugal fans
- centrifugal pumps

Constant torque machines

- industrial facility
- compressors
- conveyors
- extruders
- packaging
- centrifuges
- hoisting
- crushers
- presses
- grinders

Soft starts

AC drives

Altistart 48



Altivar 58 TRX



Altivar 58 TRX



Three phase 208–690 V

Single phase 200–240 V
Three phase 200–240 V
Three phase 380–460 V

Single phase 200–240 V
Three phase 200–240 V
Three phase 380–500 V

3–900 kW
2–1200 hp

0.37–315 kW
0.50–500 hp
0.1–500 Hz

0.37–220 kW
0.50–350 hp
0.1–500 Hz

Torque ramp control
50/60 Hz

Sensorless flux vector
control

Sensor/sensorless flux vector control

200–300% of the nominal motor torque
for 100 ms

110% of the nominal motor torque
for 60 sec.

200% of the nominal motor torque
for 2 sec. 170% for 60 sec.

36

> 60

> 60

–

8

8

1

2 to 3

2 to 3

4

4 to 6

4 to 6

1

1 to 2

1 to 2

2

0 to 1

0 to 1

3

2

2

Modbus

Modbus

Modbus

DeviceNet, Ethernet TCP/IP,
Profibus DP, Fipio

AS-Interface, CANopen,
DeviceNet, Ethernet TCP/IP,
Fipio, INTERBUS-S, Lonworks, Modbus,
Modbus Plus, METASYS N2,
Siemens P1, Profibus DP, Uni-Telway

AS-Interface, CANopen,
DeviceNet, Ethernet TCP/IP,
Fipio, INTERBUS-S, Modbus, Modbus Plus,
Profibus DP, Uni-Telway

–

Pump switching card
“Controller Inside” programmable card
I/O extension card
115 Vac logic input card

Multi-motor card, Multi-parameter card,
Simple positioning card,
“Controller Inside” programmable card,
I/O extension card,
115 Vac logic input card

IEC/EN 60947-4-2
EMC class A and B
UL, CSA, NOM, CE, CCC,
GOST, CCIB, C-TICK, DNV

EN 50178 - IEC 1800-3
EN 55011 class A
EN 55022 class B
UL - N998 - CE

EN 50178 - EN 55011
EN 55022 class A,
class B with option
IEC 61000-4/2/4-3/4-4/4-5
IEC 61800-3 - DNV - GOST
UL - CE - CSA - N998 - NOM 117

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2-14 to 2-15



2-16 to 2-18

8836CT9701R2/00

8806CT9901R2/03

8806CT9901R2/03

Selection guide

Type of motor control Key application/market segment	<ul style="list-style-type: none"> • pumps • fans • conveyors • centrifuges • lifts 	<ul style="list-style-type: none"> • agitators • mixers • grinders • crushers • presses 	<ul style="list-style-type: none"> • commercial/mechanical • HVAC/fans • pumps
Packaged soft starts/drives Integrated control protected within enclosures, optimized with disconnects, circuit breakers, fuses, contactors, push buttons, selector switches, control logic, communication and miscellaneous options designed to meet application requirements.	Soft starts Enclosed 48 	Adjustable speed drives Econoflex 	
Distribution voltage ranges for 50/60 Hz line supply	Three phase 208–600 Vac	Three phase 208–480 Vac	
Horsepower ratings	3–600 hp	1–100 hp (VT)	
Configurable options	Pre-engineered and customization <ul style="list-style-type: none"> • non-reversing • reversing • shunt trip 	Pre-engineered <ul style="list-style-type: none"> • drive controller • drive with isolation and bypass 	
Enclosure ratings	Type 1, 12, 3R	Type 1, 12K, 3R	
Communication networks	Modbus Modbus Plus Ethernet Devicenet	Modbus Lonworks METASYS N2	
Standards and certifications	UL 508 cUL Seismic qualified (AC156) Floor mount	UL 508C cUL	
Reference literature	8636BR0401 8638CT0401	8839HO9902 8806CT9901	

- industrial facility
- pumps
- fans
- compressors
- conveyors
- extruders

- water/wastewater
- clean power drives
- high horsepower
- pumps

- high density construction
- industrial & process control applications

Adjustable speed drives

Adjustable speed drives

Soft starts & adjustable speed drives

Enclosed 58M



Powergard (18 pulse)



Now available in ATV 58 TRX version

Motor control centers



Three phase 208–480 Vac

Three phase 480 Vac

Three phase 208–600 Vac

1–500 hp (VT)
1–350 hp (CT)

75–500 hp (VT)

3–600 hp soft starts
1–500 hp adjustable speed drives

Pre-engineered and customization

Pre-engineered and customization

Pre-engineered and customization

- drive controller
- drive with integrated bypass
- drive with barriered bypass

- drive controller
- configurable with barriered bypass or SSRVS bypass

Type 1, 1A, 12

Type 1, 1A

Type 1, 12, 3R

- Modbus
- Modbus Plus
- DeviceNet
- Ethernet
- METASYS N2
- Lonworks
- UL 508A
- UL 508C
- CSA / cUL
- Seismic qualified (AC156)
- Floor mount

- Modbus
- Modbus Plus
- DeviceNet
- Ethernet
- METASYS N2
- Lonworks
- UL 508A
- UL 508C

- Modbus
- Modbus Plus
- DeviceNet
- Ethernet
- METASYS N2
- Profibus
- UL845
- CSA

8800SM0301
8806CT9901

Consult factory

8998BR9701
8998CT9701

Altistart 01

0.25 to 75 hp
0.37–75 kW

Small machines Soft starts

AC
DRIVES

Dimensions (W x H x D)	mm	In.
ATS01 N103FT / N106 FT	22.5 x 100 x 100	0.89 x 3.94 x 3.94
N109FT / N112 FT	45 x 124 x 113	1.77 x 4.88 x 4.45
N206●● / N209●● / N212●●	45 x 154 x 113	1.77 x 6.06 x 4.45



Type of starter	Soft start		Soft start and soft stop				
Motor power	0.25–7.5 hp		1.0–20 hp				
Degree of protection	IP 20						
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 kickstart)				
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	230 V		Nominal current				
Hp	kW	Hp	(A)				
–	0.37	0.25	3				
0.25	0.75	0.5	6				
0.33	1.1	1	9				
0.5	1.5	2	12				
Supply voltage	3-phase 200–480 V		3-phase 200–240 V		3-phase 380–415 V		3-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		
1	0.75–1.1	1–1.5	2.2	2–3	6		
1.5–2	1.5	2	4	5	9		
3	2.2	3	5.5	7.5	12		
5	4–5.5	5–7.5	7.5–11	10–15	22		
7.5–10	7.5	10	15	20	32		
					ATS01N103FT		–
					ATS01N106FT		ATS01N206LU
					ATS01N109FT		ATS01N209LU
					ATS01N112FT		ATS01N212LU
					–		ATS01N222LU
					–		ATS01N232LU



Dimensions (W x H x D)	mm	In.
ATS01 N230●●/N244●●	180 x 146 x 126	180 x 5.75 x 4.96
N272●●/N285●●	180 x 254.5 x 126	7.09 x 10.02 x 4.96

Type of starter	Soft start and soft stop	
Motor power	10 to 60 hp	
Degree of protection	IP 20 on front panel	
Peak current reduction	Yes	
Adjustable starting and stopping times	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 Vdc ± 10%	
Supply voltage	3-phase 230–690 V	
Motor power	3-phase 400 V	
230 V	400 V	
kW	Hp	Nominal current
7.5	10	32
11	15	44
18.5	25	72
22	30	85
		ATS01N230LY
		ATS01N244LY
		ATS01N272LY
		ATS01N285LY

Soft starts with TeSys U-line motor starter



Dimensions (W x H x D)	mm	In.
ATSU01 N206LT / N209LT/N212LT	45 x 124 x 113	1.77 x 4.88 x 4.45
N222LT / N232LT	45 x 154 x 113	1.77 x 6.06 x 4.45

Type of starter	Soft stop and soft start						
Motor power	1.0 to 20 hp						
Degree of protection	IP 20						
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 kickstart)						
Logic outputs	1 logic output						
Relay outputs	1 relay output						
Control supply voltage	Built into the soft start						
Catalog numbers	soft start	TeSys U-line motor starter Power base	Control unit (1)	Power connector between ATSU and TeSys U-line motor starter: VW3G4104 (2)			
Supply voltage	3-phase 200–480 V						
Motor power							
230 V	400 V	460 V	Nominal current (A)				
kW	Hp	kW	Hp				
0.75	1	1.5	2	6			
1.1	1.5	2.2	3	6			
1.5	2	3	–	9			
–	–	4	5	9			
2.2	3	–	–	12			
3	–	5.5	7.5	12			
4	5	7.5	10	22			
5.5	7.5	11	15	22			
7.5	10	15	20	32			
				ATSU01N206LT	LUB12	LUC●05BL	–
				ATSU01N206LT	LUB12	LUC●12BL	–
				ATSU01N209LT	LUB12	LUC●12BL	–
				ATSU01N209LT	LUB12	LUC●12BL	–
				ATSU01N212LT	LUB12	LUC●12BL	–
				ATSU01N212LT	LUB32	LUC●18BL	–
				ATSU01N222LT	LUB32	LUC●18BL	–
				ATSU01N222LT	LUB32	LUC●32BL	–
				ATSU01N232LT	LUB32	LUC●32BL	–

(1) To create the complete catalog number, replace ● in the catalog number with: "A" for a standard control unit, "M" for a multifunction unit and "B" for an expandable unit.

(2) This power connector is included with ATSU01 soft starts.

Altistart 48

2 to 1200 hp
3 to 900 kW

Large machines Soft starts

AC
DRIVES

Dimensions (W x H x D)	mm	In.
ATS48 D17Y to D47Y	160 x 275 x 190	6.30 x 10.83 x 7.48
D62Y to C11Y	190 x 290 x 235	7.48 x 11.42 x 9.25
C14Y to C17Y	200 x 340 x 265	7.87 x 13.39 x 10.43
C21Y to C32Y	320 x 380 x 265	12.60 x 14.96 x 10.43
C41Y to C66Y	400 x 670 x 300	15.75 x 26.38 x 11.81
C79Y to M12Y	770 x 890 x 315	30.31 x 35.04 x 12.40



Supply voltage													3-phase 208–690 V			
Application duty cycle													Standard duty	Severe duty (1)		
Starter control supply voltage													110–230 V			
Protection													Degree of protection		IP 20: ATS48D17Y to ATS48C11Y soft starts IP 00: ATS48C14Y to ATS48M12Y soft starts	
													Motor thermal protection		Class 10 Class 20	
EMC													Class A		On all soft starts	
													Class B		On all soft starts up to ATS48C17Y	
Starting mode													Torque ramp control			
I/O													Analog inputs		1 PTC probe	
													Logic inputs		4, 2 of which are configurable	
													Logic outputs		2 configurable	
													Analog outputs		1	
													Relay outputs		3, 2 of which are configurable	
Dialog													Integrated or remote display terminal, or PowerSuite software (2)			
Communication (2)													Integrated		Modbus	
													Available as an option		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	ATS48D17Y		
3	5	10	15	4	7.5	7.5	9	9	11	15	17	ATS48D17Y	ATS48D22Y	ATS48D22Y		
5	7.5	15	20	5.5	11	11	11	11	15	18.5	22	ATS48D22Y	ATS48D32Y	ATS48D32Y		
7.5	10	20	25	7.5	15	15	18.5	18.5	22	22	32	ATS48D32Y	ATS48D38Y	ATS48D38Y		
10	–	25	30	9	18.5	18.5	22	22	30	30	38	ATS48D38Y	ATS48D47Y	ATS48D47Y		
–	15	30	40	11	22	22	30	30	37	37	47	ATS48D47Y	ATS48D62Y	ATS48D62Y		
15	20	40	50	15	30	30	37	37	45	45	62	ATS48D62Y	ATS48D75Y	ATS48D75Y		
20	25	50	60	18.5	37	37	45	45	55	55	75	ATS48D75Y	ATS48D88Y	ATS48D88Y		
25	30	60	75	22	45	45	55	55	75	75	88	ATS48D88Y	ATS48C11Y	ATS48C11Y		
30	40	75	100	30	55	55	75	75	90	90	110	ATS48C11Y	ATS48C14Y	ATS48C14Y		
40	50	100	125	37	75	75	90	90	110	110	140	ATS48C14Y	ATS48C17Y	ATS48C17Y		
50	60	125	150	45	90	90	110	110	132	160	170	ATS48C17Y	ATS48C21Y	ATS48C21Y		
60	75	150	200	55	110	110	132	132	160	200	210	ATS48C21Y	ATS48C25Y	ATS48C25Y		
75	100	200	250	75	132	132	160	160	220	250	250	ATS48C25Y	ATS48C32Y	ATS48C32Y		
100	125	250	300	90	160	160	220	220	250	315	320	ATS48C32Y	ATS48C41Y	ATS48C41Y		
125	150	300	350	110	220	220	250	250	355	400	410	ATS48C41Y	ATS48C48Y	ATS48C48Y		
150	–	350	400	132	250	250	315	315	400	500	480	ATS48C48Y	ATS48C59Y	ATS48C59Y		
–	200	400	500	160	315	355	400	400	560	560	590	ATS48C59Y	ATS48C66Y	ATS48C66Y		
200	250	500	600	–	355	400	–	–	630	630	660	ATS48C66Y	ATS48C79Y	ATS48C79Y		
250	300	600	800	220	400	500	500	500	710	710	790	ATS48C79Y	ATS48M10Y	ATS48M10Y		
350	350	800	1000	250	500	630	630	630	900	900	1000	ATS48M10Y	ATS48M12Y	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 pages 2-20–2-22.

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

Soft starts (1)

Dimensions (W x H x D)		mm	In.
ATS48 D17● to D47●		160 x 275 x 190	6.30 x 10.83 x 7.48
D62● to C11●		190 x 290 x 235	7.48 x 11.42 x 9.25
C14● to C17●		200 x 340 x 265	7.87 x 13.39 x 10.43
C21● to C32●		320 x 380 x 265	12.60 x 14.96 x 10.43
C41● to C66●		400 x 670 x 300	15.75 x 26.38 x 11.81
C79● to M12●		770 x 890 x 315	30.31 x 35.04 x 12.40



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								Nominal current (A)	
208 V	230 V	460 V	230 V	400 V	440 V	500 V			
Hp			kW						
–	7.5	15	5.5	11	11	15	22	–	ATS48D17YS316
7.5	10	20	7.5	15	15	18.5	29	ATS48D17YS316	ATS48D22YS316
10	10	30	9	18.5	22	22	38	ATS48D22YS316	ATS48D32YS316
15	20	40	15	22	30	37	55	ATS48D32YS316	ATS48D38YS316
20	25	50	18.5	30	37	45	66	ATS48D38YS316	ATS48D47YS316
25	30	60	22	45	45	55	81	ATS48D47YS316	ATS48D62YS316
30	40	75	30	55	55	75	107	ATS48D62YS316	ATS48D75YS316
40	50	100	37	55	75	90	130	ATS48D75YS316	ATS48D88YS316
50	60	125	45	75	90	110	152	ATS48D88YS316	ATS48C11YS316
60	75	150	55	90	110	132	191	ATS48C11YS316	ATS48C14YS316
75	100	200	75	110	–	160	242	ATS48C14YS316	ATS48C17YS316
100	125	250	90	132	200	200	294	ATS48C17YS316	ATS48C21YS316
125	150	300	110	160	220	250	364	ATS48C21YS316	ATS48C25YS316
150	–	350	132	220	250	315	433	ATS48C25YS316	ATS48C32YS316
200	200	450	160	250	355	400	554	ATS48C32YS316	ATS48C41YS316
–	–	600	220	315	500	500	710	ATS48C41YS316	ATS48C48YS316
–	–	–	250	355	560	630	831	ATS48C48YS316	ATS48C59YS316
–	–	–	–	400	710	710	1022	ATS48C59YS316	ATS48C66YS316
–	–	–	315	500	710	800	1143	ATS48C66YS316	ATS48C79YS316
–	–	–	475	630	900	900	1368	ATS48C79YS316	ATS48M10YS316
–	–	–	–	710	–	–	1732	ATS48M10YS316	ATS48M12YS316
–	–	–	500	–	–	–	2078	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 to 3 hp

Small machines AC drives with heatsinks

AC
DRIVES

Dimensions (W x H x D) (1)	mm	In.
Size 1:	72 x 142 x 101	2.83 x 5.59 x 3.98
Size 2:	72 x 142 x 125	2.83 x 5.59 x 4.92
Size 3:	72 x 142 x 138	2.83 x 5.59 x 5.43
Size 4:	117 x 142 x 156	4.61 x 5.59 x 6.14



Range			Europe	America	Asia
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 (3)/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			
	0.18	0.25	–	ATV11HU05F1U Size 1	ATV11HU05F1A Size 1
	0.37	0.5	–	ATV11HU09F1U Size 2	ATV11HU09F1A Size 2
	0.75	1	–	ATV11HU18F1U Size 4	ATV11HU18F1A Size 4
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) Asia range: add 7 mm to depth (height of the potentiometer)

(2) PowerSuite software, see page 2-20

(3) Local controls: Run/Stop keys and potentiometer

AC drives with base plates



Dimensions (W x H x D) (1)	mm	In.
Size 1:	72 x 142 x 101	2.83 x 5.59 x 3.98

Range			Europe	America	Asia
Supply voltage			Single phase 100–120 V		
Motor power	kW	Hp	–	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) Asia range: add 7 mm to depth (height of the potentiometer)

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Additional EMC input filters



Supply voltage			Single phase 100–120 V	200–240 V	Three phase 200–230 V
Europe range	Drive type	ATV11	–	HU05M2E to HU41M2E	–
	Catalog numbers	Filters	–	Integrated	–
America 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
	Catalog numbers	Filters	VW3A11402	VW3A11402	VW3A11404
Asia range	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

Accessories



Accessory			Mounting plates for DIN rail		Grounding plate for EMC mounting	Braking module
Description			Width 35 mm (1.38")			Minimum dynamic braking resistance value 75 Ω
Catalog numbers	Drive type	ATV11	HU05●●● HU09●●● HU12M2● HU18●●	HU18F1● HU29●●● HU41●●● –	All ATV11 models	All ATV11 models
	Accessories		VW3A11851	VW3A11852		

Braking resistors: Please consult bulletin VDOC06N908C.

Altivar 31

0.25 to 20 hp

Small machines AC drives

AC
DRIVES

Dimensions (W x H x D) (4)	mm	In.
Size 1:	72 x 145 x 120	2.83 x 5.71 x 4.72
Size 2 & 3:	72 x 145 x 130	2.83 x 5.71 x 5.12
Size 4:	72 x 145 x 140	2.83 x 5.71 x 5.51
Size 5:	105 x 143 x 130	4.13 x 5.63 x 5.12
Size 6:	105 x 143 x 150	4.13 x 5.63 x 5.91
Size 7:	140 x 184 x 150	5.51 x 7.24 x 5.91
Size 8:	180 x 232 x 170	7.09 x 9.13 x 6.69
Size 9:	245 x 330 x 190	9.65 x 12.99 x 7.48



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 2-20.

(4) Add 8 mm (0.31") to depth (height of potentiometer).

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	VW3A31101

For more information on accessories, reference Catalog #8800CT0401.

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 (16.4')	50 m (164')	5 m (16.4')	5 m (16.4')	50 m (164')
		Class B	–	20 m (65')	–	–	20 m (65')
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			
ATV31HU22M2	25	ATV31HU40M3X	16
ATV31HU22M3X			
ATV31HU30M3X	16	ATV31H/KD11N4, ATV31H/KD15N4	20
ATV31HU30N4	55	ATV31HD11S6X, ATV31HD15S6X	24
ATV31HU40N4	36	ATV31HU55M3X, ATV31HU75M3X	8
ATV31HU22M3X	25	ATV31HD11M3X, ATV31HD15M3X	5

Accessories

		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 58 TRX

0.50 to 500 hp

Large machines AC drives



AC
DRIVES

Dimensions (W x H x D)	mm	In.
Size 1:	113 x 206 x 167	4.45 x 8.11 x 6.57
Size 2:	150 x 230 x 184	5.91 x 9.06 x 7.24
Size 3:	175 x 286 x 184	6.89 x 11.26 x 7.24
Size 4:	230 x 325 x 210	9.06 x 12.80 x 8.27
Size 5:	230 x 415 x 210	9.06 x 16.34 x 8.27
Size 6:	240 x 550 x 283	9.45 x 21.65 x 11.14
Size 7:	350 x 650 x 304	13.78 x 25.59 x 11.97
Size 8:	370 x 630 x 360	14.57 x 24.80 x 14.17
Size 9:	480 x 680 x 400	18.90 x 26.77 x 15.75
Size 10:	660 x 950 x 440	25.98 x 37.40 x 17.32

Drive type			ATV58 TRX					
Supply voltage			Single phase 200–240 V		Three phase 200–240 V		Three phase 380–460 V	
Description			Altivar 58					
Output frequency			0.1–500 Hz					
Type of flux vector control			Sensorless flux vector control					
Speed range			1 to 60					
Degree of protection			IP 21 and IP 41 on upper part for drives up to 100 hp IP 00 on lower part and IP 20 on other sides for drives above 100 hp					
I/O	Analog inputs		1 voltage analog input and 1 current analog input					
	Logic inputs		4 assignable logic inputs					
	Analog outputs		1 assignable analog output					
	Logic outputs		2 relay logic outputs					
Dialog			Integrated or remote display terminal, or PowerSuite software (1)					
Communication (2)	Integrated		Modbus					
	Available as an option		AS-Interface, CANopen, DeviceNet, Ethernet TCP/IP, Fipio, Interbus-S, Lonworks, Modbus, Modbus Plus, METASYS N2, Profibus DP, Siemens P1, Uni-Telway					
EMC	Class A		Integrated filter		Integrated filter (2–10 hp)		Integrated filter (1–3 hp)	
	Class B		External filter available as an option					
Motor power	kW	Hp						
	0.37	0.5	ATV58HU09M2ZU	Size 1	–	–	–	–
	0.75	1	ATV58HU18M2ZU	Size 1	–	–	ATV58HU18N4ZU	Size 2
	1.5	2	ATV58HU29M2ZU	Size 2	ATV58HU29M2ZU	Size 2	ATV58HU29N4ZU	Size 2
	2.2	3	ATV58HU41M2ZU	Size 2	ATV58HU41M2ZU	Size 2	ATV58HU41N4ZU	Size 2
	3	–	ATV58HU72M2ZU	Size 3	ATV58HU54M2ZU	Size 3	–	–
	4	5	ATV58HU90M2ZU	Size 4	ATV58HU72M2ZU	Size 3	ATV58HU54N4XZU (3)	Size 3
	5.5	7.5	ATV58HD12M2ZU	Size 4	ATV58HU90M2ZU	Size 4	ATV58HU72N4XZU (3)	Size 3
	7.5	10	–	–	ATV58HD12M2ZU	Size 4	ATV58HU90N4XZU (3)	Size 3
	11	15	–	–	ATV58HD16M2XZU	Size 6	ATV58HD12N4XZU (3)	Size 4
	15	20	–	–	ATV58HD23M2XZU	Size 6	ATV58HD16N4XZU (3)	Size 4
	18.5	25	–	–	ATV58HD28M2XZU	Size 7	ATV58HD23N4XZU (3)	Size 5
	22	30	–	–	ATV58HD33M2XZU	Size 7	ATV58HD28N4XZU (3)	Size 6
	30	40	–	–	ATV58HD46M2XZU	Size 7	ATV58HD33N4XZU (3)	Size 6
	37	50	–	–	–	–	ATV58HD46N4XZU (3)	Size 6
	45	60	–	–	–	–	ATV58HD54N4XZU (3)	Size 7
	55	75	–	–	–	–	ATV58HD64N4XZU (3)	Size 7
	75	100	–	–	–	–	ATV58HD79N4XZU (3)	Size 7
	90	125	–	–	–	–	ATV58HC10N4XZU (4)	Size 8
	110	150	–	–	–	–	ATV58HC13N4XZU (4)	Size 9
	132	200	–	–	–	–	ATV58HC15N4XZU (4)	Size 9
	160	250	–	–	–	–	ATV58HC19N4XZU (4)	Size 9
	200	300	–	–	–	–	ATV58HC23N4XZU (4)	Size 10
	220	350	–	–	–	–	ATV58HC25N4XZU (4)	Size 10
	250	400	–	–	–	–	ATV58HC28N4XZU (4)	Size 10
	280	450	–	–	–	–	ATV58HC31N4XZU (4)	Size 10
	315	500	–	–	–	–	ATV58HC33N4XZU (4)	Size 10

(1) (2) PowerSuite software and communication protocols, see page 2-20.

(3) To receive Class A EMC filter, delete the "X" from the catalog number.

(4) Integrated EMC filter not available.

Keypad accessories



Type of accessory	Operator terminal	Remote terminal option
Description	Ordered separately.	3 m cable with connectors, with seals, plastic bezel, and screws for IP 65 keypad mounting on door of enclosure.
Drive type	All Altivar 58 drives	All Altivar 58 drives
Catalog numbers	VW3A58101U	VW3A58103

I/O extension and specific cards



Type of card (1)	I/O extension	Pump switching	Logic input module
Description	2 logic inputs 24 Vdc 1 open collector logic output 24 Vdc 1 analog output 0/20 mA 1 bipolar analog input ± 10 V	Control of an entire pumping or compression station	Provides 115 Vac to 24 Vdc conversion for LI1, LI2, LI3 & LI4
Catalog number	VW3A58201U	VW3A58210U	VW3A58275U

(1) "Controller Inside" programmable card: Please consult your nearest Square D/Schneider Electric sales office.

Additional EMC input filters



Supply voltage		Single phase 200–240 V	Three phase 200–240 V	380–500 V	440–460 V		
Maximum length of shielded cable (1)	Class A	50 m (164')	50 m (164')	50 m (164')	200 m (656')	100 m (328')	
	Class B	20 m (65')	20 m (65')	20 m (65')	100 m (328')	25 m (82')	
Catalog numbers	Drive type	ATV58	HU09M2, HU18M2	HU29M2, HU41M2	HU18N4, HU29N4, HU41N4	–	HC10N4X
	Filters		VW3A58401	VW3A58402	VW3A58402		VW3A68415
	Drive type	ATV58	HU29M2, HU41M2,	HU54M2, HU72M2	HU54N4, HU72N4, HU90N4	–	HC13N4X, HC15N4X, HC19N4X
	Filters		VW3A58402	VW3A58403	VW3A58403		VW3A68435
	Drive type	ATV58	HU72M2	HU90M2, HD12M2,	HD12N4, HD16N4	–	HC23N4X, HC25N4X, HC28N4X, HC31N4X
	Filters		VW3A58403	VW3A58404	VW3A58404		
	Drive type	ATV58	HU90M2, HD12M2	HD16M2X, HD23M2X	HD23N4	–	HC33N4X
	Filters		VW3A58404	VW3A58407	VW3A58405		VW3A68465
	Drive type	ATV58		HD28M2X, HD33M2X, HD46M2X	HD28N4X	HD28N4	
	Filters			VW3A58408	VW3A58406		
	Drive type	ATV58			HD33N4X, HD46N4X	HD33N4, HD46N4	
	Filters				VW3A58407		
	Drive type	ATV58			HD54N4X, HD64N4X	HD54N4, HD64N4	
	Filters				HD79N4X	HD79N4	
							VW3A58408

(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 58 TRX

0.50 to 350 hp

Large machines, constant torque AC drives



AC
DRIVES

Dimensions (W x H x D)	mm	In.
Size 1:	113 x 206 x 167	4.45 x 8.11 x 6.57
Size 2:	150 x 230 x 184	5.91 x 9.06 x 7.24
Size 3:	175 x 286 x 184	6.89 x 11.26 x 7.24
Size 4:	230 x 325 x 210	9.06 x 12.80 x 8.27
Size 5:	230 x 415 x 210	9.06 x 16.34 x 8.27
Size 6:	240 x 550 x 283	9.45 x 21.65 x 11.14
Size 7:	350 x 650 x 304	13.78 x 25.59 x 11.97
Size 8:	370 x 630 x 360	14.57 x 24.80 x 14.17
Size 9:	480 x 680 x 400	18.90 x 26.77 x 15.75
Size 10:	660 x 950 x 440	25.98 x 37.40 x 17.32

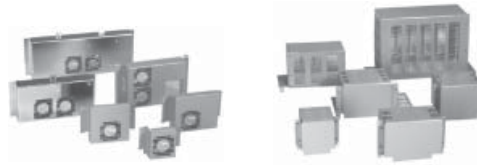
Drive type		Altivar 58			Altivar 58F
Supply voltage		Single phase 200–240 V	Three phase 200–240 V	Three phase 380–500 V	Three phase 380–500 V
Output frequency		0.1–500 Hz			0.1–450 Hz
Type of flux vector control		Sensorless			Sensor/Sensorless
Speed range		1 to 100			1 to 1000 with encoder feedback
Degree of protection		IP 21 for unprotected drives and IP 41 on the upper part for drives up to 75 hp IP 00 on lower part and IP 20 on other sides for drives above 75 hp			
I/O	Analog inputs	1 voltage analog input and 1 current analog input			+5 V encoder inputs
	Logic inputs	4 assignable logic inputs			A, A-, B, B-
	Analog outputs	1 assignable analog output			
	Logic outputs	2 relay logic outputs			
Dialog		Integrated or remote display terminal or PowerSuite software (1)			
Communication (2)	Integrated	Modbus			
	Available as an option	AS-Interface, CANopen, DeviceNet, Ethernet TCP/IP, Fipio, Interbus-S, Lonworks, Modbus, Modbus Plus, Profibus DP, Uni-Telway			
EMC	Class A	Integrated filter	Integrated filter (2–10 hp)	Integrated filter (1–3 hp)	Integrated filter
	Class B	External filter available as an option			
Motor power	kW	Hp			Keypad included
	0.37	0.5	ATV58HU09M2ZU S1	–	–
	0.75	1	ATV58HU18M2ZU S1	–	ATV58HU18N4ZU S2 ATV58FHU18N4KU S2
	1.5	2	ATV58HU29M2ZU S2	ATV58HU29M2ZU S2	ATV58HU29N4ZU S2 ATV58FHU29N4KU S2
	2.2	3	ATV58HU41M2ZU S2	ATV58HU41M2ZU S2	ATV58HU41N4ZU S2 ATV58FHU41N4KU S2
	3	–	ATV58HU72M2ZU (3) S3	ATV58HU54M2ZU S3	ATV58HU54N4XZU (4) S3 ATV58FHU54N4KU S3
	4	5	ATV58HU90M2ZU (3) S4	ATV58HU72M2ZU S3	ATV58HU72N4XZU (4) S3 ATV58FHU72N4KU S3
	5.5	7.5	ATV58HD12M2ZU (3) S4	ATV58HU90M2ZU S4	ATV58HU90N4XZU (4) S3 ATV58FHU90N4KU S3
	7.5	10	–	ATV58HD12M2ZU S4	ATV58HD12N4XZU (4) S4 ATV58FHD12N4KU S4
	11	15	–	ATV58HD16M2XZU S6	ATV58HD16N4XZU (4) S4 ATV58FHD16N4KU S4
	15	20	–	ATV58HD23M2XZU S6	ATV58HD23N4XZU (4) S5 ATV58FHD23N4KU S5
	18.5	25	–	ATV58HD28M2XZU S7	ATV58HD28N4XZU (4) S6 ATV58FHD28N4KU S6
	22	30	–	ATV58HD33M2XZU S7	ATV58HD33N4XZU (4) S6 ATV58FHD33N4KU S6
	30	40	–	ATV58HD46M2XZU S7	ATV58HD46N4XZU (4) S6 ATV58FHD46N4KU S6
	37	50	–	–	ATV58HD54N4XZU (4) S7 ATV58FHD54N4KU S7
	45	60	–	–	ATV58HD64N4XZU (4) S7 ATV58FHD64N4KU S7
	55	75	–	–	ATV58HD79N4XZU (4) S7 ATV58FHD79N4KU S7
	75	100	–	–	ATV58HC13N4XZU (5) S9 –
	90	125	–	–	ATV58HC15N4XZU (5) S9 –
	110	150	–	–	ATV58HC19N4XZU (5) S9 –
132	200	–	–	ATV58HC23N4XZU (5) S10 –	
160	250	–	–	ATV58HC25N4XZU (5) S10 –	
200	300	–	–	ATV58HC31N4XZU (5) S10 –	
220	350	–	–	ATV58HC33N4XZU (5) S10 –	

- (1) (2) PowerSuite software and communication protocols, see page 2-20.
 (3) Must be used with a line reactor, see page 2-19.
 (4) To receive Class A EMC filter, delete the "X" from the catalog number.
 (5) Integrated EMC filter not available.

Keypad accessories

Type of accessory	Operator terminal	Remote terminal option
Description	Ordered separately.	3 m (9.8') cable with connectors, with seals, plastic bezel, & screws for IP 65 keypad mounting on door of enclosure.
Drive type	All Altivar 58 drives	All Altivar 58 drives
Catalog numbers	VW3A58101U	VW3A58103

Accessories



Type of accessory			Control card ventilation	Type 1 conduit entry kits	
Description			Fan subassembly and mounting accessories	Use on wall-mounted drive controllers	
Catalog numbers	Drive type	ATV58	HU09M2, HU18M2	HU09M2, HU18M2	HU29M2, HU41M2 HU18N4, HU29N4, HU41N4
	Accessories		VW3A58821	VW3A58842	VW3A58843
	Drive type	ATV58	HU29M2, HU41M2, HU18N4 HU29N4, HU41N4	HU54M2, HU72M2 U54N4, U72N4, U90N4	HU90M2, HD12M2 HD12N4, HD16N4, HD23N4
	Accessories		VW3A58822	VW3A58844	VW3A58845
	Drive type	ATV58	HU54M2, HU72M2, HU54N4 HU72N4, HU90N4	HD16M2, HD23M2 HD28N4, HD23N4, HD46N4	HD28M2, HD33M2, HD46M2 HD54N4, HD64N4, HD79N4
	Accessories		VW3A58823	VW3A58846	VW3A58847
	Drive type	ATV58	HU90M2, D12M2, D12N4 D16N4, D23N4	HC10N4X	HC13N4X, HC15N4X, HC19N4X
	Accessories		VW3A58824	VW3A58848	VW3A58849
	Drive type	ATV58	HD16M2X, HD23M2X, HD28N4 HD33N4, HD46N4, HD28N4X HD33N4X, HD46N4X	HC23N4X, HC25N4X, HC28N4X, HC31N4X, HC33N4X	–
	Accessories		VW3A58825	VW3A58850	–
	Drive type	ATV58	HD28M2X, HD33M2X, HD46M2X HD54N4, HD64N4, HD79N4, HD54N4X, HD64N4X, HD79N4X	–	–
	Accessories		VW3A58826	–	–

I/O extension and application cards



Type of card (1)	I/O extension	I/O extension	Multi-motor	Multi-parameter	Simple positioning module	Logic input
Description	2 logic inputs 24 Vdc 1 open collector logic output 24 Vdc 1 analog output 0–20 mA scalable 1 bipolar analog input ± 10 V	2 logic inputs 24 Vdc 1 open collector logic output 24 Vdc 1 analog output 0–20 mA scalable encoder inputs 24 V A, A-, B, B-	2 non reassignable logic inputs 24 Vdc 1 open collector logic output 24 Vdc 1 analog output 0–20 mA scalable 1 bipolar analog input ± 10 V	Switching: automatic or by logic input up to 16 sets of 13 parameters, 6 of which are predefined, 7 are configurable	6 logic inputs 24 Vdc 1 open collector logic output 24 Vdc 1 analog output 0–20 mA scalable 1 bipolar analog input ± 10 V	Provides 115 Vac to 24 Vdc conversion for L11, L12, L13 & L14
Catalog numbers	VW3A58201U	VW3A58202U	VW3A58211	VW3A58212	VW3A58213	VW3A58275U

(1) "Controller Inside" programmable card. Please consult your nearest Square D/Schneider Electric sales office.

Altivar 58 TRX

0.50 to 350 hp

Large machines

Additional EMC input filters

AC
DRIVES



Supply voltage		Single phase 200–240 V	Three phase 200–240 V	380–500 V	440–460 V		
Maximum length of shielded cable (1)	Class A	50 m (164')	50 m (164')	50 m (164')	200 m (656')	100 m (328')	
	Class B	20 m (65')	20 m (65')	20 m (65')	100 m (328')	25 m (82')	
Catalog numbers	Drive type	ATV58	HU09M2, HU18M2	HU29M2, HU41M2	HU18N4, HU29N4, HU41N4	–	HC10N4X
	Filters		VW3A58401	VW3A58402	VW3A58402		VW3A68415
	Drive type	ATV58	HU29M2, HU41M2,	HU54M2, HU72M2	HU54N4, HU72N4, HU90N4	–	HC13N4X, HC15N4X, HC19N4X
	Filters		VW3A58402	VW3A58403	VW3A58403		VW3A68435
	Drive type	ATV58	HU72M2	HU90M2, HD12M2,	HD12N4, HD16N4	–	HC23N4X, HC25N4X, HC28N4X, HC31N4X
	Filters		VW3A58403	VW3A58404	VW3A58404		
	Drive type	ATV58	HU90M2, HD12M2	HD16M2X, HD23M2X	HD23N4	–	HC33N4X
	Filters		VW3A58404	VW3A58407	VW3A58405		VW3A68465
	Drive type	ATV58		HD28M2X, HD33M2X, HD46M2X	HD28N4X	HD28N4	
	Filters			VW3A58408	VW3A58406		
Drive type	ATV58			HD33N4X, HD46N4X	HD33N4, HD46N4		
Filters				VW3A58407			
Drive type	ATV58			HD54N4X, HD64N4X HD79N4X	HD54N4, HD64N4 HD79N4		
Filters				VW3A58408			

(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.

Braking resistors in Type 1 enclosure



Supply voltage		Single phase 200–240 V	Three phase 200–240 V	380–500 V	
Catalog numbers (1)	Drive type	ATV58	HU09M2 (1), HU18M2 (1)	–	HU18N4, HU29N4, HU41N4 HU54N4, HU72N4
	Resistors	protected	VW3A66711		
	Drive type	ATV58	HU41M2	HU29M2, HU41M2	HU90N4, HD12N4
	Resistors	protected	VW3A66712		
	Drive type	ATV58	–	HU54M2, HU72M2	HD16N4, HD23N4
	Resistors	protected	VW3A66713		
	Drive type	ATV58	–	HU90M2, HD12M2	HD28N4, HD33N4, HD46N4
	Resistors	protected		VW3A66714	
	Drive type	ATV58	–	HD16M2X, HD23M2X	HD54N4,
	Resistors	protected		VW3A66715	
Drive type	ATV58	–	HD28M2X, HD33M2X, HD46M2X	HD64N4, HD79N4	
Resistors	protected		VW3A66716		

(1) To be used with a braking transistor module—catalog number: **VW3A58701**

Line reactors

Dimensions (H x W x D)	mm	In.
Size 1:	203 x 203 x 152	8 x 8 x 6
Size 2:	381 x 330 x 330	15 x 13 x 13
Size 3:	610 x 432 x 432	24 x 17 x 17

Supply voltage		Line reactors for variable torque or constant torque applications					
Degree of protection		Single phase 208–230 V		Three phase 208–230 V		Three phase 480 V	
Type 1 enclosed							
Motor power	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		–	–	RL16012	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 3
250		–	–	–	–	RL32013	Size 3
300		–	–	–	–	RL40013	Size 3
350–400		–	–	–	–	RL50013	Size 3
450–500		–	–	–	–	RL60013	Size 3

Motor protecting output filters

Dimensions (H x W x D)	mm	In.
Size 1:	311 x 318 x 171	12.25 x 12.50 x 6.75
Size 2:	486 x 394 x 394	19.13 x 15.50 x 15.50
Size 3:	562 x 521 x 619	22.13 x 20.50 x 24.37

Supply voltage		Motor protecting output filters for variable torque or constant torque applications	
Degree of protection		Three phase 480 V	
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		KLCUL80A2	Size 2
75		KLCUL110A2	Size 2
100		KLCUL130A2	Size 2
125		KLCUL160A2	Size 2
150		KLCUL200A3	Size 3
200		KLCUL250A3	Size 3
250		KLCUL300A3	Size 3
300		KLCUL360A3	Size 3
350		KLCUL420A3	Size 3
400		KLCUL480A3	Size 3
450–500		KLCUL600A3	Size 3

For other versions, consult your nearest Square D/Schneider Electric sales office.

Altivar/Altistart _____ Dialog and communication PowerSuite software



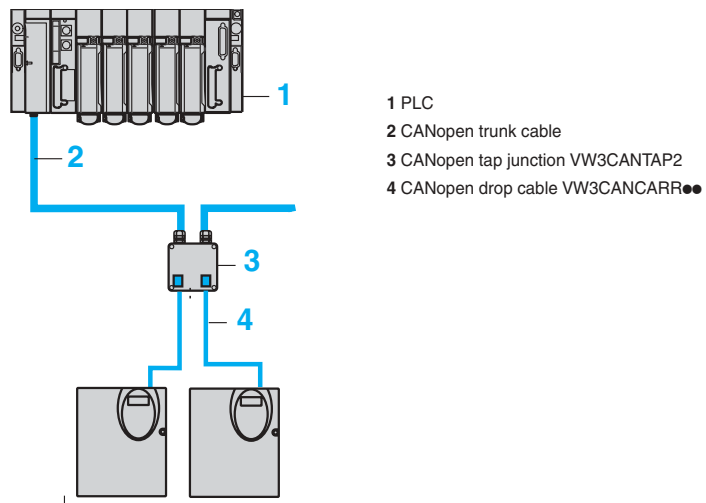
Multilingual configuration software		For PC	For Pocket PC
Configuration of AC drives, soft starts and starters		Altistart 48 soft starts, Altivar AC drives and TeSys U-line motor starter	
Environment		Microsoft Windows ®	Microsoft Pocket PC 2003
Catalog numbers	PowerSuite CD-ROM (1)	VW3A8104	
	PowerSuite upgrade CD-ROM	VW3A8105	
	Cable connection kit	VW3A8106	VW3A8111

(1) Contents: Software, technical documentation and the ABC configurator program

CANopen communication bus: connection accessories



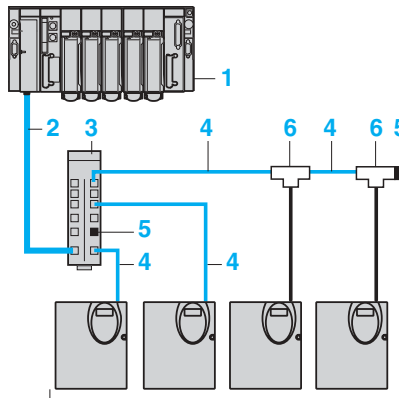
Drives		Altivar 31	
Tap junction		VW3CANTAP2	
Cables	Description	2 RJ45 connectors	
	Cable length	0.3 m (1')	1 m (3.3')
	Catalog numbers	VW3CANCARR03	VW3CANCARR1



Modbus communication bus: connection accessories



Soft starts/drives		Altistart 48	Altivar 31	Altivar 58 TRX
Splitter box	Description	10 RJ45 connectors and 1 screw terminal block		
	Catalog number	LU9GC3		
Line terminators	For RJ 45 connector	R = 120 Ω, C = 1 nF		
	Catalog number	VW3A8306RC		
T-junction boxes	For screw terminals	R = 120 Ω, C = 1 nF		
	Catalog number	VW3A8306DRC		
Modbus drop cables	With integrated cable	0.3 m (1')	VW3A8306TF03	
	With integrated cable	1 m (3.3')	VW3A8306TF10	
Modbus drop cables	Description	2 RJ45 connectors		1 RJ45 and 1 DB9
	Catalog numbers	0.3 m (1')	VW3A8306R03	-
		1 m (3.3')	VW3A8306R10	VW3A58306R10
		3 m (9.8')	VW3A8306R30	VW3A58306R30
Shielded twisted double pair cables RS 485	Description	1 RJ45 connector and one stripped end		
	Catalog number	VW3A8306D30		
Shielded twisted double pair cables RS 485	Description	Supplied without connector		
	Catalog numbers	100 m (328')	TSXCSA100	
		200 m (656')	TSXCSA200	
		500 m (1640')	TSXCSA500	



Connection via splitter boxes and RJ 45 connectors

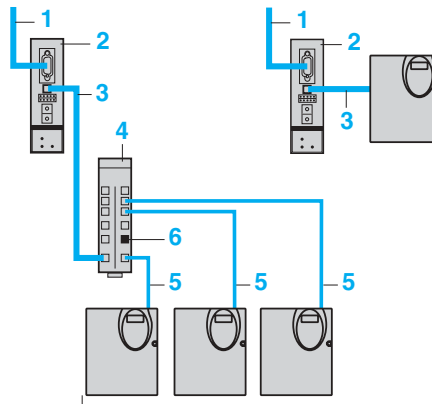
- 1 PLC
- 2 Modbus cable depending on the type of PLC
- 3 Modbus splitter box LU9GC3
- 4 Modbus drop cables VW3A8306R●●
- 5 Line terminators VW3A8306RC
- 6 Modbus T-junction boxes VW3A8306 TF●● (with cable)



Soft starts/drives			Altistart 48/Altivar 31	Altivar 58 TRX
Ethernet/Modbus	Catalog numbers	Bridge	174CEV30020	–
		Cable	VW3A8306D30	–
DeviceNet/Modbus	Catalog numbers	Gateway	LUF9	–
		0.3 m (1') cable	VW3A8306R03	–
		1 m (3.3') cable	VW3A8306R10	–
		3 m (9.8') cable	VW3A8306R30	–
Fipio/Modbus	Catalog numbers	Gateway	LUF1	–
		0.3 m (1') cable	VW3A8306R03	–
		1 m (3.3') cable	VW3A8306R10	–
		3 m (9.8') cable	VW3A8306R30	–
ProfibusDP/Modbus	Parameter setting	Gateway	Standard configurator	–
		Catalog numbers	LA9P307	–
	Parameter setting	1 m (3.3') cable	VW3P07306R10	–
		Catalog numbers	ABC configurator program	–
	Gateway	LUF7	–	
		0.3 m (1') cable	VW3A8306R03	–
1 m (3.3') cable		VW3A8306R10	–	
3 m (9.8') cable		VW3A8306R30	–	
Lonworks to Modbus	Catalog numbers	Gateway	–	VW3A58312PU (1)
Ethernet/Modbus	Catalog numbers	Bridge	EGX400 (2)	EGX400 (2)

(1) Supplied with cable for connection to drive.

(2) Allows web page access to TeSys U-line, Altistart 48, Altivar 31 and Altivar 58 TRX.



- 1 To network
- 2 Bridge or gateway modules
- 3 Modbus drop cables
VW3A8306 R●● or
VW3P07306R10 PLC cables
- 4 Modbus splitter box LU9GC3
- 5 Modbus drop cables
VW3A8306R●●
- 6 Line terminator
VW3A8306RC

Communication cards and modules



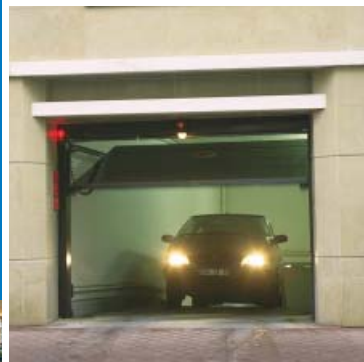
Drives		Altivar 58 TRX
AS-Interface	Max. no. of drives controlled	31
	Transmission speed	166 kbps
	Catalog number	VW3A58305
CANopen	Max. no. of drives controlled	63
	Transmission speed	125/250/500/1000 kbps
	Catalog number	VW3A58308
DeviceNet	Max. no. of drives controlled	63
	Transmission speed	125/250/500 kbps
	Catalog number	VW3A58309U
Ethernet	Max. no. of drives controlled	–
	Transmission speed	10/100 Mbps
	Catalog number	VW3A58310U
Fipio	Max. no. of drives controlled	62
	Transmission speed	1 Mbps
	Catalog number	VW3A58311 for ATV58F and ATV58 TRX >100 hp VW3A58301U for ATV58 TRX ≤100 hp
INTERBUS-S	Max. no. of drives controlled	64
	Transmission speed	1 Mbps
	Catalog number	VW3A58304EU
METASYS N2	Max. no. of drives controlled	255
	Transmission speed	4800–19,200 bps
	Catalog number	VW3A58354U
Modbus	Max. no. of drives controlled	31
	Transmission speed	4800–19,200 bps
	Catalog number	VW3A58303U
Modbus Plus	Max. no. of drives controlled	64
	Transmission speed	1 Mbps
	Catalog number	VW3A58302U
Profibus DP	Max. no. of drives controlled	126
	Transmission speed	9600 bps–12 Mbps
	Catalog number	VW3A58307U
Uni-Telway	Max. no. of drives controlled	28
	Transmission speed	4800–19,200 bps
	Catalog number	VW3A58303U

A **compact**, **simple** and **advanced** offer for your Small Automation Systems.

Welcome to the **Simply Smart*** world, compliments of Telemecanique.

Through a consistent approach to solving automation challenges of machinery and processes, the offer is broad, but simple to apply. From relays to nano PLCs, Telemecanique products are simple to select, apply and operate.

* **Simply Smart** : using ingenuity and intelligence to continually improve ease of use.



■ Control and connection components, a complete synergy with other Telemecanique automation system products.



Control and connection components The essential guide

A simplified selection guide enabling you to quickly select all the products required to build your small automation system equipment (simple installations & compact machines)

“Opt for an offer that is complete, economical and accessible to all”

- Save time and improve reliability with products that are **simple** to select and to use (tailored ergonomics, simplified mounting and wiring, assembly without tools...).
- Save space with products that are always more **compact**, thus simplifying integration in your installations.
- Improve flexibility with a **modular** offer for easily resolving your changing needs (interchangeable functions and options, common accessories and options...).

AUTOMATION SYSTEMS

POWER SUPPLY

INTERFACING

INTERFACING

MACHINE CONTROL

..... Pages

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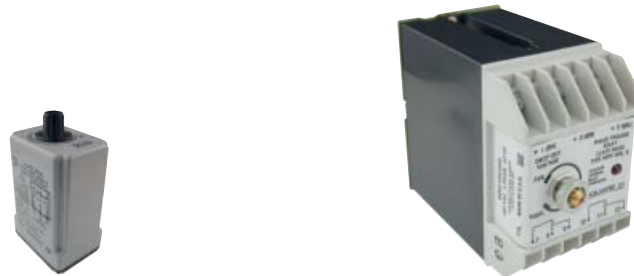


Function	Phase reversal and presence of phases					
		+ Undervoltage	+ Over and undervoltage		+ Imbalance	
Adjustable time delay	without	without	0.1–10 s	0.1–10 s	0.1–10 s	0.1–10 s
Supply voltage	200–500 V	380–500 V	200–240 V	380–500 V	200–240 V	380–500 V
Output	2 N.C./2 N.O.	2 N.C./2 N.O.	2 N.C./2 N.O.	2 N.C./2 N.O.	2 N.C./2 N.O.	2 N.C./2 N.O.
Catalog number	RM4TG20	RM4TU02	RM4TR31 (1)	RM4TR32 (1)	RM4TA31	RM4TA32

(1) Relay with adjustable voltage thresholds.



Function	Phase reversal and presence of phases					
		+ Undervoltage		+ 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



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 RM4, reference **Catalog 8430CT0001**. For additional information on 8430, reference **Catalog 8430CT9701**.

Zelio® Control Relays

Current and voltage measurement relays

(1) 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 under current		over and under voltage			
	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
Adjustable time delay	0.05–30 s		0.05–30 s	0.05–30 s	0.05–30 s	0.1–10 s
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.
Catalog number	RM4JA31.. (1)	RM4JA32.. (1)	RM4UA31.. (1)	RM4UA32.. (1)	RM4UA33.. (1)	RM4UB35

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

Voltage	(2)	(3)
20–80 Vac/dc	–	6
24 Vac	1	–
65–260 Vac/dc	–	7
120 Vac	3	–
240 Vac	4	–



Function	Detection of over and under current		over and under voltage			
	Measuring range	3–20 mA 10–100 mA 50–500 mA	0.01–1 A 0.5–5 A 1–10 A	0.2–2 V 1–10 V 6–60 V	15–150 V 30–300 V 60–600 V	9.6–15.6 Vdc 20–80 Vac/dc 65–260 Vac/dc
Adjustable time delay	0.1–3 s		0.1–3 s	0.1–3 s	0.1–3 s	0.1–3 s
Output	1 N.C./1 N.O.		1 N.C./1 N.O.	1 N.C./1 N.O.	1 N.C./1 N.O.	1 N.C./1 N.O.
Catalog number	RM8487102..(2)	RM8487103..(2)	RM8487202..(2)	RM8487203..(2)	RM8487204..(3)	RM8487205..(3)

(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	–

Liquid level control relays



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 N.C./1 N.O.	2 N.C./2 N.O.
Catalog number	RM4LG01.. (4)	RM4LA32.. (4)

Liquid level control probe type	Measuring electrode and catalog number electrode	1 simple stainless steel electrode in PVC protective casing
Mounting	suspended	suspended
Maximum operating temperature	100°C / 212°F	100°C / 212°F
Catalog number	LA9RM201	RM79696043



Display	LCD	
Supply voltage	Internal Battery	
Number of digits displayed	8	
Counting frequency	40 Hz or 7.5 kHz	40 Hz or 7 kHz
Type of zero reset	Electric	
Front face dimensions, W x H (mm / in.)	48 x 24 / 1.89 x 0.94	48 x 24 / 1.89 x 0.94
Catalog number	RC87610050	RC87610340

Hour counters



Display	LCD	
Supply voltage	Internal Battery	
Number of digits displayed	6	
Counting frequency	-	
Type of zero reset	Electric	Electric
Front face dimensions, W x H (mm / in.)	48 x 24 / 1.89 x 94	48 x 24 / 1.89 x 94
Catalog number	RC87610150	RC87610440

Multifunction counters



Display	LCD		LED			
Number of digits displayed	5					
Counting frequency	30 Hz to 9 kHz					
Type of reset	Manual, electric or automatic					
Front face dimensions, W x H (mm / in.)	48 x 48 / 1.89 x 1.89					
Output	2 N.O.	2 solid state	2 N.O.	2 solid state		
Catalog number	Supply voltage	10–30 Vdc	RC87618222	RC87618262	RC87618322	RC87618362
		20–55 Vac	RC87618224	RC87618264	RC87618324	RC87618364
		80–260 Vac	RC87618228	RC87618268	RC87618328	RC87618368

Zelio® Count—Counters Totalizers



Display	Mechanical				LCD
Supply voltage	24 Vdc				Battery
Number of digits displayed	5	6	6	8	8
Counting frequency	20 Hz	10 Hz	25 Hz	25 Hz	7.5 kHz
Type of zero reset	Manual	Without	Manual	Without	Manual (1)
Front face dimensions, W x H (mm)	41.5 x 31	30 x 20	60 x 50	60 x 50	48 x 24
(in.)	1.63 x 1.22	1.18 x 0.79	2.36 x 1.97	2.36 x 1.97	1.89 x 0.94
Catalog number	XBKT50000U10M	XBKT60000U00M	XBKT60000U10M	XBKT80000U00M	XBKT81030U33E

(1) With electrical interlocking.

MACHINE CONTROL

Hour counters



Display	Mechanical		LCD
Supply voltage	24 Vac	230 Vac	Battery
Number of digits / display	7 (99,999.99 h)	7 (99,999.99 h)	8 (999,999.99 h)
Supply frequency	50 Hz	50 Hz	Mode: 1/100 hour
Type of zero reset	Without	Without	Manual (1)
Front face dimensions, W x H (mm / in.)	48 x 48 / 1.89 x 1.89	48 x 48 / 1.89 x 1.89	48 x 24 / 1.89 x 0.94
Catalog number	XBKH70000004M	XBKH70000002M	XBKH81000033E

(1) With electrical interlocking.

Multifunction counters



Display	LCD		LED			
Number of digits displayed	6					
Counting frequency	5 kHz					
Type of reset	Manual, electric and automatic					
Front face dimensions, W x H (mm / in.)	48 x 48 / 1.89 x 1.89					
Preselection number	1	2	1	2		
Catalog number	Supply voltage	24 Vdc	XBKP61130G30E	XBKP61230G30E	XBKP62130G30E	XBKP62230G30E
	115 Vac		XBKP61130G31E	XBKP61230G31E	–	–
	230 Vac		XBKP61130G32E	XBKP61230G32E	XBKP62130G32E	XBKP62230G32E



Type of single function relay width 22.5 mm (0.89 in.), relay output	On-delay		Off-delay		
	no	yes	no	yes	yes
External control	no	yes	no	yes	yes
Supply voltage	24 Vac/dc 110–240 Vac	24 Vac/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 N.C./1 N.O.	2 N.C./2 N.O. (1)	1 N.C./1 N.O.	2 N.C./2 N.O. (1)	1 N.C./1 N.O.
Catalog number	RE7TL11BU	RE7TP13BU	RE7RB11MW	RE7RL13BU	RE7RM11BU

(1) 1 selectable in instantaneous mode.



Type of single function relay width 22.5 mm (0.89 in.), relay output	Repeat cycle	Interval
External control	yes	no
Supply voltage	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
Output	1 N.C./1 N.O.	1 N.C./1 N.O.
Catalog number	RE7CV11BU	RE7PE11BU



Type of multifunction relay	6 functions (2)	8 functions (3)
Supply voltage	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
Output	1 N.C./1 N.O.	2 N.C./2 N.O. (1 selectable in instantaneous mode)
Catalog number	RE7ML11BU	RE7MY13BU

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

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

Modular timers



Type of modular timer width 17.5 mm (0.69 in.), relay output	On-delay	Multifunction (1)	
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–100 h
Output	1 N.C./1 N.O.	1 N.C./1 N.O.	1 N.C./1 N.O.
Catalog number	RE88826115	RE88826105	RE88826103

(1) Multifunction: On-delay, Off-delay, Totalizer, Repeat cycle, One shot, Interval.



Type of modular timer width 17.5 mm (0.69 in.), relay output	Repeat cycle	Interval	Off delay	One shot
External control	–	–	–	–
Supply voltage	24 Vdc / 24–240 Vac	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	0.1 s–100 h
Output	1 N.C./1 N.O.	1 N.C./1 N.O.	1 N.C./1 N.O.	1 N.C./1 N.O.
Catalog number	RE88826155	RE88826145	RE88826135	RE88826125



Type of modular timer width 17.5 mm (0.69 in.), solid-state output	On-delay	Multifunction (1)
Supply voltage	24–240 Vac/dc	24–240 Vac
Timing range	0.1 s–100 h	0.1 s–100 h
Output	solid-state	solid-state
Catalog number	RE88826014	RE88826004

(1) Multifunction: On-delay, Off-delay, Totalizer, Repeat cycle, One shot, Interval.

Zelio® Time—Timing relays

Plug-in timers



MACHINE CONTROL

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



Type of plug-in timer			One Shot	Repeat Cycle	On- Delay	Multifunction	
Supply Voltage			120 Vac/110 Vdc	120 Vac/110 Vdc	120 Vac	24 Vac	120 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.	2 N.C./2 N.O.
Resistive Contact Rating			10 A	10 A	10 A	10 A	10 A
Output Pins			11	8	8	11	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	9050JCK70V20
Relay socket			8501NR51	8501NR51	8501NR51	8501NR61	8501NR61



Type of plug-in timer		Miniature On-Delay	On-Delay	Off- Delay	Repeat Cycle	Multifunction
Supply Voltage		100–127 Vac	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	0.1 s to 100 h
Relay Output		4 N.C./4 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		5 A	8 A	8 A	8 A	8 A
Output Pins		14	8	11	11	11
Catalog Number		RE88896206	RE88867215	RE88867435	RE88867455	RE88867305
	Relay socket	8501NR45	8501NR51	8501NR61	8501NR61	8501NR61



Type of power supply 1-phase regulated switch mode		Compact AUTO reset of wide range automatic protection			Modular AUTO reset of automatic protection	
Input voltage		100–240 Vac, 110–220 Vdc (compatible)			100–240 Vac	
Output voltage		24 Vdc	24 Vdc	24 Vdc	12 Vdc	24 Vdc
Nominal Power / Current		7.5 W / 0.3 A	15 W / 0.6 A	30 W / 1.2 A	22 W / 1.9 A	30 W / 1.3 A
Certifications		cULus, TÜV			UL, CSA, TÜV	
Conformity to standards	Safety	UL508, IEC/EN 60950			IEC/EN 60950, IEC/EN 61131-2/A11	
	EMC	EN 50081-2, EN 50082-2			EN 50081-2, IEC 61000-6-2 (EN 50082-2)	
Emission	Conducted and radiated	EN 55011, EN 55022 class A		EN 55011, EN 55022 class B		
Dimensions, W x D x H	mm	45 x 70 x 75	45 x 95 x 75		72 x 70 x 110	
	in.	1.77 x 2.76 x 2.95	1.77 x 3.74 x 2.95		2.83 x 2.76 x 4.33	
Catalog number		ABL7CEM24003	ABL7CEM24006	ABL7CEM24012	ABL7RM1202	ABL7RM2401



Type of power supply 1-phase regulated switch mode		Universal, wide range AUTO reset of automatic protection				
Input voltage		100–240 Vac, 110–230 Vdc (version ABL7RP**)				
Output voltage		24 Vdc				
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 (mm / in.)		27 x 120 x 120 / 1.06 x 4.72 x 4.72	54 x 120 x 120 / 2.13 x 4.72 x 4.72	135 x 120 x 120 / 5.31 x 4.72 x 4.72		
Catalog number		ABL7RE2402	ABL7RE2403	ABL7RE2405	ABL7RP2405(1)	ABL7RE2410 ABL7RP2410(1)

(1) AUTO/MAN reset of automatic protection.



Type of power supply 3-phase regulated switch mode		Industrial, wide range AUTO/MAN reset of automatic protection			
Input voltage		3 phase x 400–520 Vac			
Output voltage		24 Vdc			
Nominal Power / Current		120 W / 5 A	240 W / 10 A	480 W / 20 A	960 W / 40 A
Certifications		cULus, cULus			
Conformity to standards	Safety	IEC/EN 60950			
	EMC	EN 50081-1, EN 50082-2			
	Low frequency harmonic currents	–		EN61000-3-2	
Emission	Conducted and radiated	EN 55011, EN 55022 class B			
Dimensions, W x D x H	mm	68 x 171 x 127		84 x 240 x 209	106 x 275 x 242
	in.	2.68 x 6.73 x 5.00		3.31 x 9.45 x 8.23	4.17 x 10.83 x 9.53
Catalog number		ABL7UES24050	ABL7UPS24100	ABL7UPS24200	ABL7UPS24400



Type of base	Compact		
Supply voltage	100–240 Vac		
Number of discrete inputs/outputs	10	16	24
Number of discrete inputs (24 Vdc)	6 sink/source	9 sink/source	14 sink/source
Number of discrete outputs	4 relay, 2 A	7 relay, 2 A	10 relay, 2 A
Type of connection	Screw terminal block, non removable		
Number of I/O expansion modules possible	–	–	4
Counting	3 @ 5 kHz, 1 @ 20 kHz		
Serial ports	1 x RS 485	1 x RS 485; optional: 1 x RS 232C or RS485	
Protocols	Modbus Master/Slave, ASCII, remote I/Os		
Dimensions, W x D x H (mm / in.)	80 x 70 x 90 / 3.15 x 2.76 x 3.54	80 x 70 x 90 / 3.15 x 2.76 x 3.54	95 x 70 x 90 / 3.74 x 2.76 x 3.54
Catalog number	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF
	Clock (optional)	TWDXCPRTC	
	Display (optional)	TWDXCPODC	



Type of base	Modular		
Number of discrete inputs/outputs	20		40
Number of discrete inputs (24 Vdc) (1)	12 sink/source	12 sink/source	24 sink/source
Number of discrete outputs	8 transistor, source 0.3 A	6 relay and 2 transistor, source 0.3 A	16 transistor, source 0.3 A
Type of connection	HE 10 connector	Removable screw terminal block	HE 10 connector
Number of I/O expansion modules possible	4	7	7
Supply voltage	24 Vdc		
Integrated counting and positioning	Counting: 2 @ 5 kHz, 2 @ 20 kHz; Positioning: PLS / PWM 2 @ 7 kHz		
Serial ports	1 x RS 485; optional: 1 x RS 232C or RS485		
Protocols	Modbus Master/Slave, ASCII, remote I/Os		
Dimensions, W x D x H (mm / in.)	35.4 x 70 x 90 / 1.39 x 2.76 x 3.54	47.5 x 70 x 90 / 1.87 x 2.76 x 3.54	47.5 x 70 x 90 / 1.87 x 2.76 x 3.54
Catalog number	TWDLMDA20DTK (1)	TWDLMDA20DRT	TWDLMDA40DTK (1)
	Clock (optional)	TWDXCPRTC	
	Display (optional)	TWDXCPODM	
	Memory expansion (optional)	–	TWDXCPMF64

(1) Also available: **SINK** transistor output versions (TWDLMDA20DUK and TWDLMDA40DUK).

Accessories

Pre-wired system for modules with HE 10 connector		For Modular Bases TWDLMDA20DTK/40DTK	For Inputs TWDDI16DK/32DK	For Outputs TWDDO16TK/32TK
TwidoFast “bared” cable	L = 3 m (9.8’) L = 5 m (16.4’)	TWDFCW30M TWDFCW50M	TWDFCW30K TWDFCW50K	TWDFCW30K TWDFCW50K
Telefast connection bases	L = 1 m (3.3’) L = 2 m (6.6’)	TWDFST20DR10 TWDFST20DR20	TWDFST16D10 TWDFST16D20	TWDFST16DR10 TWDFST16DR20

Memory Cartridge and Software	Memory cartridge	TwidoSoft software
Description	Application update	with cable
Catalog number	TWDXCPMFK32	TWDSPU1001V10M

Input/output modules



Type of module		Analog			
Number of Analog inputs/outputs		2 inputs	1 output	2 inputs / 1 output	
Connection		Removable screw terminal block			
Inputs	Range	0–10 V (non differential) 4–20 mA (differential)	–	0–10 V (non differential) 4–20 mA (differential)	Thermocouple, type K, J, T Thermocouple, 3-wire Pt 100
	Resolution	12 bits (4096 points)		12 bits (4096 points)	
Outputs	Range	–	0–10 V 4–20 mA		
	Resolution	–	12 bits (4096 points)		
Input error (accuracy at 25°C (77°F))		± 0.2% of full scale			
Supply voltage		24 Vdc			
Dimensions, W x D x H (mm / in.)		23.5 x 70 x 90 / 0.93 x 2.76 x 3.54			
Catalog number		TWDAMI2HT	TWDAMO1HT	TWDAMM3HT	TWDALM3LT

MACHINE CONTROL



Type of module		Discrete				
Number of Discrete inputs/outputs		8	4 Inputs / 4 Outputs	16	16	32
Connection		Removable screw terminal block			HE 10 connectors	
Catalog number	Inputs 24 Vdc (1)	TWDDDI8DT	TWDDMM8DRT	TWDDDI16DT	TWDDDI16DK	TWDDDI32DK
	Relay outputs 2 A	TWDDRA8RT	TWDDMM8DRT	TWDDRA16RT	–	–
	Transistor outputs, source 0.1 A	TWDDDO8TT (2)	–	–	TWDDDO16TK (2)	TWDDDO32TK (2)

(1) All inputs are sink/source.

(2) Also available: **SINK** transistor output versions (TWDDDO8UT, TWDDDO16UK and TWDDDO32UK).

Communication modules



Type of module	Twido AS-Interface Master	Serial interface module			Serial interface adaptor		
Communication type (non isolated)	AS-Interface	RS 232C	RS 485		RS 232C	RS 485	
Connection	Screw terminal	Mini-DIN connector	Screw terminals		Mini-DIN connector	Screw terminals	
Protocol	AS-I, V2	Modbus Master/Slave, ASCII, remote I/Os					
Twido base compatibility	Compact base TWD LCAA 24 DRF and all modular bases TWD LMDA	Modular base TWD LMDA			Compact base TWD LCAA 16/24 DRF Modular base via built-in display module TWDXCPODM		
Catalog number	TWDNOH10M3	TWDNOZ232D	TWDNOZ485D	TWDNOZ485T	TWDNAC232D	TWDNAC485D	TWDNAC485T



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	–	Yes		
Number of terminals per channel/on row number	1/2	1/1	2/2	3/3
Dimensions, W x D x H (mm / in.)	55x59x67 / 2.17x2.32x2.64	106 x 60 x 49 / 4.17 x 2.36 x 1.93		
Catalog number	–	ABE7H16C11	ABE7H16C21	ABE7H16C31
Cable L = 1 m (3.3')	ABE7H20E100 (1)	–	–	–
Cable L = 2 m (6.6')	ABE7H20E200 (1)	–	–	–
Cable L = 3 m (9.8')	ABE7H20E300 (1)	–	–	–
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: (3.3') (2)	ABFH20H100			

(1) Connection cable supplied for PLCs.

(2) For a 2 m (6.6') length cable, replace the number 1 in the catalog number by 2, and for a 3 m (9.8') length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



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	–	Yes	–	–	Yes	Yes
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 (mm / in.)	125 x 58 x 70 / 4.92 x 2.28 x 2.76	84 x 58 x 70 / 3.31 x 2.28 x 2.76	125 x 58 x 70 / 4.92 x 2.28 x 2.76			
Catalog number	ABE7H16R10	ABE7H16R11	ABE7H16R50	ABE7H16R20	ABE7H16R21	ABE7H16R31
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: (3.3')	ABFH20H100 (2)					

(2) For a 2 m (6.6') length cable, replace the number 1 in the catalog number by 2, and for a 3 m (9.8') 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, W x D x H (mm / in.)	143 x 58 x 70 / 5.63 x 2.28 x 2.76	125 x 58 x 70 / 4.92 x 2.28 x 2.76	125 x 58 x 70 / 4.92 x 2.28 x 2.76
Catalog number	ABE7CPA01	ABE7CPA02	ABE7CPA03
Connection cable recommended for Modicon PLCs (4)	TSX Micro L = 2.5 m (8.2') Premium L = 3 m (9.8')	TSXCCPS15 –	–
		TSXCAP030	

(3) Or 8 inputs + 2 outputs, analog.

(4) Connection cables available for other PLCs, please refer to Catalog 8501CT9801.

Sockets with plug-in relays and terminals



MACHINE CONTROL

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, 230 Vac
Number of contacts	–	–	1 N.O.
Polarity distribution	–	–	(1) Volt-free (4)
Number of terminals per channel	2		
Dimensions, W x D x H (mm / in.)	206 x 58 x 77 / 8.11 x 2.28 x 3.03		
Catalog number	ABE7S16E2B1 ABE7S16E2F0	ABE7S16S2B0(2) ABE7S16S1B2	ABE7R16S111 ABE7R16S210

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (3.3'): **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 (6.6') length cable, replace the number 1 in the catalog number by 2, and for a 3 m (9.8') length, by 3. (Example: ABFH20H100 becomes ABFH20H200).
- (4) No shared commons.



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 N.C./1 N.O.		2 N.C./2 N.O.
Polarity distribution	(5)	(6)	Volt-free (no shared commons)		
Number of terminals per channel	2		2 or 3		2 to 6
Dimensions, W x D x H (mm / in.)	110 x 54 x 89 / 4.33 x 2.13 x 3.50		211 x 64 x 89 / 8.30 x 2.52 x 3.50		272 x 74 x 89 / 10.71 x 2.91 x 3.50
Catalog number	ABE7R16T111	ABE7R16T212	ABE7R16T210	ABE7R16T230	ABE7R16T330 ABE7R16T370

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (3.3'): **ABFH20H100** (7)

- (5) Contact common per group of 4 channels.
- (6) Common on both poles.
- (7) For a 2 m (6.6') length cable, replace the number 1 in the catalog number by 2, and for a 3 m (9.8') length, by 3. (Example: ABFH20H100 becomes ABFH20H200).

Connection cables for PLCs ⁽⁸⁾



Input/Output functions	Discrete	Analog	Analog and counter	Counter	Axis control
Catalog number					
Cable L = 1 m (3.3')	ABFH20H100	–	–	–	–
Cable L = 2 m (6.6')	ABFH20H200	ABFY25S200	–	–	TSXCXP213
Cable L = 2.5 m (8.2')	–	–	TSXCCPS15	TSXCCPH15	–
Cable L = 3 m (9.8')	ABFH20H300	TSXCAP030	–	–	–
Cable L = 6 m (19.7')	–	–	–	–	TSXCXP613

- (8) Modicon, TSX Micro and Premium PLCs.
- For other connection cables and accessories, please refer to Catalog 85019801.



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		16 A (1 mm ²)		
Product certification		cULus		
Dimensions, W x D x H (mm / in.)		50.2 x 42 x 92.2 / 1.98 x 1.65 x 3.63	50.2 x 42 x 149.2 / 1.98 x 1.65 x 5.87	
Catalog number	Without LEDs	Cable L = 5 m (16.4')	ABE9C1240L05	ABE9C1280L05
		Cable L = 10 m	ABE9C1240L10	ABE9C1280L10
	With LEDs (1)	Cable L = 5 m (16.4')	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		16 A	
Product certification		cULus	
Dimensions, W X D x H (mm / in.)		50.2 x 36.5 x 92.2 / 1.98 x 1.44 x 3.63	50.2 x 36.5 x 149.2 / 1.98 x 1.44 x 5.87
Catalog number	Without LEDs	ABE9C1240C23	ABE9C1280C23
	With LEDs (1)	ABE9C1241C23	ABE9C1281C23

(1) Green LED: power supply status, yellow LED: channel status.

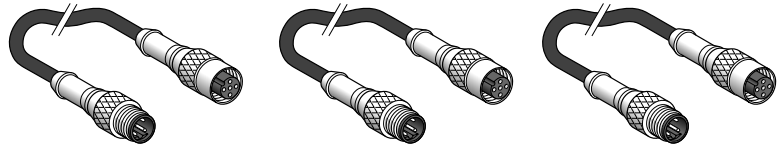
Accessories



Type of accessory		Splitter boxes w/o cable		Terminal connectors		Sealing plugs (sold in lots of 10)
		Without LEDs	With LEDs	Cable L = 5 m (16.4')	Cable L = 10 m (32.8')	
Catalog number	4-channel	ABE9C1240M	ABE9C1241M	ABE9XCA1405	ABE9XCA1410	–
	8-channel	ABE9C1280M	ABE9C1281M	ABE9XCA1805	ABE9XCA1810	–
	for M12 connector	–	–	–	–	FTXCM12B

Cabling accessories

M12 / M12 jumper cables



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 (1)			PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m (3.3')	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
		L = 2 m (6.6')	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

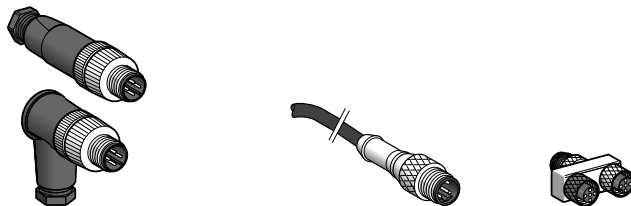
MACHINE CONTROL

M12 or DIN jumper cables



Type			Male / Female jumper cables		
Type of male connector, interface side			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, clip together	M8, 3-pin straight, screw thread	DIN 43650A elbowed, screw thread
Cable (1)			PUR, black	PUR, black	PUR, black
Catalog number	Cable	L = 1 m (3.3')	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
		L = 2 m (6.6')	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

Connectors, splitter box



Type			Connectors	Pre-wired connectors	Splitter box "Y"	
Type of male connector, interface side			M12, 4-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 (1)			-	PUR, black	-	-
Catalog number	Straight connector, screw thread		XZCC12MDM40B	-	FTXCY1212	FTXCY1208
	Elbowed connector, screw thread		XZCC12MCM40B	-	-	-
	Cable	L = 0.5 m (1.6')	-	XZCP1564L05	-	-
		L = 2 m (6.6')	-	XZCP1564L2	-	-

(1) PUR = polyurethane.

Splitter boxes for fieldbus Plastic enclosure, IP67, Advantys FTB



Type of bus		CANopen	DeviceNet	Profibus	InterBus
Number of channels		8			
Type of female connector		M12, 5-pin			
Max. voltage / current of inputs		24 Vdc / 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 (mm / in.)		63 x 50.5 x 220 / 2.48 x 1.99 x 8.66			63x69x220 / 2.48x2.72x8.66
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	FTB1IB16EP0
	8 inputs/8 outputs	FTB1CN08E08SP0	FTB1DN08E08SP0	FTB1DP08E08SP0	FTB1IB08E08SP0
	12 inputs/4 outputs	FTB1CN12E04SP0	FTB1DN12E04SP0	FTB1DP12E04SP0	FTB1IB12E04SP0
	16 configurable inputs/outputs	FTB1CN16CP0	FTB1DN16CP0	FTB1DP16CP0	FTB1IB16CP0

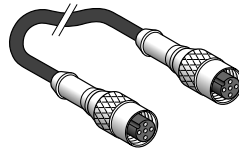
Metal enclosure, IP67, Advantys FTB



Type of bus		DeviceNet	Profibus
Number of channels		8	
Type of female connector		M12, 5-pin	
Max. voltage / current of inputs		24 Vdc / 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 (mm / in.)		62.7 x 38.9 x 224.7 / 2.47 x 1.53 x 8.85	
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	FTB1DN16EM0	FTB1DP16EM0
	8 inputs/8 outputs/configurable outputs	FTB1DN08E08CM0	FTB1DP08E08CM0
	16 configurable inputs/outputs	FTB1DN16CM0	FTB1DP16CM0

Accessories for FTB splitter boxes ⁽¹⁾

Bus connection cables



(1) For sensor and actuator cabling accessories:
see page 3-15

Type of bus			CANopen	DeviceNet	ProfiBus	InterBus
Type of female connector			M12, 5-pin, at either end			-
Connector coding			A encoded		B encoded	-
Catalog number	Cable	L = 0.3 m (9.8')	FTXCN3203		FTXDP3203	-
		L = 0.6 m (19.7')	FTXCN3206		FTXDP3206	FTXIB1206 (2)
		L = 1 m (3.3')	FTXCN3210		FTXDP3210	FTXIB1210 (2)
		L = 2 m (6.6')	FTXCN3220		FTXDP3220	FTXIB1220 (2)
		L = 3 m (9.8')	FTXCN3230		FTXDP3230	-
		L = 5 m (16.4')	FTXCN3250		FTXDP3250	FTXIB1250 (2)

(2) Catalog number includes the Bus connection cable + the power supply cable.

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Power supply connection cables



Type of bus			CANopen	DeviceNet	ProfiBus
Type of female connector			Type 7/8, 5-pin, at either end		
Catalog number	Cable	L = 0.6 m (19.7')	FTXDP2206		
		L = 1 m (3.3')	FTXDP2210		
		L = 2 m (6.6')	FTXDP2220		
		L = 5 m (16.4')	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 (9.8')	FTXDP2130		
		L = 5 m (16.4')	FTXDP2150		

Accessories

Type of bus		CANopen	DeviceNet	ProfiBus	Interbus
Catalog number	Configuration CD-ROM	FTXES00			
	Diagnostics M12 adaptor	FTXDG12			
	Power supply T-connector	FTXCNT1			-
	Line terminator	FTXCNTL12		FTXDPTL12	-



Clip-on mounting on 35 mm 25 rails		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	Pass through blocks	AB1AA135U2GR	AB1AAAC122GR	AB1RRAL22
	Grounding blocks	AB1AATP135U2	AB1AAAC122VE	-
#18–14 AWG	Pass through blocks	AB1AA235U2GR	AB1AAAC122GR	AB1RRAL22
	Grounding blocks	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 25 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	Pass through blocks	AB1RR235U2GR	AB1RRAC242GR	AB1RRAL22 (1)
	Grounding blocks	AB1RRTP235U2	AB1RRTPAC242	-
#22–10 AWG	Pass through blocks	AB1RR435U2GR	AB1RRAC242GR	AB1RRAL42 (1)
	Grounding blocks	AB1RRTP435U2	AB1RRTPAC242	-
#24–8 AWG	Pass through blocks	AB1RR635U2GR	-	AB1RRAL62
	Grounding blocks	AB1RRTP635U2	-	-
#24–6 AWG	Pass through blocks	AB1RR1035U2GR (2)	-	AB1RRAL102
	Grounding blocks	AB1RRTP1035U2 (2)	-	-
#24–4 AWG	Pass through blocks	AB1RR1635U2GR (2)	-	AB1RRAL162
	Grounding blocks	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



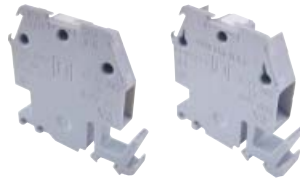
Clip-on mounting on 35 mm 25 rails		Terminal blocks (sold in lots of 100)	End barrier (sold in lots of 50)	2-pole jumper (1) (sold in lots of 10)
#22–12 AWG	Pass through blocks	AB1VV235U	AB1AC24	AB1ALN22 (1)
	Grounding blocks	-	-	-
#22–10 AWG	Pass through blocks	AB1VV435U	AB1AC24	AB1ALN42 (1)
	Grounding blocks	AB1TP435U	-	-
#22–8 AWG	Pass through blocks	AB1VV635U	AB1AC6	AB1ALN62 (1)
	Grounding blocks	AB1TP635U	-	-
#16–6 AWG	Pass through blocks	AB1VVN1035U (2)	AB1ACN10	AB1ALN102 (1)
	Grounding blocks	AB1TP1035U (2)	-	-
#12–4 AWG	Pass through blocks	AB1VVN1635U (2)	AB1ACN16	AB1ALN162 (1)
	Grounding blocks	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.

Terminal blocks—NEMA

Screw clamp technology



Mounting on 35mm  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.

MACHINE CONTROL

Thermal-magnetic circuit protectors



Mounting on 35mm  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.

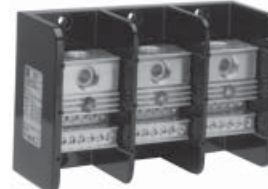


Fuse Type	Type M	Class CC	Class H	Class H	Class R	Class R	
Maximum voltage rating	600	600	250	600	250	600	
Maximum current rating	30	30	30	30	30	30	
	1-pole	9080FB1611M	9080FB1611CC	9080FB1211	9080FB1611	9080FB1211R	9080FB1611R
	2-pole	9080FB2611M	9080FB2611CC	9080FB2211	9080FB2611	9080FB2211R	9080FB2611R
	3-pole	9080FB3611M	9080FB3611CC	9080FB3211	9080FB3611	9080FB3211R	9080FB3611R

Power Distribution Blocks

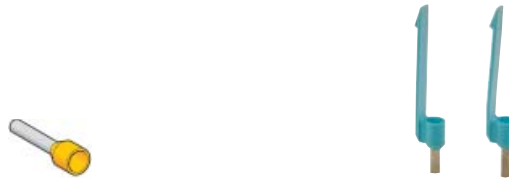


Splitter Blocks	Aluminum Lugs				Copper Lugs		
Main wire (Number of wires in)	(1) #14–2 AWG	(1) #14–2/0 AWG	(1) #6–350 kcmil	(1) #6–600 kcmil	(1) #18–1/0 AWG	(1) #6–250 kcmil	
Branch wire (Number of wires out)	(1) #14–2 AWG	(1) #14–2/0 AWG	(1) #6–350 kcmil	(1) #6–600 kcmil	(1) #18–1/0 AWG	(1) #6–250 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



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

Insulated cable ends



Single cable ends			Without Marking Flag (Sold in lots of 1000)	With Marking Flag (Sold in lots of 1000)
#22 AWG	White		DZ5CE005UL	DZ5CA005UL
#20 AWG	Blue		DZ5CE007UL	DZ5CA007UL
#18 AWG	Red		DZ5CE010UL	DZ5CA010UL
#16 AWG	Black		DZ5CE015UL	DZ5CA015UL
#14 AWG	Grey		DZ5CE025UL	DZ5CA025UL

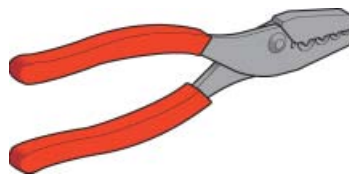
MACHINE CONTROL



Dual cable ends			Without Marking Flag (Sold in lots of 500)
#22 AWG	White		AZ5DE005
#20 AWG	Blue		AZ5DE007
#18 AWG	Red		AZ5DE010
#16 AWG	Black		AZ5DE015
#14 AWG	Grey		AZ5DE025 (1)

(1) Sold in lots of 250.

Cabling accessories



Type	Pliers/cutters			
Functions	Stripping	Cutting/stripping	Crimping	Crimping
AWG	20-12	20-12	22-6	8-2
Catalog number	AT1PA7	AT2PE1	AT1PA2	AT2PA4



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
	24Vdc	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

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

MACHINE CONTROL

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	8501CO16V29
	24 Vdc	8501CDO6V53	8501CDO7V53	8501CDO8V53	8501CDO15V53	8501CDO16V53



Compact smart relays		With display, dc power supply					
Supply voltage		12 Vdc			24 Vdc		
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs		8	12	6	8	12	12
		discrete inputs		-		-	
		of which 0–10 V analog inputs		4		2	
Number of outputs		4 relay	8 relay	4 relay	4	8 relay	8
Dimensions, W x D x H		mm		mm		mm	
		in.		in.		in.	
Clock		yes	yes	no	yes	no	yes
References		SR2B121JD	SR2B201JD	SR2A101BD (1)	SR2B12●BD (2)	SR2A201BD (1)	SR2B20●BD (2)

(1) Programming of this smart relay in LADDER language only. For other smart relay modules, programming options include LADDER language, Function Block Diagram (FBD) and Sequential Function Chart (SFC) languages.

(2) Replace ● by the number “1” to order a smart relay with **relay outputs** and by “2” for a smart relay with **transistor outputs** (Example: SR2B121BD)



Compact smart relays		With display, ac power supply					
Supply voltage		24 Vac			100/240 Vac		
Number of inputs/outputs		12	20	10	12	20	20
Number of discrete inputs		8	12	6	8	12	12
Number of outputs		4 relay	8 relay	4 relay	4 relay	8 relay	8 relay
Dimensions, W x D x H		mm		mm		mm	
		in.		in.		in.	
Clock		yes	yes	no	no	no	no
References		SR2B121B	SR2B201B	SR2A101FU (1)	SR2B121FU	SR2A201FU (1)	SR2B201FU

(1) Programming of smart relay in LADDER language only



Compact smart relays		Without display and without buttons					
Supply voltage		24 Vdc			100/240 Vac		
Number of inputs/outputs		10	12	20	10	12	20
Number of inputs		6	8	12	6	8	12
		discrete inputs		-		-	
		of which 0–10 V analog inputs		4		-	
Number of outputs		4 relay	4 relay	8 relay	4 relay	4 relay	8 relay
Dimensions, W x D x H		mm		mm		mm	
		in.		in.		in.	
Clock		no	yes	yes	no	yes	yes
References		SR2D101BD (1)	SR2E121BD (2)	SR2E201BD (2)	SR2D101FU (1)	SR2E121FU	SR2E201FU

(1) Programming of smart relay in LADDER language only

(2) For version with **24 Vac supply** (0 analog inputs), delete the letter **D** from the end of the reference (**SR2E121B** and **SR2E201B**)

Zelio Logic Modular SR3



MACHINE CONTROL

Modular smart relays*		With display					
Supply voltage		24 Vdc		24 Vac		100/240 Vac	
Number of inputs/outputs		10	26	10	26	10	26
Number of inputs		discrete inputs		discrete inputs		discrete inputs	
		6	16	6	16	6	16
		of which 0–10 V analog inputs		of which 0–10 V analog inputs		of which 0–10 V analog inputs	
		4	6	–	–	–	–
Number of outputs		4	10	4 relay	10 relay	4 relay	10 relay
Dimensions, W x D x H		mm		mm		mm	
		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6
		in.		in.		in.	
		2.80x2.34x4.24	4.90x2.34x4.24	2.80x2.34x4.24	4.90x2.34x4.24	2.80x2.34x4.24	4.90x2.34x4.24
Clock		yes	yes	yes	yes	yes	yes
References		SR3B10●BD (1)	SR3B26●BD (1)	SR3B101B	SR3B261B	SR3B101FU	SR3B261FU

* Each modular base can be fitted with one communication module and one I/O expansion module.

(1) Replace ● by the number “1” to order a smart relay with **relay outputs** and by “2” for a smart relay with **transistor outputs** (Example: SR3B101BD)

▲ Available 2nd quarter 2004



Expansion modules (2)		Inputs / Output			Communication
Usage		For modular smart relays SR3B●●●●●			MODBUS network
Number of inputs/outputs		6	10	14	–
Number of discrete inputs		4	6	8	–
Number of outputs		2 relay	4 relay	6 relay	–
Dimensions, W x D x H		mm		mm	mm
		35.5x59.5x107.6	72x59.5x107.6	72x59.5x107.6	35.5x59.5x107.6
		in.		in.	in.
		1.40x2.34x4.24	2.83x2.34x4.24	2.83x2.34x4.24	1.40x2.34x4.24
References		24 Vdc		24 Vac	100–240 Vac
		SR3XT61BD	SR3XT101BD	SR3XT141BD	SR3MBU01BD ▲
		SR3XT61B	SR3XT101B	SR3XT141B	–
		SR3XT61FU	SR3XT101FU	SR3XT141FU	–

(2) The power supply for the expansion modules is provided via the Zelio Logic modular relays

Zelio Soft™ software and back-up memory

Software and back-up memory	Multilingual programming software	Back-up memory
Description	PC CD-ROM (Windows 95/98, NT, 2000, XP, ME) (3)	EEPROM
References	SR2SFT01	SR2MEM01
PC/Smart relay connecting cable	SR2CBL01	–
Interface for USB port	SR2CBL06	–

(3) CD-ROM containing “Zelio Soft” software, an application library, a self-training manual, installation instructions and a user’s manual.

▲ Available 2nd quarter 2004

Communication interface

Interface and software	Communication interface	Programming software
Supply voltage	12/24 Vdc	–
Description	–	PC CD ROM (Windows 95/98, NT, 2000, XP, ME)
Dimensions, W x D x H (mm / in.)	72x59.5x107.6 / 2.83x2.34x4.24	–
References	SR2COM01 ▲	SR2SFT03 ▲

Optimize the design of your Operator Interface solutions

Welcome to the Simply Smart* world compliments of Telemecanique



Telemecanique, the world leader for control and signaling components, offers you its ranges of Push Buttons, Selector Switches, Pilot Lights, Beacons and Indicating Banks (including audible units) and components for Hoisting applications.

Unequaled and of the highest quality, it is the largest offer on the market. It **intelligently** adapts to all types of applications and works exceptionally well on new equipment in both industrial and commercial environments, and is well suited for MRO use.

- **Openness:** in perfect synergy with other Telemecanique equipment, this offer optimizes the design of your Operator Interface solutions.
- **Simplicity:** clip together components insure simple, secure and fast assembly.
- **Ingenuity:** LED technology for all signaling functions: “Super Bright” LED offer for applications requiring a high level of visibility.
- **Robustness:** mechanical performance much higher than standard requirements.
- **Flexibility:** modular construction, the products evolve with the automation system.
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Control and signalling units The essential guide

A selection of the most popular selling products enabling you to quickly locate the most appropriate solution for your application.

* **Simply Smart** : using ingenuity and intelligence to continually improve ease of use.

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Control and signalling units 16 mm with plastic bezel

Complete operators with integral LED

(1):

Voltage	Letter (●)
12–24 Vac/dc (15 mA)	B
48–120 Vac (25 mA)	G
230–240 Vac (25 mA)	M



Illuminated push buttons

Type of head		Shape of head		Flush push		
				rectangular (2)		
Degree of protection				IP 65 / NEMA & UL Type 4, 4X, 13		
Mounting (mm)		panel cut-out		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				Tags for 2.8 x 0.5 Quick connectors or for soldering		
Type of push				Spring return		
				Complete products 12–24 Vac/dc		
				Products for user assembly		
Catalog number	white	N.O.	XB6 DW1B1B	ZB6 E●1B (1)	ZB6 Z1B	ZB6 DW1 (2)
		N.C. + N.O.	XB6 DW1B5B	ZB6 E●1B (1)	ZB6 Z5B	ZB6 DW1 (2)
	green	N.O.	XB6 DW3B1B	ZB6 E●3B (1)	ZB6 Z1B	ZB6 DW3 (2)
		N.C. + N.O.	XB6 DW3B5B	ZB6 E●3B (1)	ZB6 Z5B	ZB6 DW3 (2)
	red	N.C.	XB6 DW4B2B	ZB6 E●4B (1)	ZB6 Z2B	ZB6 DW4 (2)
		N.C. + N.O.	XB6 DW4B5B	ZB6 E●4B (1)	ZB6 Z5B	ZB6 DW4 (2)
	yellow	N.O.	XB6 DW5B1B	ZB6 E●5B (1)	ZB6 Z1B	ZB6 DW5 (2)
		N.C. + N.O.	XB6 DW5B5B	ZB6 E●5B (1)	ZB6 Z5B	ZB6 DW5 (2)
	blue	N.O.	XB6 DW6B1B	ZB6 E●6B (1)	ZB6 Z1B	ZB6 DW6 (2)
		N.C. + N.O.	XB6 DW6B5B	ZB6 E●6B (1)	ZB6 Z5B	ZB6 DW6 (2)
	Type of push				Maintained	
	Catalog number	white	N.O.	XB6 DF1B1B	ZB6 E●1B (1)	ZB6 Z1B
N.C. + N.O.			XB6 DF1B5B	ZB6 E●1B (1)	ZB6 Z5B	ZB6 DF1 (2)
green		N.O.	XB6 DF3B1B	ZB6 E●3B (1)	ZB6 Z1B	ZB6 DF3 (2)
		N.C. + N.O.	XB6 DF3B5B	ZB6 E●3B (1)	ZB6 Z5B	ZB6 DF3 (2)
red		N.C.	XB6 DF4B2B	ZB6 E●4B (1)	ZB6 Z2B	ZB6 DF4 (2)
		N.C. + N.O.	XB6 DF4B5B	ZB6 E●4B (1)	ZB6 Z5B	ZB6 DF4 (2)
yellow		N.O.	XB6 DF5B1B	ZB6 E●5B (1)	ZB6 Z1B	ZB6 DF5 (2)
		N.C. + N.O.	XB6 DF5B5B	ZB6 E●5B (1)	ZB6 Z5B	ZB6 DF5 (2)
blue		N.O.	XB6 DF6B1B	ZB6 E●6B (1)	ZB6 Z1B	ZB6 DF6 (2)
		N.C. + N.O.	XB6 DF6B5B	ZB6 E●6B (1)	ZB6 Z5B	ZB6 DF6 (2)



Pilot lights

Type of head		Shape of head		Smooth lens cap	
				rectangular (2)	
Degree of protection				IP 65 / NEMA & UL Type 4, 4X, 13	
Mounting (mm)		panel cut-out		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				Tags for 2.8 x 0.5 Quick connectors or for soldering	
Type of push				Spring return	
				Complete products 12–24 Vac/dc	
				Products for user assembly	
Catalog number	white	XB6 DV1BB	ZB6 E●1B (1)	ZB6 DV1 (2)	
	green	XB6 DV3BB	ZB6 E●3B (1)	ZB6 DV3 (2)	
	red	XB6 DV4BB	ZB6 E●4B (1)	ZB6 DV4 (2)	
	yellow	XB6 DV5BB	ZB6 E●5B (1)	ZB6 DV5 (2)	
	blue	XB6 DV6BB	ZB6 E●6B (1)	ZB6 DV6 (2)	

(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** (XB6 DW1B1B becomes XB6 CW1B1B).

For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6 DW1B1B becomes XB6 AW1B1B).

Non-illuminated complete operators



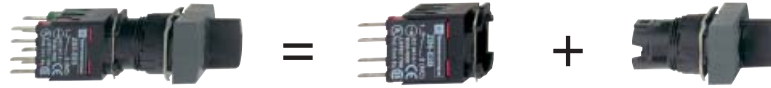
Push buttons					
Type of head			Flush push		
Shape of head			rectangular (2)		
Degree of protection			IP 65 / NEMA & UL Type 4, 4X, 13		
Mounting (mm)	panel cut-out		16.2 ^{+0.2} ₀		
	mounting centers		24 x 18 with rectangular head, 18 x 18 with square or circular head		
Dimensions (mm)	W x H x D (below head)		24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head		
Connection			Tags for 2.8 x 0.5 Quick connectors or for soldering		
Type of push			Spring return		
			Complete products	Products for user assembly	
Catalog number	white	N.O.	XB6 DA11B	ZB6 Z1B	ZB6 DA1 (2)
		N.C. + N.O.	XB6 DA15B	ZB6 Z5B	ZB6 DA1 (2)
	black	N.O.	XB6 DA21B	ZB6 Z1B	ZB6 DA2 (2)
		N.C.	XB6 DA22B	ZB6 Z2B	ZB6 DA2 (2)
		N.C. + N.O.	XB6 DA25B	ZB6 Z5B	ZB6 DA2 (2)
	green	N.O.	XB6 DA31B	ZB6 Z1B	ZB6 DA3 (2)
		N.C. + N.O.	XB6 DA35B	ZB6 Z5B	ZB6 DA3 (2)
	red	N.O.	XB6 DA41B	ZB6 Z1B	ZB6 DA4 (2)
		N.C.	XB6 DA42B	ZB6 Z2B	ZB6 DA4 (2)
		N.C. + N.O.	XB6 DA45B	ZB6 Z5B	ZB6 DA4 (2)
	yellow	N.O.	XB6 DA51B	ZB6 Z1B	ZB6 DA5 (2)
		N.C. + N.O.	XB6 DA55B	ZB6 Z5B	ZB6 DA5 (2)
	blue	N.O.	XB6 DA61B	ZB6 Z1B	ZB6 DA6 (2)
		N.C. + N.O.	XB6 DA65B	ZB6 Z5B	ZB6 DA6 (2)

OPERATOR INTERFACE



30 mm mushroom head Emergency stop push buttons					
Type of head			Trigger action		
Shape of head			cylindrical		
Type of push			Turn to release		
			Complete products	Products for user assembly	
Catalog number	red	1 N.C. + 1 N.O.	XB6 AS8345B	ZB6 Z5B	ZB6 AS834
Type of push			Key release, Ronis 200		
Catalog number	red	1 N.C. + 1 N.O.	XB6 AS9345B	ZB6 Z5B	ZB6 AS934

(2) For products with a square head, replace the letter **D** in the catalog number by the letter **C** (XB6 DA11B becomes XB6 CA11B).
 For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6 DA11B becomes XB6 AA11B).



Selector switches and key switches

Type of head		Black handle			
Shape of head		rectangular (1)			
Degree of protection		IP 65 / NEMA & UL Type 4, 4X, 13 (except key switches)			
Mounting (mm)	panel cut-out	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		Tags for 2.8 x 0.5 Quick connectors or for soldering			
Type of operator		Black handle			
		Complete products	Products for user assembly		
Number and type of positions		2 positions maintained	2 positions maintained	2 positions spring return to center	
Catalog number	N.O.	XB6 DD221B	ZB6 Z1B	ZB6 DD22 (1)	ZB6 Z1B ZB6 DD24 (1)
	N.C. + N.O.	XB6 DD225B	ZB6 Z5B	ZB6 DD22 (1)	ZB6 Z5B ZB6 DD24 (1)
Number and type of positions		3 positions maintained	3 positions maintained	3 positions spring return to center	
Catalog number	N.C. + N.O.	XB6 DD235B	ZB6 Z5B	ZB6 DD23 (1)	ZB6 Z5B ZB6 DD25 (1)



Type of operator		Ronis key, no. 200			
		Complete products	Products for user assembly		
Number and type of positions		2 positions maintained	2 positions maintained	2 positions spring return to center	
Catalog number	N.C. + N.O.	XB6 DGC5B	ZB6 Z5B	ZB6 DGC (1)	ZB6 Z5B ZB6 DGB (1)
Number and type of positions		3 positions maintained	3 positions maintained	3 positions spring return to center	
Catalog number	N.C. + N.O.	XB6 DGH5B	ZB6 Z5B	ZB6 DGH (1)	ZB6 Z5B ZB6 DGS (1)

(1) For products with a square head, replace the letter **D** in the catalog number by the letter **C** (XB6 DD221B becomes XB6 CD221B).

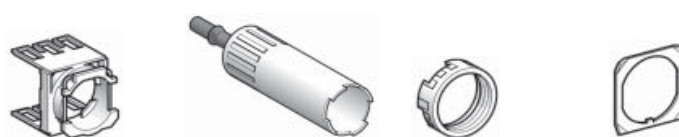
For products with a circular head, replace the letter **D** in the catalog number by the letter **A** (XB6 DD221B becomes XB6 AD221B).

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



Sub-assemblies		Bodies for push buttons and selector switches			Bodies for pilot lights			
Rated operational characteristics, AC-15: Ue = 240 V 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	Body + contacts	Contacts	Pilot light bodies	12–24 V	48–120 V	230–240 V
Catalog number		N.O.	ZB6 Z1B	ZB6 E1B	White	ZB6 EB1B	ZB6 EG1B	ZB6 EM1B
		N.C.	ZB6 Z2B	ZB6 E2B	Green	ZB6 EB3B	ZB6 EG3B	ZB6 EM3B
		2 N.O.	ZB6 Z3B	–	Red	ZB6 EB4B	ZB6 EG4B	ZB6 EM4B
		2 N.C.	ZB6 Z4B	–	Yellow	ZB6 EB5B	ZB6 EG5B	ZB6 EM5B
		N.O. + N.C.	ZB6 Z5B	–	Blue	ZB6 EB6B	ZB6 EG6B	ZB6 EM6B

OPERATOR INTERFACE



Accessories				
	Body	Bezel tightening tool + bulb extractor	Nut	Anti-rotation plate
Application	Fitting contact blocks	Fixing the switch and changing bulbs	Fixing head to panel	Selector switches, Emergency Stops
Catalog number	ZB6Y009	ZB6Y905	ZB6Y002	ZB6Y003
	Protective cover for push buttons and switches		Female Quick connector/ Solder tab	Blanking plug
Application	Circular and square head	Rectangular head	Sold in lots of 100 pieces	Plugging an unused knockout
Catalog number	ZB6YA001	ZB6YD001	ZB6Y004	ZB6Y005



Legends	Std. Plate (24 X 28 mm) for 8 X 21 mm Legend		Circular, 45 mm		
	With blank legend insert		Yellow		
	White or yellow	Black or red	Blank	Emergency stop	Arrêt d'urgence
Catalog number	ZB6YD21	ZB6YD22	ZB6Y7001	ZB6Y7330	ZB6Y7130

Non-illuminated complete operators



Push buttons, spring return								
Type of head			Chromium plated circular bezel					
Degree of protection			IP 65 / NEMA & UL Type 4X, 13 (IP 66 for booted push buttons)					
Mounting (mm)	panel cut-out		22.5 (22.3 ^{+0.4} ₀)					
	mounting centers		30 x 40					
Depth (mm)	below head		43					
Connection			Screw clamp terminals					
Type of push			Flush			Flush, booted		
	Products		Complete	For user assembly		Complete	For user assembly	
Catalog number	black	N.O.	XB4 BA21	ZB4 BZ101	ZB4 BA2	XB4 BP21	ZB4 BZ101	ZB4 BP2
	green	N.O.	XB4 BA31	ZB4 BZ101	ZB4 BA3	XB4 BP31	ZB4 BZ101	ZB4 BP3
	red	N.C.	XB4 BA42	ZB4 BZ102	ZB4 BA4	XB4 BP42	ZB4 BZ102	ZB4 BP4
	yellow	N.O.	XB4 BA51	ZB4 BZ101	ZB4 BA5	XB4 BP51	ZB4 BZ101	ZB4 BP5
	blue	N.O.	XB4 BA61	ZB4 BZ101	ZB4 BA6	XB4 BP61	ZB4 BZ101	ZB4 BP6
Type of push			Flush					
With international marking	Products		Complete	For user assembly				
Catalog number	green	N.O.	XB4 BA3311	ZB4 BZ101	ZB4 BA331			
	red	N.C.	XB4 BA4322	ZB4 BZ102	ZB4 BA432			
Type of push			Projecting			Mushroom head, 40 mm		
	Products		Complete	For user assembly		Complete	For user assembly	
Catalog number	black	N.O.	–	–	–	XB4 BC21	ZB4 BZ101	ZB4 BC2
	red	N.C.	XB4 BL42	ZB4 BZ102	ZB4 BL4	–	–	–
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.	XB4 BL845	ZB4 BZ105	ZB4 BL8434	XB4 BL945	ZB4 BZ105	ZB4 BL9434



40 mm mushroom head Emergency stop push buttons								
Type of push			Push-pull (N.C.)			Trigger action		
	Products		Complete	For user assembly		Complete	For user assembly	
Catalog number	red	N.C. or N.C. + N.O.	XB4 BT42	ZB4 BZ102	ZB4 BT4	XB4 BT845	ZB4 BZ105	ZB4 BT84
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.	XB4 BS542	ZB4 BZ102	ZB4 BS54	XB4 BS8445	ZB4 BZ105	ZB4 BS844
Type of push			Key release (N.C.)			Key release (N.C. + N.O.)		
Catalog number	red	N.C. or N.C. + N.O.	XB4 BS142	ZB4 BZ102	ZB4 BS14	XB4 BS9445	ZB4 BZ105	ZB4 BS944

Complete operators, selector switches



Selector switches and key switches

Type of head			Chromium plated circular bezel							
Degree of protection			IP 65 / NEMA & UL Type 4X, 13							
Mounting (mm)			panel cut-out		22.5 (22.3 ^{+0.4} ₀)					
			mounting centers		30 x 40					
Depth (mm)			below head		43					
Connection			Screw clamp terminals							
Type of operator			Handle							
Products			Complete		For user assembly		Complete		For user assembly	
Number and type of positions			2 positions maintained		2 positions maintained		2 positions spring return to left		2 positions spring return to left	
Catalog number			black N.O. XB4 BD21		black N.O. ZB4 BZ101 ZB4 BD2		black N.O. XB4 BD41		black N.O. ZB4 BZ101 ZB4 BD4	
Number and type of positions			3 positions maintained		3 positions maintained		3 positions spring return to center		3 positions spring return to center	
Catalog number			black N.O. + N.O. XB4 BD33		black N.O. + N.O. ZB4 BZ103 ZB4 BD3		black N.O. + N.O. XB4 BD53		black N.O. + N.O. ZB4 BZ103 ZB4 BD5	



Type of operator			Key, no. 455							
Products			Complete		For user assembly		Complete		For user assembly	
Number and type of positions (1)			2 positions maintained		2 positions maintained		2 positions maintained		2 positions maintained	
Catalog number			key N.O. XB4 BG21		key N.O. ZB4 BZ101 ZB4 BG2		key N.O. XB4 BG41		key N.O. ZB4 BZ101 ZB4 BG4	
Number and type of positions			2 positions spring return to left		2 positions spring return to left		3 positions maintained		3 positions maintained	
Catalog number			key N.O. XB4 BG61		key N.O. ZB4 BZ101 ZB4 BG6		- XB4 BG33		- ZB4 BZ103 ZB4 BG3	
			key N.O. + N.O. -		-		-		-	

Add-on contact blocks

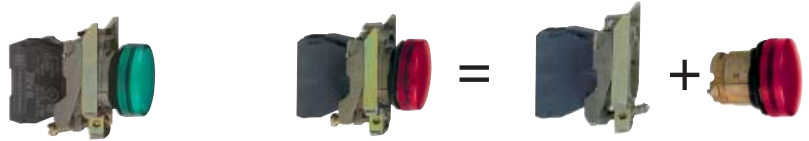


Electrical blocks

Single contact blocks			
Rated operational characteristics			AC-15, 240 V - 3 A, NEMA A600, Q600, 10 A AC continuous carrying
Positive operation of contacts conforming to IEC/EN 60947-5-1			All functions incorporating a N.C. contact are positive opening operation
Catalog number			N.O. ZBE 101
			N.C. ZBE 102

(1) The symbol indicates key withdrawal position.

Illuminated complete operators



Pilot lights							
Type of head			Circular bezel Smooth lens cap				
Degree of protection	IP 65 / NEMA & UL Type 4X, 13						
Mounting (mm)	panel cut-out	22.5 (22.3 ^{+0.4} ₀)					
	mounting centers	30 x 40					
Depth	below head	43					
Connection	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	XB4 BVB1	XB4 BVG1	XB4 BVM1	XB4 BV61	ZB4 BV6	ZB4 BV01
	green	XB4 BVB3	XB4 BVG3	XB4 BVM3	XB4 BV63	ZB4 BV6	ZB4 BV03
	red	XB4 BVB4	XB4 BVG4	XB4 BVM4	XB4 BV64	ZB4 BV6	ZB4 BV04
	yellow	XB4 BVB5	XB4 BVG5	XB4 BVM5	XB4 BV65	ZB4 BV6	ZB4 BV05
	blue	XB4 BVB6	XB4 BVG6	XB4 BVM6	XB4 BV66	ZB4 BV6	ZB4 BV06



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.	XB4 BW31B5	XB4 BW31G5	XB4 BW31M5	XB4 BW3165	ZB4 BW065	ZB4 BW31
	green	N.C. + N.O.	XB4 BW33B5	XB4 BW33G5	XB4 BW33M5	XB4 BW3365	ZB4 BW065	ZB4 BW33
	red	N.C. + N.O.	XB4 BW34B5	XB4 BW34G5	XB4 BW34M5	XB4 BW3465	ZB4 BW065	ZB4 BW34
	yellow	N.C. + N.O.	XB4 BW35B5	XB4 BW35G5	XB4 BW35M5	XB4 BW3565	ZB4 BW065	ZB4 BW35
	blue	N.C. + N.O.	XB4 BW36B5	XB4 BW36G5	XB4 BW36M5	XB4 BW3665	ZB4 BW065	ZB4 BW36



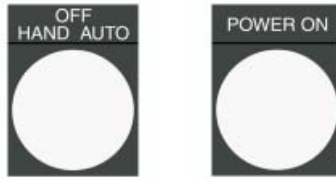
Illuminated selector switches							
Type	Illuminated selector switches (2 position maintained)						
Degree of protection	IP 65						
Light source	Integral LED						
	Products		Complete				
Supply voltage			24 Vac/dc	48–120 Vac	230–240 Vac		
Catalog number	green	N.C. + N.O.	XB4 BK123B5	XB4 BK123G5	XB4 BK123M5		
	red	N.C. + N.O.	XB4 BK124B5	XB4 BK124G5	XB4 BK124M5		
	yellow	N.C. + N.O.	XB4 BK125B5	XB4 BK125G5	XB4 BK125M5		

Separate components and legend plates 22 mm



Electrical blocks								
	Single contact blocks		Light blocks with integral LED				Light block, direct supply	
Rated operational characteristics	AC-15, 240 V - 3 A NEMA A600, Q600, 10 A		Consumption					
Positive operation of contacts conforming to IEC/EN 60947-5-1	N.C. contacts with positive opening operation		18 mA		24 Vac/dc			
			14 mA		120 Vac			
Catalog number	N.O. ZBE 101 N.C. ZBE 102		To combine with heads for integral LED				To combine with heads for BA 9s bulb (not included) 250 V max., 2.4 W max. ZBV 6 Color provided by lens	
			white	24 Vac/dc	48–120 Vac	230–240 Vac		
			green	ZBV B1	ZBV G1	ZBV M1		
			red	ZBV B4	ZBV G4	ZBV M4		
			yellow	ZBV B5	ZBV G5	ZBV M5		
			blue	ZBV B6	ZBV G6	ZBV M6		

OPERATOR INTERFACE



Accessories								
Legend holders, 30 x 40 mm, for 8 x 27 mm legends								
	With blank legend (for engraving)		With English language marked legend					
	Background		Black background/white text					
Catalog number	Black or red		CLOSE	ZBY2314	EMERGENCY STOP	ZBY2330	OFF	ZBY2312
	White or yellow		DOWN	ZBY2308	HAND-OFF-AUTO	ZBY2387	OFF-ON	ZBY2367
			ON	ZBY2311	OPEN	ZBY2313	POWER ON	ZBY2326
			RESET	ZBY2322	RUN	ZBY2334	START	ZBY2303
			STOP	ZBY2304	STOP-START	ZBY2366	UP	ZBY2307



Circular legend for mushroom head Emergency Stop push button				
	Yellow with black text		EMERGENCY STOP	
	Blank			
	60 mm	90 mm	60 mm	90 mm
Catalog number	ZBY9101	ZBY8101	ZBY9330	ZBY8330

Non-illuminated complete operators



Push buttons, spring return								
Type of head			Circular bezel					
Degree of protection			IP 65 / NEMA & UL Type 4X, 13 . (IP 66 for booted push buttons)					
Mounting (mm)			panel cut-out mounting centers			22.5 (22.3 ^{+0.4} ₀) 30 x 40		
Depth (mm)			below head			43		
Connection			Screw clamp terminals					
Type of push			Flush			Flush, booted		
Products			Complete			For user assembly		
Catalog number	black	N.O.	XB5 AA21	ZB5 AZ101	ZB5 AA2	XB5 AP21	ZB5 AZ101	ZB5 AP2
	green	N.O.	XB5 AA31	ZB5 AZ101	ZB5 AA3	XB5 AP31	ZB5 AZ101	ZB5 AP3
	red	N.C.	XB5 AA42	ZB5 AZ102	ZB5 AA4	XB5 AP42	ZB5 AZ102	ZB5 AP4
	yellow	N.O.	XB5 AA51	ZB5 AZ101	ZB5 AA5	XB5 AP51	ZB5 AZ101	ZB5 AP5
	blue	N.O.	XB5 AA61	ZB5 AZ101	ZB5 AA6	XB5 AP61	ZB5 AZ101	ZB5 AP6
Type of push			Flush					
With international marking			Complete			For user assembly		
Catalog number	green	N.O.	XB5 AA3311	ZB5 AZ101	ZB5 AA331			
	red	N.C.	XB5 AA4322	ZB5 AZ102	ZB5 AA432			
Type of push			Projecting			Mushroom head, 40 mm		
Products			Complete			Complete		
Catalog number	black	N.O.	–	–	–	XB5 AC21	ZB5 AZ101	ZB5 AC2
	red	N.C.	XB5 AL42	ZB5 AZ102	ZB5 AL4	–	–	–
Type of push			Double-headed push buttons			Double-headed push buttons, booted		
Degree of protection			IP 40			IP 66		
With international marking			Complete			Complete		
Catalog number	green / red	N.C. + N.O.	XB5 AL845	ZB5 AZ105	ZB5 AL8434	XB5 AL945	ZB5 AZ105	ZB5 AL9434
















40 mm mushroom head Emergency stop push buttons								
Type of push			Push-pull (N.C.)			Trigger action		
Unmarked			Complete			Push-pull (N.C. + N.O.)		
Products			Complete			Complete		
Catalog number	red	N.C. or N.C. + N.O.	XB5 AT42	ZB5 AZ102	ZB5 AT4	XB5 AT845	ZB5 AZ105	ZB5 AT84
	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.	XB5 AS542	ZB5 AZ102	ZB5 AS54	XB5 AS8445	ZB5 AZ105	ZB5 AS844
	Type of push			Key release (N.C.)			Key release (N.C. + N.O.)	
Catalog number	red	N.C. or N.C. + N.O.	XB5 AS142	ZB5 AZ102	ZB5 AS14	XB5 AS9445	ZB5 AZ105	ZB5 AS944













Complete operators, selector switches



Selector switches and key switches

Type of head		Circular bezel					
Degree of protection		IP 65 / NEMA & UL Type 4X, 13					
Mounting (mm)	panel cut-out mounting centers	22.5 (22.3 ^{+0.4}) 30 x 40					
Depth (mm)	below head	43					
Connection		Screw clamp terminals					
Type of operator		Handle					
	Products	Complete	For user assembly		Complete	For user assembly	
							
Number and type of positions		2 positions maintained 	2 positions maintained 		2 positions spring return to left 	2 positions spring return to left 	
Catalog number	black N.O.	XB5 AD21	ZB5 AZ101	ZB5 AD2	XB5 AD41	ZB5 AZ101	ZB5 AD4
Number and type of positions		3 positions maintained 	3 positions maintained 		3 positions spring return to center 	3 positions spring return to center 	
Catalog number	black N.O. + N.O.	XB5 AD33	ZB5 AZ103	ZB5 AD3	XB5 AD53	ZB5 AZ103	ZB5 AD5



Type of operator		Key, no. 455					
	Products	Complete	For user assembly		Complete	For user assembly	
							
Number and type of positions (1)		2 positions maintained 	2 positions maintained 		2 positions maintained 	2 positions maintained 	
Catalog number	key N.O.	XB5 AG21	ZB5 AZ101	ZB5 AG2	XB5 AG41	ZB5 AZ101	ZB5 AG4
Number and type of positions		2 positions spring return to left 	2 positions spring return to left 		3 positions maintained 	3 positions maintained 	
Catalog number	key N.O.	XB5 AG61	ZB5 AZ101	ZB5 AG6	–	–	–
	key N.O. + N.O.	–	–	–	XB5 AG33	ZB5 AZ103	ZB5 AG3

Add-on contact blocks






Electrical blocks

Single contact blocks	
Rated operational characteristics	AC-15, 240 V - 3 A, NEMA A600, Q600, 10 A AC continuous carrying
Positive operation of contacts conforming to IEC/EN 60947-5-1	All functions incorporating a N.C. contact are positive opening operation
Catalog number	N.O. ZBE 101 N.C. ZBE 102



(1) The symbol  indicates key withdrawal position.

Illuminated complete operators



Pilot lights							
Type of head		Circular bezel Smooth lens cap					
Degree of protection		IP 65 / NEMA & UL Type 4X, 13					
Mounting (mm)	panel cut-out mounting centers	22.5 (22.3 ^{+0.4}) 30 x 40					
Depth	below head	43					
Connection		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	XB5 AVB1	XB5 AVG1	XB5 AVM1	XB5 AV61	ZB5 AV6	ZB5 AV01
	green	XB5 AVB3	XB5 AVG3	XB5 AVM3	XB5 AV63	ZB5 AV6	ZB5 AV03
	red	XB5 AVB4	XB5 AVG4	XB5 AVM4	XB5 AV64	ZB5 AV6	ZB5 AV04
	yellow	XB5 AVB5	XB5 AVG5	XB5 AVM5	XB5 AV65	ZB5 AV6	ZB5 AV05
	blue	XB5 AVB6	XB5 AVG6	XB5 AVM6	XB5 AV66	ZB5 AV6	ZB5 AV06



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	48–20 Vac	230–240 Vac	250 V max., 2.4 W max.		
Catalog number	white N.C. + N.O.	XB5 AW31B5	XB5 AW31G5	XB5 AW31M5	XB5 AW3165	ZB5 AW065	ZB5 AW31
	green N.C. + N.O.	XB5 AW33B5	XB5 AW33G5	XB5 AW33M5	XB5 AW3365	ZB5 AW065	ZB5 AW33
	red N.C. + N.O.	XB5 AW34B5	XB5 AW34G5	XB5 AW34M5	XB5 AW3465	ZB5 AW065	ZB5 AW34
	yellow N.C. + N.O.	XB5 AW35B5	XB5 AW35G5	XB5 AW35M5	XB5 AW3565	ZB5 AW065	ZB5 AW35
	blue N.C. + N.O.	XB5 AW36B5	XB5 AW36G5	XB5 AW36M5	XB5 AW3665	ZB5 AW065	ZB5 AW36



Illuminated selector switches							
Type	(2 position maintained)						
Degree of protection	IP 65 / NEMA & UL Type 4X, 13						
Light source	Integral LED						
	Products	Complete					
Supply voltage		24 Vac/dc	48–120 Vac		230–240 Vac		
Catalog number	green N.C. + N.O.	XB5 AK123B5	XB5 AK123G5		XB5 AK123M5		
	red N.C. + N.O.	XB5 AK124B5	XB5 AK124G5		XB5 AK124M5		
	yellow N.C. + N.O.	XB5 AK125B5	XB5 AK125G5		XB5 AK125M5		



Complete stations with 1 push button

(light gray RAL 7035 base with dark gray RAL 7016 cover)

Degree of protection	IP 65 / NEMA & UL Type 4X and 13		
Dimensions (mm)	W x H x D 68 x 68 x 113 max. (with key release 40 mm mushroom head push button)		
	1 momentary push button		1 mushroom head push button 40 mm, momentary
Type of push	Flush black	Flush red	Red
Type of Contact	1 N.O.	1 N.C.	1 N.C.
Text on legend holder	Start	Stop	Emergency stop on red legend
Catalog number	XALD101	XALD111	XALD164



Complete stations

Emergency stop (light gray RAL 7035 base with yellow RAL 1012 cover)

1 mushroom head push button 40 mm, red	Turn-to-release		Key release (Key no. 455)		Push-pull
Type	Standard	Trigger action	Standard	Trigger action	Standard
Type of contact	1 N.C.	1 N.C.	1 N.C.	1 N.C.	1 N.C.
Catalog number	XALK174	XALK178	XALK184	XALK188	XALK194



Complete stations with 2 and 3 push buttons

(light gray RAL 7035 base with dark gray RAL 7016 cover)

Dimensions (mm)	W x H x D 2-way control stations: 68 x 106 x 62; 3-way control stations: 68 x 136 x 62				
	2 Function		3 Function		
	2 momentary push buttons		3 momentary push buttons		
Type of Push (Flush)	1 black/1 red	1 black/1 black	1 black/1 red/1 black		
Type of Contact	1 N.O./1 N.C.	2 N.O.	1 N.O./1 N.C./1 N.O.		
Text on legend	Start/Stop	Forward/Reverse	Open/Stop/Close	Forward/Stop/Reverse	Up/Stop/Down
Catalog Number	XALD211	XALD221	XALD341	XALD311	XALD321

Accessories	Standard contact blocks	
Description	N.O. contact	N.C. contact
Catalog number	ZEN L1111	ZEN L1121

9001K

SQUARE D

Control and signalling units 30 mm with metal ring nut

Non-illuminated complete operators



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			
Depth below head (mm)	1-7/32" (30.5 mm)			
Connection	Screw clamp terminals			
Catalog number	Universal 7 color—black, red, green, yellow, orange, blue & white	N.O. + N.C.	N.O.	
		9001KR1UH13	9001KR3UH13	9001KR2UH13
		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			
Depth below head (mm)	1-7/32" (30.5 mm)			
Connection	Screw clamp terminals			
Catalog number	N.O. + N.C.	N.O.		
	9001KR24RH13	9001KR25RH13	9001KR9R94H13	9001KR9R20H13
	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				
Depth below head (mm)	1-7/32" (30.5 mm)				
Connection	Screw clamp terminals				
Catalog number	N.O.	N.O. + N.C.			
	—	9001KS11FBH5	9001KS34FBH5	—	—
	9001KS53FBH1	—	—	9001KS43FBH1	9001KS11K1H1

(1) The symbol  indicates key withdrawal position.

Illuminated complete operators



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	1-7/32" (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
		24 Vac/dc	120 Vac/dc	Transformer type
				120 Vac
Catalog number	green	9001KP35LGG9	9001KP38LGG9	9001KP1G9
	red	9001KP35LRR9	9001KP38LRR9	9001KP1R9
	yellow	9001KP35LYA9	9001KP38LYA9	9001KP1A9

OPERATOR INTERFACE



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	1-7/32" (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
		24 Vac/dc	120 Vac/dc	Transformer type
				120 Vac
Catalog number	green	N.O. + N.C.	9001K3L35LGGH13	9001K3L38LGGH13
	red	N.O. + N.C.	9001K3L35LRRH13	9001K3L38LRRH13
	yellow	N.O. + N.C.	9001K3L35LYAH13	9001K3L38LYAH13



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	1-7/32" (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
		24 Vac/dc	120 Vac/dc	Transformer type
				120 Vac
Type of head		2 position, push-pull		
Catalog number	red	N.O. + N.C.	9001KR9P35LRRH13	9001KR9P38LRRH13
Type of head		3 position, push-pull (pull: spring return, center: maintained, push: spring return)		
Catalog number	red	N.O. + N.C. late break	9001KR8P35LRRH25	9001KR8P38LRRH25

Control and signalling units 30 mm with plastic ring nut

Complete operators and pilot lights



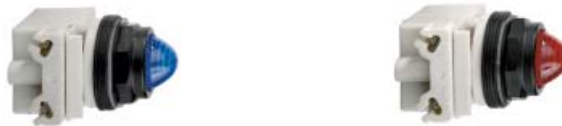
Push buttons, spring return

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		1-7/32" (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	2 - maintained	2 - spring return	3 - maintained	
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		1-7/32" (30.5 mm)				
Depth below head (mm)		42				
Connection		Screw clamp terminals				
Catalog number		N.O.	–	9001SKS11FBH5	9001SKS34FBH5	–
		N.O. + N.C.	9001SKS53FBH1	–	–	9001SKS43FBH1



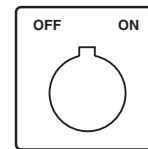
Pilot lights

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		1-7/32" (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
	yellow	9001SKP35LYA9	9001SKP38LYA9	9001SKP1A9



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	Blanking plug Chrome plated for 30 mm knockout	Emergency stop round yellow legend	
Catalog number	9001K95	9001K52	60 mm 9001KN9330	90 mm 9001KN8330



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"		1	68 x 68 x 53	XALD01
Dark gray lid "RAL 7016"		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"		1	68 x 68 x 53	XALK01
Yellow lid "RAL 1012"				

(1) For customer assembly using XB5 operators, 22 mm starting on page 4-10.



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

Empty enclosures (2)		IP65 / NEMA & UL Type 4, 13		
Mounting		1.58 in (40 mm) centerline spacing of holes		
Type	Usable Depth	Dimensions (H x W)	# of 22 mm knock-outs	Catalog number
Die Cast	1.93 in (49 mm)	80 x 80	1	XAPG19201
Zinc		130 x 80	2	XAPG29202
Gray RAL 7032		175 x 80	3	XAPG39203
Aluminum	2.93 (74.5 mm)	80 x 80	1	XAPG19501
		130 x 80	2	XAPG29502
		175 x 80	3	XAPG39503
		220 x 80	4	XAPG49504
		310 x 85	5	XAPG59505

(2) For customer assembly using XB4 operators, 22 mm starting on page 4-6.



SQUARE D

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

Type	Number of 30 mm cut-outs	NEMA ratings	Catalog number
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, 13	9001KYSS1
	2	1, 3, 4, 4X, 13	9001KYSS2
	3	1, 3, 4, 4X, 13	9001KYSS3

(3) For customer assembly using Type K and SK devices, 30 mm starting on page 4-14.


XVL Type O

Compact pilot lights 8, 12 and 17.5 mm

(1):

Voltage	Number (●)
5 Vdc (25 mA)	1
12 Vdc (18 mA)	2
24 Vdc (18 mA)	3



LED pilot lights		With black bezel	With integral lens cap	
Type of head		Protruding 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	12.2 mm
	mounting centers	12.5 x 12.5 mm	10.5 x 10.5 mm	16.5 x 16.5 mm
Dimensions (mm)	Depth (below head)	32	34	45
Connection		Tags 2.8 x 0.5	Tags 2.8 x 0.5	Screw clamp connectors
Catalog number (1)	green	XVL A1●3 (1)	XVL A2●3 (1)	XVL A3●3 (1)
	red	XVL A1●4 (1)	XVL A2●4 (1)	XVL A3●4 (1)
	yellow	XVL A1●5 (1)	XVL A2●5 (1)	XVL A3●5 (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 ● with the number 1, 2, 3 or 4 indicating the required voltage. See voltage table above.

OPERATOR
INTERFACE



SQUARE D

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	12 Vac/dc 170 mA	Color	Catalog Number
		Red	9001OR12
Green		9001OG12	
Amber		9001OA12	
Clear		9001OC12	
Yellow		9001OY12	
White		9001OW12	
Blue (Fluted)		9001FB12	
24 Vac/dc 73 mA		Red	9001OR24
		Green	9001OG24
		Amber	9001OA24
		Clear	9001OC24
	Yellow	9001OY24	
	White	9001OW24	
120 Vac/dc 25 mA	Blue (Fluted)	9001FB24	
	Red	9001OR120	
	Green	9001OG120	
	Amber	9001OA120	
	Clear	9001OC120	
	Yellow	9001OY120	
White	9001OW120		
Blue (Fluted)	9001FB120		



Illuminated beacons XVB L, 70 mm		Steady incandescent Steady or flashing LED	Flashing light signalling	
Light source		Incandescent BA 15d bulb, 10 W max. LED BA 15d (not included)	BA 15d Incandescent (not included)	"Flash" strobe unit 10 Joule
Degree of protection		IP 65 / NEMA Type 4X (indoor)		
Rated insulation voltage		250 V		
Beacon catalog number (1)	12–230 Vac/dc	XVB L3●	–	–
	24 Vac/dc	–	XVB L4B●	XVB L8B●
	120 Vac	–	XVB L4M●	XVB L8G●
	230 Vac	–	XVB L4M●	XVB L8M●



Indicator banks XVB C, 70 mm 2 to 5 units (3)		Base units	Steady incandescent Steady or flashing LED	Flashing light signalling		Audible units (90 db at 1 m)
Light source		–	Incandescent BA 15d bulb, 10 W max. LED BA 15d (not included)	BA 15d Incandescent (not included)	"Flash" strobe unit, 10 Joule	–
Degree of protection		IP 65 / NEMA Type 4X (indoor)				
Rated insulation voltage		250 V				
Base unit catalog number	with cover	XVB C21	–	–	–	–
Lens unit catalog number (1)	12– 230 Vac/dc	–	XVB C3●	–	–	–
	24 Vac/dc	–	–	XVB C4B●	XVB C8B●	–
	120 Vac	–	–	XVB C4M●	XVB C8G●	–
	230 Vac	–	–	XVB C4M●	XVB C8M●	–
Audible unit catalog number	12 to 48 Vac/dc	–	–	–	–	XVB C9B
	unidirectional 120 to 230 Vac	–	–	–	–	XVB C9M

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

Accessories

Bulbs and LEDs		Indicator banks XVB			
Light source		Incandescent bulb, BA 15d base fitting	Incandescent bulb, BA 15d base fitting	LED, BA 15d base fitting	Flashing LED, BA 15d base fitting
Catalog number (1)	12 V	DL1 BEJ (7 W)	DL1 BLJ (10 W)	–	–
	24 V	DL1 BEB (6.5 W)	DL1 BLB (10 W)	DL1 BDB●	DL1 BKB●
	120 V	DL1 BEG (7 W)	DL1 BLG (10 W)	DL1 BDG●	DL1 BKG●
	230 V	DL1 BEM (7 W)	DL1 BLM (10 W)	DL1 BDM●	DL1 BKM●

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

Mounting accessories		For beacons and indicator banks type XVB		
Length		100 mm	400 mm	800 mm
Black aluminum support tube		XVB C02	XVB C03	XVB C04
Black mounting plates	mounting tulip for use w/support tube	XVB C11		
	right angle mounting bracket	XVB C12		
	1/2" NPT conduit adapter	XVBC00		



Miniature illuminated beacons XVD LS 45 mm		Steady incandescent Steady or flashing LED	"Flash" signalling
Light source		Incandescent BA 15d bulb, 5 W max. LED BA 15d (not included)	"Flash" strobe unit, 0.5 J
Degree of protection		IP 40	
Rated insulation voltage		250 V	
Beacon catalog number (1)	24–230 Vac/dc	XVD LS3●	–
	24 Vac/dc	–	XVD LS6B●
	120 Vac	–	XVD LS6G●
	230 Vac	–	XVD LS6M●

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



Indicator banks XVP, 50 mm 1 to 5 units (2), black clamping ring (3)		Base unit	Steady or flashing light signalling	"Flash" signalling		Audible units (55–85 dB at 1 m)
Light source		–	Incandescent, LED BA 15d bulb, 7 W max. (not included)	"Flash" strobe unit, 0.3 Joule	"Flash" strobe unit, 0.6 Joule	–
Degree of protection		IP 65 / NEMA & UL Type 1, 12, 13				
Rated insulation voltage		250 V				
Base unit		with cover	XVP C21	–	–	–
Catalog number (1)	250 V max.	–	XVP C3●	–	–	–
	24 Vdc	–	–	XVP C6B●	–	XVP C09B
	120 Vac	–	–	–	XVP C6G●	XVP C09G
	230 Vac	–	–	–	XVP C6M●	XVP C09M

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

(2) An indicator bank comprises: 1 base unit + 1 to 5 illuminated units or 1 audible unit max.

(3) To order products with an **off-white ring**, add the letter **W** to the end of the catalog number (example: base unit + green lens unit: XVP C21W + XVP C33W, etc.).

Accessories

Bulbs and LEDs		Indicator banks			Beacons
		XVP	XVP or XVDLS		XVD LS
Light source		Incandescent bulb, BA 15d base fitting	LED, BA 15d base fitting	Flashing LED, BA 15d base fitting	Incandescent bulb, BA 15d base fitting
Catalog number (1)	12 V	DL1 BEJ (7 W)	–	–	–
	24 V	DL1 BEB (6.5 W)	DL1 BDB●	DL1 BKB●	DL1 BEBS (4 W)
	120 V	DL1 BEG (7 W)	DL1 BDG●	DL1 BKG●	DL1 BEGS (5 W)
	230 V	DL1 BEM (7 W)	DL1 BDM●	DL1 BKM●	DL1 BEMS (5 W)

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

Mounting accessories		For beacons and indicator banks type XVP		
Length		112 mm	260 mm	410 mm
Chrome plated support tube (4)		XVP C02	XVP C03	XVP C04
Black mounting plate (4) right angle		XVP C12		



(4) Aluminum support tube with tulip mounting base. To order an off-white XVP unit, add the letter **W** to the end of the catalog number (example: XVP C03W).

Pendant control stations for control circuits

Ready to use





Type XAC A "Pistol grip"

Degree of protection	IP 65 / NEMA & UL Type 4, 4X		
Rated operational characteristics	AC 15 (240 V 3 A), DC 13, NEMA A600/Q600		
Conventional thermal current	10 A		
Connection	Screw clamp terminals		
For control of	single-speed motors 	2-speed motors 	
Dimensions (mm)	W x H x D	52 x 295 x 71	52 x 295 x 71
Number of operators	mechanically interlocked	2	2
Catalog number		XAC A201	XAC A207



SQUARE D

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 motors 	
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	-
	START-STOP (1)	9001BW76Y	-

(1) Maintained contact.

Type BW pendant station accessories

Hanger bracket and sealing kit	9001B350
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Stations for user assembly



Empty enclosures type XAC A

Number of holes	2	3	4	5	6	8	12
Catalog number	XAC A02	XAC A03	XAC A04	XAC A05	XAC A06	XAC A08	XAC A12

Separate components (for mounting in enclosures XAC A)

Contact blocks	
Single-speed N.O.	ZB2 BE101
Single-speed N.C.	ZB2 BE102

Contacts blocks for XAC A941●	
Single-speed N.C. + N.O. + N.O. (1)	XEN G1●91
2-speed N.C. + N.O. + N.O. (2)	XEN G1191
(1) simultaneous (2) staggered	

Interlock	
For use with XACA941●	XACA009
for mechanical interlock between opposing functions	

Contact blocks (for mounting in enclosure base)	
N.O.	XAC S101
N.C. + N.O.	XAC S105

Booted operators	
white	XAC A941●
black	XAC A9412

Mushroom head, latching	
turn to release	30 mm ZA2 BS44
	40 mm ZA2 BS54

Mushroom head, latching, trigger action	
turn to release	30 mm ZA2 BS834
	40 mm ZA2 BS844

Mushroom head, latching	
key release	30 mm ZA2 BS74
	40 mm ZA2 BS14

Selector switch	
2 pos. maintained	ZA2 BD2
3 pos. maintained	ZA2 BD3

Key switch	
key no. 455	2 pos. maintained ZA2 BG4
	3 pos. maintained ZA2 BG5

Blanking plug	
with seal and mounting nut	ZB2 SZ3

Pilot light heads	
white	ZA2 BV01
green	ZA2 BV03
red	ZA2 BV04
yellow	ZA2 BV05

Pilot light bodies 250 V max.	
direct supply	ZB2 BV006
direct supply, through resistor	ZB2 BV007

Protective guard (for base mounted units)	
For selector switch or mushroom head push button	XAC A982

OPERATOR INTERFACE

Legends, 30 x 40 mm	With symbols conforming to NF E 52-124							With text	
Catalog number	ZB2 BY4901	ZB2 BY4903	ZB2 BY4907	ZB2 BY4909	ZB2 BY4913	ZB2 BY4915	ZB2 BY4930	ZB2 BY2303	ZB2 BY2304
								blank	
Catalog number	ZB2 BY2904	ZB2 BY2906	ZB2 BY2910	ZB2 BY2912	ZB2 BY2916	ZB2 BY2918	ZB2 BY2931	white or yellow background	ZB2 BY4101

Type SKYP



Heavy duty pendant control stations Stations for user assembly



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

OPERATOR
INTERFACE



Push button units—2button

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 SKRU5	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	

Type B Type KY/SKY

Control stations Standard and heavy duty



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	–

OPERATOR
INTERFACE



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, 3 & 13	Polymeric Type SK Operators NEMA & UL Type 4x & 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

The essential guide to Machine Sensing solutions

A selection of the **top selling sensor products** for simplicity in selection.



Welcome to the **Simply Smart*** world, compliments of Telemecanique

OEMs

with **Osiconcept**
Improve performance by making your machines less complicated and more **intelligent**.

Distributors

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

Users

with **Osiconcept**
Improve performance by reducing maintenance time with products that are **simpler** and unequalled in **flexibility**.

* **Simply Smart** : using ingenuity and intelligence to continually improve ease of use.

Select from Telemecanique's major innovations:

Osiconcept

Offering **simplicity** through **innovation**

A worldwide detection first for improving productivity.
A complete offer for resolving your most commonly encountered detection problems:

- product selection simplified
- product availability simplified
- installation and setting-up simplified
- maintenance simplified
- detection simplified using a single supplier.

Improved simplicity for improved productivity.

Select the sensor according to your specific requirements

Osiconcept series:

Multi-purpose products providing multiple functions. This series also includes **Osiconcept** products.

Osi-Standard series:

Designed for essential and repetitive functions.

Application-specific series:

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

Osiconcept A complete range of innovative and simple to use sensors

Osiris Photo-electric sensors

Page 5-2



> A single product that automatically adapts to all modes of sensing

Detects any target regardless of material or shape

- Detection from a few millimeters to several tens of meters
- Accessories
- Products for specific applications

A simple press of the teach button automatically configures the sensor for optimal performance in any condition.

Osiprox Inductive proximity sensors

Page 5-12



> A single product that automatically adapts to all mounting environments

Detection of metal objects—in or out of metal surroundings

- Sensing distance/object ≤ 60 mm
- Cylindrical and rectangular body styles
- Specific products for particular applications

A simple press of the teach button automatically configures the sensor for optimal performance whether mounted in or out of metal.

Osiswitch Limit switches

Page 5-22



> More than 5,000 interchangeable configurations within 24 hours

Detection by contact with rigid objects

- N.C. contacts with positive opening operation
- Object speed ≤ 1.5 m/s
- Specific products for particular applications

One type of metal operating head for 5 different bodies. Modularity also in connections and contacts.

Nautilus Sensors for pressure control

Page 5-27



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

Detection by contact with fluid

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

Ergonomic, tactile feedback keys plus scrolling menu on large 4 digit display.

Osiprox (other technologies)

Page 5-20

> Capacitive proximity sensors

Detection of any object or material

- Sensing distance/object ≤ 20 mm

> Ultrasonic proximity sensors

Detection using sound waves

- Sensing distance/object ≤ 1 m

9007C Limit switches

Page 5-32

Osiconcept
Offering simplicity through Innovation

A single product that automatically adapts to all environments.

Programmable N.O. / N.C.
N.O.: object present = output ON
N.C.: no object present = output ON



XUB



XUB

	18mm tubular plastic	18mm tubular metal	
Max / usable sensing distance	diffuse	30 cm / 11.8 in.	30 cm / 11.8 in.
	diffuse, with background supp.	12 cm / 4.7 in.	12 cm / 4.7 in.
	polarized retro	2 m / 6.5 ft.	2 m / 6.5 ft.
	thru-beam ▲	15 m / 49.2 ft.	15 m / 49.2 ft.
Mounting (mm)		M18 x 1 M18 x 1	
Enclosure M (metal) P (plastic) / Dimensions (mm) Ø x L or W x H x L	P / M18 x 64	M / M18 x 64	
Common characteristics	Adjustment of sensing distance: teach mode / Alignment LEDs: yes /		

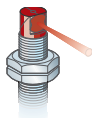
Sensors for dc applications \square (solid-state output: transistor)

Connection: pre-cabled, PvR (2 m)			
T / R 3-wire	PNP programmable N.O. / N.C.	XUB0APSNL2	XUB0BPSNL2
	NPN programmable N.O. / N.C.	XUB0ANSNL2	XUB0BNSNL2
	PNP / NPN programmable N.O. / N.C.	-	-
Connection: M12 connector (M8 for XUM)			
T / R 3-wire	PNP programmable N.O. / N.C.	XUB0APSNM12	XUB0BPSNM12
	NPN programmable N.O. / N.C.	XUB0ANSNM12	XUB0BNSNM12
	PNP / NPN programmable N.O. / N.C.	-	-
Snap-C [®] compatible on M12 only			
Connection: screw clamp terminals			
T / R 3-wire	PNP / NPN programmable N.O. / N.C.	-	-
Switching capacity (mA) main output / alarm output		100 / -	100 / -
Common characteristics	Supply voltage limits, min/max (V) including ripple: 10 to 36		
Thru-beam accessory	pre-cabled (2 m)	XUB0AKSNL2T	XUB0BKSNL2T
	connector	XUB0AKSNM12T	XUB0BKSNM12T
	screw terminals, M12 cable gland	-	-

Sensors for ac or dc applications \sim / \square 10 to 36 Vdc / 20 to 264 Vac including ripple on dc

Connection: pre-cabled, PvR (2 m)			
T / R	programmable N.O. / N.C. with time delay	-	-
Connection: screw clamp terminals			
T / R	programmable N.O. / N.C. with time delay	-	-
LED output state indicator / power on LED		-	-
Switching frequency (Hz)		-	-
Time delay(s)		-	-
Thru-beam accessory	pre-cabled, PvR (2 m)	-	-
	screw terminals, M12 cable gland	-	-

Also available in an 18mm, 2-wire ac/dc classic version. Please see the Sensors Specification Guide 9006CT0101.



90° head

All the above Osiris 18mm sensors are available with an integral 90° head. Replace the "N" with a "W".

Example: For pre-cabled versions: XUB0APSNL2 becomes XUB0APSWL2.
For connector versions: XUB0APSNM12 becomes XUB0APSWM12.

Accessories (sold separately)

Reflectors		3D mountings with ball joint	
	XUZC24		Bracket with ball joint for sensors and reflector XUZC50
	XUZC80		for XUB... XUZB2003 XUM... XUZM2003 XUK... XUZK2003 XUX... XUZX2003
	XUZC50		Protective housing with ball joint for XUM... XUZM2004 XUK... XUZK2004 XUX... XUZX2004
			M12 rod for ball joint XUZ2001

▲ Transmitter and receiver sold separately



XUM



XUK



XUX

Miniature rectangular	Compact rectangular 50 x 50	Compact rectangular
40 cm / 1.3 ft.	1 m / 3.28 ft.	2 m / 6.5 ft.
10 cm / 4 in.	30 cm / 11.8 in.	1.3 m / 4.2 ft.
3 m / 9.8 ft.	4 m / 13 ft.	11 m / 36 ft.
14 m / 45.8 ft.	30 m / 98.2 ft.	40 m / 131 ft.
direct: (mounting holes 25.5), M3 screws	direct: (mounting holes 40 x 40), M4 screws	direct: (mounting holes 30 / 38 to 40 / 50 / 74), M5 screws
P / 12 x 34 x 20	P / 18 x 50 x 50	P / 30 x 92 x 71
Temperature range: - 25 to + 55 °C (-13 to +131 °F) / Degree of protection (conforming to IEC 60529): IP67 (XUK: IP65)		

XUM0APSAL2	–	–
XUM0ANSAL2	–	–
–	XUK0AKSAL2	–
XUM0APSAM8 (1)	–	–
XUM0ANSAM8 (1)	–	–
–	XUK0AKSAM12	XUX0AKSAM12
–	–	XUX0AKSAT16
100 / 50	100 / 50	100 / 100
Switching frequency (Hz): 250 / Overload and short-circuit protection: yes / LED output state indicator: yes / power on LED: yes		
XUM0AKSAL2T	XUK0AKSAL2T	–
XUM0AKSAM8T (1)	XUK0AKSAM12T	XUX0AKSAM12T
–	–	XUX0AKSAT16T

relay output, 3 A

(1) M8 not Snap-C® compatible.

–	XUK0ARCTL2	–
–	–	XUX0ARCTT16
–	yes / yes	yes / yes
–	20	20
–	Adjustment from 0 to 15 s, on energization, on de-energization or monostable	–
–	XUK0ARCTL2T	–
–	–	XUX0ARCTT16T



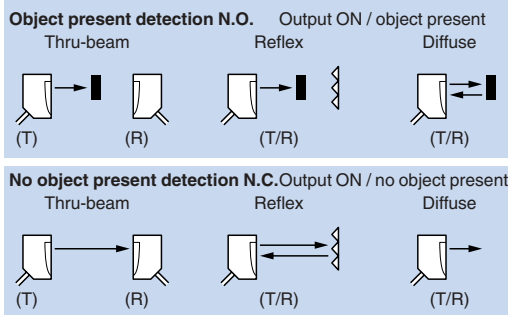
Connector innovation

New, innovative connector that is universal, simple and fast.
 For all Telemecanique brand sensors with Snap-C compatible M12 connectors (pointed pins):
 – cabling to the required length without using a screwdriver or a soldering iron,
 – ready in just a few seconds, no wire stripping required.



Mounting brackets			
Single bracket			
Mounting support for M12 rod XUZ2003	 for standard	 with ball joint	
	XUB...	XUZA118 (stnls. steel)	XUZA218 (plastic)
	XUM...	XUZA50	–
	XUK...	XUZA51	–
	XUX...	XUZX2000	–

Plug-in female connectors, including pre-wired versions						
length 2 m w/o LED	90°		straight		Snap-C	
M8	XSZCS111	XSZCS101	–	–	–	
M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V	–	–	
U20	XSZCK111Y	XSZCK101Y	–	–	–	



	18mm tubular plastic	18mm tubular metal	Miniature rectangular
Max / usable sensing distance			
Diffuse	60 cm / 2 ft.	60 cm / 2 ft.	40 cm / 1.3 ft.
Polarized retro	2 m / 6.5 ft.	2 m / 6.5 ft.	2 m / 6.5 ft.
Retro	4 m / 13 ft.	4 m / 13 ft.	4 m / 13 ft.
Thru-beam ▲	15 m / 49 ft.	15 m / 49 ft.	8 m / 26 ft.
Mounting (mm)	M18 x 1	M18 x 1	direct: (mting holes 25.5), M3 screws
Enclosure M (metal) P (plastic) / Dim. (mm) Ø x L or W x H x L	P / M18 x 46	M / M18 x 46	P / 12 x 34 x 27
Alignment LEDs	-	-	yes
Common characteristics	Temperature range: - 25 to + 55 °C (-13 to +131 °F) / Degree of protection (conforming to IEC 60529): IP67 (XUK: IP65)		

Sensors for dc applications \square (solid-state output: transistor)

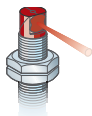
Connection	2 m cable	M12 connector	2 m cable	M12 connector	2 m cable	M8 connector		
Transmitter	XUB2AKSNL2T	XUB2AKSNM12T	XUB2BKSNL2T	XUB2BKSNM12T	XUM2AKSNL2T	XUM2AKSNM8T		
Receiver or T/R, 3-wire PNP (1)	Diffuse, adjustable	N.O.	XUB5APANL2	XUB5APANM12	XUB5BPANL2	XUB5BPANM12	XUM5APANL2	XUM5APANM8
			N.C.	XUB5APBNL2	XUB5APBNM12	XUB5BPBNL2	XUB5BPBNM12	XUM5APBNL2
	Polarized retro	N.O.	XUB9APANL2	XUB9APANM12	XUB9BPANL2	XUB9BPANM12	XUM9APANL2	XUM9APANM8
			N.C.	XUB9APBNL2	XUB9APBNM12	XUB9BPBNL2	XUB9BPBNM12	XUM9APBNL2
	Retro	N.O.	XUB1APANL2	XUB1APANM12	XUB1BPANL2	XUB1BPANM12	XUM1APANL2	XUM1APANM8
			N.C.	XUB1APBNL2	XUB1APBNM12	XUB1BPBNL2	XUB1BPBNM12	XUM1APBNL2
	Thru-beam	N.O.	XUB2APANL2R	XUB2APANM12R	XUB2BPANL2R	XUB2BPANM12R	XUM2APANL2R	XUM2APANM8R
			N.C.	XUB2APBNL2R	XUB2APBNM12R	XUB2BPBNL2R	XUB2BPBNM12R	XUM2APBNL2R
Supply voltage limits, min/max (V) including ripple	10-36	10-36	10-36	10-36	10-30	10-30		
Switching frequency (Hz)	500	500	500	500	500	500		
Common characteristics for dc versions	Switching capacity, max (mA): 100 / Overload and short-circuit protection: yes /							

(1) For versions with NPN output, replace "P" with an "N". Example: XUB1APANL2 becomes XUB1ANANL2.

Sensors for ac or dc applications \sim / \square 10 to 36 Vdc / 20 to 264 Vac including ripple on dc

relay output, 3A

Connection	-	-	-	-	-	-
Transmitter	-	-	-	-	-	-
Receiver or T/R	Diffuse	N.O. + N.C.	-	-	-	-
			Polarized retro	N.O. + N.C.	-	-
	Retro	N.O. + N.C.	-	-	-	-
	Thru-beam	N.O. + N.C.	-	-	-	-
Switching frequency (Hz)	-	-	-	-	-	-
LED output state indicator / power on LED	-	-	-	-	-	-



90° head

All the above Osiris 18mm sensors are available with an integral 90° head.

Replace the "N" with a "W".

Example: For pre-cabled versions: XUB0APSNL2 becomes XUB0APSWL2.

For connector versions: XUB0APSNM12 becomes XUB0APSWM12.

Accessories (sold separately)

Reflectors		3D mountings with ball joint	
XUZC24	XUZC80	XUZC50	

3D mountings with ball joint		Protective housing with ball joint		M12 rod for ball joint	
Bracket with ball joint for sensors and reflector XUZC50	for XUM...	XUZB2003	XUZM2003	XUZK2003	XUZM2004
	for XUK...	XUZK2003	XUZK2004	XUZK2003	XUZK2004
	for XUX...	XUZK2003	XUZK2004		XUZK2004
					XUZ2001

▲ Transmitter and receiver sold separately

www.telemecanique.com



XUC



XUK



XUX

Compact rectangular	Subcompact rectangular 50 x 50		Compact rectangular
	dc	ac	
1.2 m / 3.9 ft. (adjustable)	1 m / 3.28 ft.	1 m / 3.28 ft.	2.1 m / 6.8 ft.
9 m / 29 ft.	5 m / 16 ft.	4 m / 13 ft.	11 m / 36.1 ft.
—	9 m / 29 ft.	7 m / 23 ft.	14 m / 46 ft.
60 m / 196 ft.	30 m / 98 ft.	20 m / 65 ft.	40 m / 131 ft.
direct: (mounting holes 30 / 38 / 40 / 50 / 74), M5 screws	direct: (mounting holes 40 x 40), M4 screws		direct: (mounting holes 30 / 38 to 40 / 50 / 74), M5 screws
P / 95 x 45 x 44	P / 18 x 50 x 50		P / 30 x 92 x 71
yes	yes		yes
/ LED output state indicator and power on LED: yes			

2 m cable	M12 connector	2 m cable	M12 connector	screw terms, M12 gland	M12 connector
—	—	XUK2AKSNL2T	XUK2AKSNM12T	XUX0AKSAT16T	XUX0AKSAM12T
XUC8AKSNL2	XUC8AKSAM12	XUK5APANL2	XUK5APANM12	XUX5APANT16	XUX5APANM12
XUC8AKSNL2	XUC8AKSAM12	XUK5APBNL2	XUK5APBNM12	XUX5APBNT16	XUX5APBNM12
XUC9AKSAL2	XUC9AKSAM12	XUK9APANL2	XUK9APANM12	XUX9APANT16	XUX9APANM12
XUC9AKSAL2	XUC9AKSAM12	XUK9APBNL2	XUK9APBNM12	XUX9APBNT16	XUX9APBNM12
—	—	XUK1APANL2	XUK1APANM12	XUX1APANT16	XUX1APANM12
—	—	XUK1APBNL2	XUK1APBNM12	XUX1APBNT16	XUX1APBNM12
XUC2AKSAL2	XUCZAKSAM12	XUK2APANL2R	XUK2APANM12R	XUX2APANT16R	XUX2APANM12R
XUC2AKSAL2	XUCZAKSAM12	XUK2APBNL2R	XUK2APBNM12R	XUX2APBNT16R	XUX2APBNM12R
10–38	10–38	10–30	10–30	10–36	10–36
500	500	500	500	500	500
LED output state indicator : yes / power on LED: yes					

—	—	pre-cabled, L = 2 m	—	screw terms, ISO16 cbl. gland	—
—	—	XUK2ARCNL2T	—	XUX0ARCTT16T	—
XUC8ARCTL2	XUC8ARCTU78	XUK5ARCNL2	—	XUX5ARCNT16	—
XUC9ARCTL2	XUC9ARCTU78	XUK9ARCNL2	—	XUX9ARCNT16	—
—	—	XUK1ARCNL2	—	XUX1ARCNT16	—
XUC2ARCTL2	XUCZARCTU78	XUK2ARCNL2R	—	XUX2ARCNT16R	—
20	—	20	—	20	—
yes / yes	—	yes / yes	—	yes / yes	—



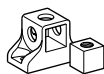
Connector innovation

New, innovative connector that is universal, simple and fast.
 For all Telemecanique brand sensors with Snap-C compatible M12 connectors (pointed pins):
 – cabling to the required length without using a screwdriver or a soldering iron,
 – ready in just a few seconds, no wire stripping required.



Mounting brackets

Mounting support for M12 rod



XUZ2003

Single bracket

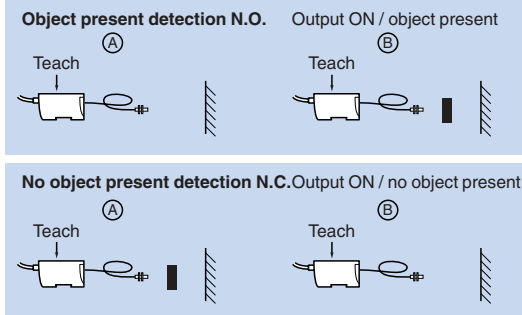


for	standard	with ball joint
XUB...	XUZA118 (stnls. steel)	XUZA218 (plastic)
XUM...	XUZA50	—
XUK...	XUZA51	—
XUX...	XUZX2000	—

Plug-in female connectors, including pre-wired versions

length 2 m w/o LED	90°	straight	Snap-C
M8	XSZCS111	XSZCS101	—
M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V
U20	XSZCK111Y	XSZCK101Y	—

Fiber optics Amplifier



(1) Models suitable for use with XUFZ01 and XUFZ02

	Standard	Multi-Modes
System	For plastic cables	
Max / usable sensing distance	See cables	
Mounting (mm)	DIN rail or direct on 25mm mounting holes, M3 screws	
Dimensions (mm) H x W x L	40 x 10 x 65	
Case: P (plastic)	P	
Sensitivity adjustment	via teach mode	
Alignment LEDs	yes	yes and 4-digit display
Temperature range °C (°F)	- 10 to + 55 (- 14 to + 131)	- 10 to + 55 (- 14 to + 131)
Degree of protection (conforming to IEC 60529)	IP65 with 1mm Ø cable / IP64 with 0.5mm Ø cable	

System
Sensing distance (mm)
Cable cross-section
Cable Ø (mm)
Sheath Ø
Temperature range °C (°F)
References
Mounting
(2) With XUF-Z04 mounting bracket with lens.
(3) Depending on length and lens mounting brackets.

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

Connection: pre-cabled, PVC (2 m)			
Amplifier	3-wire PNP programmable N.O. / N.C.	XUDA1PSML2	XUDA2PSML2
references	3-wire NPN programmable N.O. / N.C.	XUDA1NSML2	XUDA2NSML2
Connection: M8 connector			
Amplifier	3-wire PNP programmable N.O. / N.C.	XUDA1PSMM8	XUDA2PSMM8
references	3-wire NPN programmable N.O. / N.C.	XUDA1NSMM8	XUDA2NSMM8
Supply voltage limits, min/max (V) including ripple	10 to 30		
Switching capacity (mA) main output	100		
Alarm output (switching capacity, mA)	-		
Overload and short-circuit protection	yes	yes	50
LED output state indicator	yes	yes	
Switching frequency (Hz)	1000	1000 (standard mode)	5000 (fast mode). Sensing distance reduced by half
Programmable timer	-	40 ms on beam break	

(1) Models suitable for use with XUFZ01 and XUFZ02

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

Accessories

Pre-wired plug-in female connectors suitable for use with amplifier XUD-●●●M8



Fig. 1



Fig. 2

length 5 m	
90°, without LED, fig. 1	XSZCS152
Straight, without LED, fig. 2	XSZCS142

For thru-beam system plastic fiber optics

Lenses	For increasing sensing distance (pair)	XUFZ01
	With 90° mirror (pair)	XUFZ02
Mounting brackets with lens (set of 2)	Front screw mounting for fiber optics XUF-Z920	XUFZ04

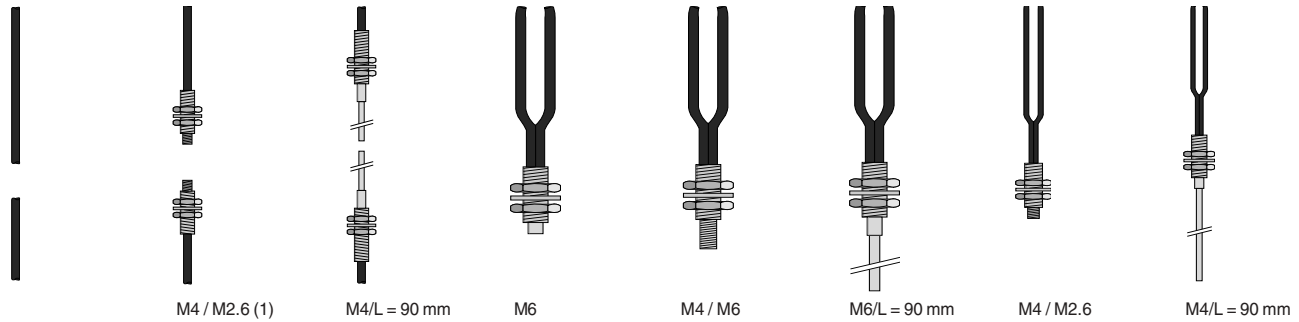
For all fiber optic cables (all systems)

Cable trimmer	For trimming cable to length (included with all plastic cables)	XUFZ11
Protective sheath, metallic	Length 1 m, for plastic cables with threaded tips	
	For M4 thread	XUFZ210
	For M6 thread	XUFZ310

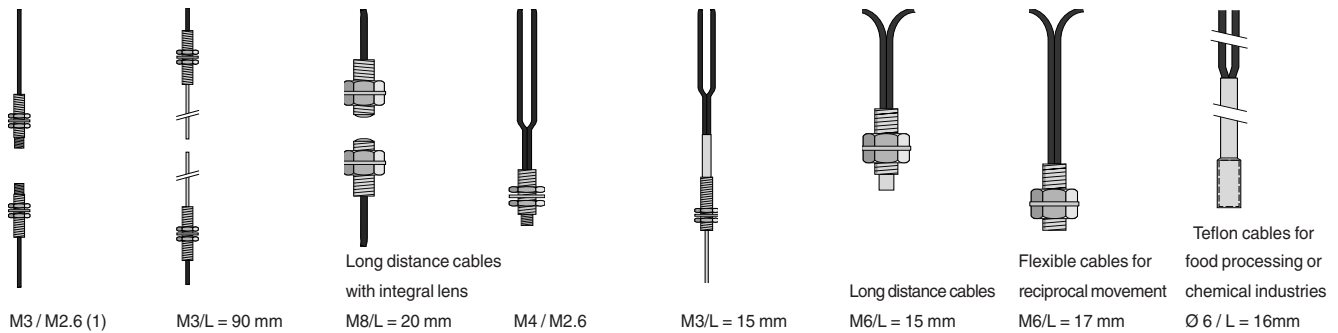
(1) Models suitable for use with XUFZ01 and XUFZ02

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

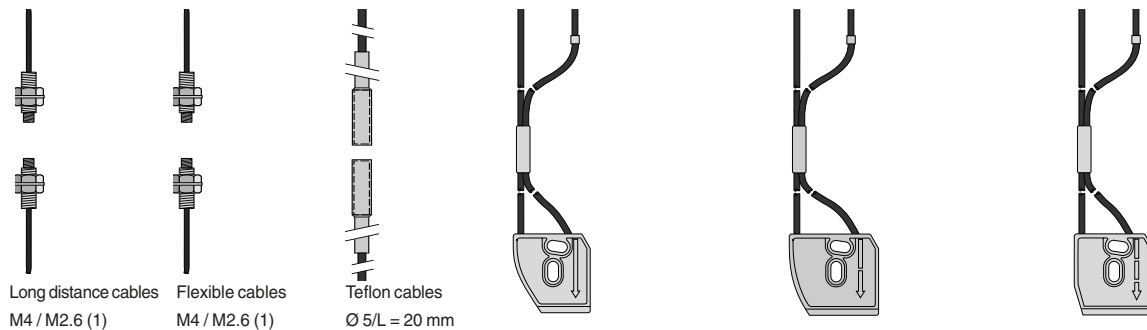
Plastic fiber optic cables (length 2 m)



Thru-beam (pairs)			Diffuse				
250 to 900 (3)	200 or 1500 (1)	180	70	60	60	15	18
Ø 1	Ø 1	Ø 1	Ø 1	Ø 1 + 16 Ø 0.265	Ø 1	Ø 0.5 + 4 Ø 0.23	Ø 0.5
Ø 2.2	Ø 2.2	Ø 2.2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 1 x 2	Ø 1 x 2
-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)
XUFZ920	XUFN12301	XUFN12311	XUFN05321	XUFN05323	XUFN05331	XUFN02323	XUFN01331
(2)	M4 x 0.7	M4 x 0.7	M6 x 0.75	M6 x 0.75 / M4 x 0.7	M6 x 0.75	M4 x 0.7	M4 x 0.7



Thru-beam (pairs)			Diffuse				
50 or 1000 (1)	30	2500	18	6	95	55	70
Ø 0.5	Ø 0.5	Ø 1	Ø 0.5	Ø 0.265	Ø 1.5	Ø 1	Ø 1
Ø 1	Ø 1	Ø 2.2	Ø 1 x 2	Ø 1 x 2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 2.2 x 2
-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)
XUFN35301	XUFN35311	XUFN2L01L2	XUFN01321	XUFN04331	XUFN5P01L2	XUFN5S01L2	XUFN5T01L2
M3 x 0.5	M3 x 0.5	M8 x 1.25	M4 x 0.7	M3 x 0.5	M6 x 0.75	M6 x 0.75	by supplied clip



Thru-beam (pairs)			Focused diffuse for full color sensor XURC4				
300 or 2000 (1)	100 or 750 (1)	1000	10	20	30		
Ø 1.5	Ø 1	Ø 1	Transmitter Ø 1	Receiver Ø 1.5	Transmitter Ø 1.5	Receiver Ø 1.5	
Ø 2.2	Ø 2.2	Ø 2.2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 2.2 x 2	
-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)	- 10 to + 55 (- 14 to + 131)	- 10 to + 55 (- 14 to + 131)	- 10 to + 55 (- 14 to + 131)	- 10 to + 55 (- 14 to + 131)	
XUFN2P01L2	XUFN2S01L2	XUFN2T01L2	XUFN5L01L2	XUFN5L02L2	XUFN5L03L2		
M2.6 x 0.45 / M4 x 0.7	M2.6 x 0.45 / M4 x 0.7	by clip (included)	2 elongated holes Ø 3.2 x 6.7 for M3 screws / mounting holes = 9.8 mm				

MACHINE SENSING



Transparent materials detection

Color mark reader

	Retroreflective (reflector not included)	Retroreflective (with teach mode and 50 x 50 reflector)	Diffuse (manual)	Diffuse (with teach mode)
Max sensing distance	80 cm / 2.6 ft. (1)	1.5 m / 4.9 ft.	9 mm / .35 in. (2)	9 mm / .35 in. (2)
Mounting (mm)	M18 x 1	direct: holes 40 x 40	direct: 21 x 28, M5 screws	direct: 21 x 28, M5 screws
Enclosure M (metal) P (plastic)	P	P	M	M
Sensitivity adjustment potentiometer		with teach mode button		with teach mode button
Alignment LEDs	-	yes	yes	yes
Temperature range °C (°F)	-10 to +55 (+14 to +131)	-25 to +55 (-13 to +131)	-10 to +55 (+14 to +131)	-10 to +55 (+14 to +131)
Degree of protection (conforming to IEC 60529)	IP67	IP65	IP67	IP67

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

Connection: pre-cabled, PVC (2 m)						
Dimensions (mm) Ø x L or H x W x L			M18 x 55	50 x 18 x 50	-	-
Transmitter/Receiver	3-wire PNP	light switching	-	-	-	-
		dark switching	-	-	-	-
	3-wire NPN	light switching	-	-	-	-
		dark switching	-	-	-	-
Transmitter/Receiver	3-wire PNP	light/dark prog. switching	XUBH01353	-	-	-
	3-wire NPN	light/dark prog. switching	XUBJ01353	-	-	-
Transmitter/Receiver	3-wire PNP/NPN	light/dark prog. switching	-	XUKT1KSML2	-	-
Connection: M12 connector						
Dimensions (mm) Ø x L or H x W x L			M18 x 68	50 x 18 x 80	100 x 30 x 62.5	96 x 31 x 64
Transmitter/Receiver	3-wire PNP	light switching	-	-	-	-
		dark switching	-	-	-	-
	3-wire NPN	light switching	-	-	-	-
		dark switching	-	-	-	-
Transmitter/Receiver	3-wire PNP	light/dark prog. switching	XUBH01353D	-	-	-
	3-wire NPN	light/dark prog. switching	XUBJ01353D	-	-	-
Transmitter/Receiver	3-wire PNP/NPN	light/dark prog. switching	-	XUKT1KSMM12	XURK0955D	XURK1KSMM12
Supply voltage limits, min/max (V) including ripple			10 to 30	10 to 30	10 to 30	10 to 30
Switching capacity, max (mA)			100	100	200	200
Overload and short-circuit protection / LED output state indicator			yes / yes	yes / yes	yes / yes	yes / yes
Switching frequency (Hz)			500	1500	10,000	10,000

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

(2) 0.007 m with XURZ02
0.018 m with XURZ01.

Accessories

Reflectors	(mm)	Plug-in female connectors, including pre-wired versions				Lenses for color mark or UV detection
	Ø 16					
	Ø 21					
24 x 21						
Ø 31						
Ø 39						
Ø 80						
50 x 50						
length 2 m w/o LED						
M8	XSZCS111	XSZCS101	-			
M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V			
U20	XSZCK111Y	XSZCK101Y	-			



UV sensor

Full color sensor

Diffuse

Opaque and transparent label detection

Liquid detection

Diffuse (manual)	Diffuse (with teach mode)	Diffuse (with integral amplifier)	Thru-beam or Diffuse (3) (with integral amplifier)	Diffuse with adjustable b/ground suppression	Thru-beam infra-red	Thru-beam infra-red
20 mm / .79 in.	9 mm / .35 in. (2)	40–60 mm / 1.6–2.3 in.	5–25 mm / 0.2–1 in. (3)	1 m / 3.3 ft.	2 mm / .07 in.	20 cm / 7.8 in. (4)
M18 x 1 M	direct: holes 28, M5 screws M	direct: holes 68x42, M5 screws M	on rail, holes 16 M	direct: holes 40 x 40 P	direct: holes 18 M	direct: holes 20 P
	with teach mode button	with teach mode button	with teach mode button		with teach mode button	
yes	yes	yes	yes	yes	yes	yes
-25 to +55 (-13 to +131)	-10 to +55 (+14 to +131)	-10 to +55 (+14 to +131)	-10 to +55 (+14 to +131)	-25 to +55 (-13 to +131)	0 to +55 (+32 to +131)	0 to + 40 (+32 to +104)
IP67	IP67	IP67	IP65	IP65	IP65	IP65

–	–	80 x 30 x 57	82 x 25 x 44	50 x 18 x 50	–	47 x 13 x 33
–	–	XURC3PPML2	XURC4PPML2	–	–	–
–	–	–	–	–	–	–
–	–	XURC3NPML2	XURC4NPML2	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	XUK8AKSNL2	–	XUMW1KSNL2
M 18 x 95	96 x 31 x 64	–	–	50 x 18 x 80	97 x 20 x 26	–
XU5M18U1D	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	XURU1KSMM12	–	–	XUK8AKSNM12	XUVK0252VS (M8)	–
10 to 30	10 to 30	10 to 30	10 to 30	10 to 30	10 to 30	10 to 30
100	200	100	100	100	100	100
yes / yes	yes / yes	yes / yes	yes / yes	yes / yes	yes / yes	yes / yes
1000	2000	1200	1200	250	10,000	1000

(3) Depending on fiber optic cable selected, see table below.

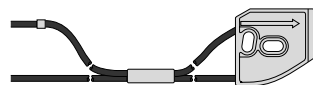
(4) Nominal sensing distance 10 m. Use between 10 and 20 cm for optimum liquid detection.

Ring for fixed focusing



XURZ02

Fiber optic guides for use with full color sensor XURC4...



Guide type	System	Reference	Sensing dist.
Focused	Diffuse	XUFN5L01L2	10 mm
		XUFN5L02L2	20 mm
		XUFN5L03L2	30 mm
Standard	Diffuse	XUFN05321	5 mm
	Thru-beam (color detection by transparency)	XUFN12301 + XUFZ01	250 mm





Sturdy and compact






Window frames for dynamic detection



Fork design with integral amplifier for indexing

	Diffuse (1)	Thru-beam (2)	Thru-beam
Max sensing distance	0.07 m / 2.7 in.	0.12 / 0.18 / 0.25 m	30 mm / 1.18 in.
Mounting (mm)	M8 x 1	direct: 222.5, M5 screws	centers 47
Enclosure M (metal) P (plastic)	M	M	P
Sensitivity adjustment potentiometer 	–		–
Alignment LEDs	–	yes	–
Temperature range °C (°F)	- 25 to + 55 (- 13 to + 131)	0 to + 60 (+ 32 to + 140)	- 5 to + 55 (+ 23 to + 131)
Degree of protection (conforming to IEC 60529)	IP67	IP65	IP54

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

Connection: pre-cabled (2 m) 					
Dimensions (mm) Ø x L or H x W x L		M8 x 40	–	58 x 14 x 68	
Transmitter/Receiver 3-wire PNP	N.O.	XUAH0515	–	XUVH0312	
	N.C.	XUAH0525	–	–	
	3-wire NPN	N.O.	XUAJ0515	–	XUVJ0312
		N.C.	XUAJ0525	–	–
Transmitter/Receiver 3-wire PNP	N.O. / N.C. programmable	–	–	–	
	3-wire NPN	N.O. / N.C. programmable	–	–	
Connection: connector 					
Dimensions (mm) Ø x L or H x W x L		M8 x 46	205 / 265 / 335 x 25 x 230	–	
Transmitter/Receiver 3-wire PNP	N.O.	XUAH0515S	–	–	
	N.C.	XUAH0525S	–	–	
	3-wire NPN	N.O.	XUAJ0515S	–	–
		N.C.	XUAJ0525S	–	–
Transmitter/Receiver 3-wire PNP	N.O. / N.C. programmable	–	–	–	
	3-wire NPN	N.O. / N.C. programmable	–	–	
Transmitter/Receiver 3-wire PNP/NPN programmable output ON or OFF	internal size 200 x 120 mm	–	XUVF120M12	–	
	internal size 200 x 180 mm	–	XUVF180M12	–	
	internal size 200 x 250 mm	–	XUVF250M12	–	
Connection: screw clamp terminals 					
Dimensions (mm) H x W x L		–	–	–	
Receiver or T/R 3-wire PNP		–	–	–	
Supply voltage limits, min/max (V) including ripple		10 to 30	18 to 30	19 to 38	
Switching capacity, max (mA)		100	400	150	
Overload and short-circuit protection / LED output state indicator		yes / yes	yes / yes	yes / yes	
Switching frequency (Hz)		700	500	1000	

- (1) Thru-beam also available.
- (2) Dynamic fork models available.
- (3) With 4 to 20 mA analog output.

Food Processing



Analog output
for position control



Very long sensing distance
or accurate sensing



High excess gain to resist
accumulation of dirt



Stainless steel version for
resistance to harsh agents



Diffuse	Thru-beam laser	Thru-beam	Polarized retro	Diffuse
0.20 to 0.80 m / 7.8 in. to 2.6 ft.	100 m / 328 ft.	70 m / 230 ft.	3 m / 9.8 ft.	0.15 m / 5.9 in.
centers 30 - 1/2 in. NPT cable gland	M18 x 1	M18 x 1	M18 x 1	M18 x 1
P	P	M	M (stainless steel)	M (stainless steel)
-			-	-
yes	yes	yes	-	-
- 25 to + 60 (- 13 to + 140)	- 10 to + 45 (+ 14 to + 113)	- 25 to + 55 (- 13 to + 131)	- 25 to + 55 (- 13 to + 131)	- 25 to + 55 (- 13 to + 131)
IP67	IP67	IP67	IP67	IP67

-	-	-	M18 x 62	M18 x 62
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	XU9N18PP341	XU5N18PP341
-	-	-	XU9N18NP341	XU5N18NP341

-	M18 x 76	M18 x 95	M18 x 72	M18 x 72
-	-	XU2M18AP20D (3)	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	XU2P18PP340DL	-	XU9N18PP341D	XU5N18PP341D
-	XU2P18NP340DL	-	XU9N18NP341D	XU5N18NP341D
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

86 x 27 x 83	-	-	-	-
XUJK803538	-	-	-	-
20 to 30	10 to 30	10 to 30	10 to 30	10 to 30
max: 20, min: 4	100	100	100	100
yes / yes	yes / yes	yes / yes	yes / yes	yes / yes
10,000	500	30	500	500

MACHINE SENSING

Osiconcept
Offering simplicity through Innovation

A single product that automatically adapts to all installation environments.

Accurate position detection using teach mode.



	Type E 26 x 26	Type C 40 x 40	Type D 80 x 80	Ø 12
Nominal sensing distance S_n	15 mm	25 mm	60 mm	5 mm
Usable sensing distance S (mm) shielded / non-shielded	0 to 10 / 0 to 15	0 to 15 / 0 to 25	0 to 40 / 0 to 60	0 to 3.4 / 0 to 5
Precision adjustment zone (mm) shielded / non-shielded	5 to 10 / 5 to 15	8 to 15 / 8 to 25	20 to 40 / 20 to 60	1.7 to 3.4 / 1.7 to 5
Mounting in metal	shielded or non-shielded via Osiconcept teach mode			
Enclosure M (metal) P (plastic)	P	P	P	P
Temperature range °C (°F)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)
Degree of protection (conforming to IEC 60529)	pre-cabled: IP68 (with connector: IP67)			IP67

Sensors for dc applications \equiv (3-wire)

Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) Ø x L or W x H x L			26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	M12 x 54
3-wire	PNP	N.O.	XS8E1A1PAL2	XS8C1A1PAL2	XS8D1A1PAL2	–
		N.C.	XS8E1A1PBL2	XS8C1A1PBL2	XS8D1A1PBL2	–
	NPN	N.O.	XS8E1A1NAL2	XS8C1A1NAL2	XS8D1A1NAL2	–
		N.C.	XS8E1A1NBL2	XS8C1A1NBL2	XS8D1A1NBL2	–
Connection: M8 or M12 connector			Snap-C [®] compatible on M12 only			
3-wire	PNP	N.O.	XS8E1A1PAM8	XS8C1A1PAM8	XS8D1A1PAM12	XS612B2PAL01M12 (2)
		N.C.	XS8E1A1PBM8	XS8C1A1PBM8	XS8D1A1PBM12	XS612B2PBL01M12 (2)
	NPN	N.O.	XS8E1A1NAM8	XS8C1A1NAM8	XS8D1A1NAM12	XS612B2NAL01M12 (2)
		N.C.	XS8E1A1NBM8	XS8C1A1NBM8	XS8D1A1NBM12	XS612B2NBL01M12 (2)
Supply voltage limits, min/max (V) including ripple			10 to 36	10 to 36	10 to 36	10 to 36
Switching capacity, max (mA)			100	200	200	100
Overload and short-circuit protection			yes	yes	yes	yes
LED output state indicator and power on LED			yes / yes	yes / yes	yes / yes	yes / yes
Voltage drop, closed state (V) at I nominal			2	2	2	2
Switching frequency (Hz)			2000	1000	150	1000

Sensors for ac or dc applications \sim / \equiv (2-wire)

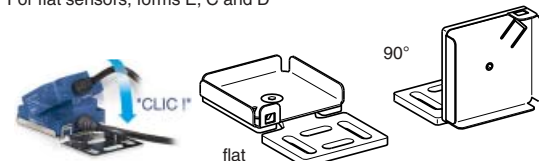
Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) Ø x L or W x H x L			26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	–
2-wire	ac / dc without short-circuit protection (1)	N.O.	XS8E1A1MAL2	XS8C1A1MAL2	XS8D1A1MAL2	–
		N.C.	XS8E1A1MBL2	XS8C1A1MBL2	XS8D1A1MBL2	–
Connection: 1/2" 20 UNF connector						
2-wire	ac / dc without short-circuit protection (1)	N.O.	XS8E1A1MAL01U20	XS8C1A1MAL01U20	XS8D1A1MAU20	–
		N.C.	XS8E1A1MBL01U20	XS8C1A1MBL01U20	XS8D1A1MBU20	–
Supply voltage limits, min/max (V) including ripple on dc			20 to 264	20 to 264	20 to 264	–
Switching capacity, max (mA)			200 \sim or \equiv	300 \sim / 200 \equiv	300 \sim / 200 \equiv	–
LED output state indicator / power on LED			yes / yes	yes / yes	yes / yes	–
Residual current, open state (mA)			1.5	1.5	1.5	–
Voltage drop, closed state (V) at I nominal			5.5	5.5	5.5	–
Switching frequency (Hz) ac / dc			50 / 1000	50 / 1000	50 / 1000	–

(1) It is necessary to place a 0.8 A quick-blow fuse in series with the load.

Accessories

Mounting brackets

For flat sensors, forms E, C and D



	straight	90°	adaptor plate for block type sensors XSE / XSC / XSD
Type E	XSZBE00	XSZBE90	XSZBE10
Type C	XSZBC00	XSZBC90	XSZBC10
Type D	–	–	XSZBD10

Mounting bracket with indexing pin for cylindrical sensors

	M8	XSZB108
	M12	XSZB112
	M18	XSZB118
	M30	XSZB130



Osiconcept

Osiconcept

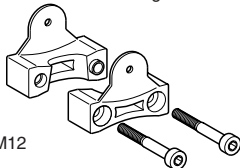
Ø 18		Ø 30		Ø 8		Ø 12		Ø 18		Ø 30	
10 mm		18 mm		2.5 mm		4 mm		8 mm		15 mm	
0 to 7 / 0 to 10		0 to 12 / 0 to 18		0 to 2		0 to 3.2		0 to 6.4		0 to 12	
3.5 to 7 / 3.5 to 10		6 to 12 / 6 to 18		-		-		-		-	
shielded or non-shielded via Osiconcept teach mode		shielded		shielded		shielded		shielded		shielded	
M		M		M		M		M		M	
- 25 to + 70 (- 13 to +158)		- 25 to + 70 (- 13 to +158)		- 25 to + 70 (- 13 to +158)		- 25 to + 70 (- 13 to +158)		- 25 to + 70 (- 13 to +158)		- 25 to + 70 (- 13 to +158)	
IP67		IP67		IP67		pre-cabled: IP68 (with connector: IP67)		IP67		IP67	

M18 x 67	M30 x 71	M8 x 50	M12 x 50	M18 x 60	M30 x 60
-	-	XS608B1PAL2	XS612B1PAL2	XS618B1PAL2	XS630B1PAL2
-	-	XS608B1PBL2	XS612B1PBL2	XS618B1PBL2	XS630B1PBL2
-	-	XS608B1NAL2	XS612B1NAL2	XS618B1NAL2	XS630B1NAL2
-	-	XS608B1NBL2	XS612B1NBL2	XS618B1NBL2	XS630B1NBL2
XS618B2PAL01M12 (2)	XS630B2PAL01M12 (2)	XS608B1PAM12	XS612B1PAM12	XS618B1PAM12	XS630B1PAM12
XS618B2PBL01M12 (2)	XS630B2PBL01M12 (2)	XS608B1PBM12	XS612B1PBM12	XS618B1PBM12	XS630B1PBM12
XS618B2NAL01M12 (2)	XS630B2NAL01M12 (2)	XS608B1NAM12	XS612B1NAM12	XS618B1NAM12	XS630B1NAM12
XS618B2NBL01M12 (2)	XS630B2NBL01M12 (2)	XS608B1NBM12	XS612B1NBM12	XS618B1NBM12	XS630B1NBM12
10 to 36	10 to 36	10 to 58	10 to 58	10 to 58	10 to 58
100	100	200	200	200	200
yes	yes	yes	yes	yes	yes
yes / yes	yes / yes	yes / -	yes / -	yes / -	yes / -
2	2	2	2	2	2
1000	1000	2500	2500	1000	500

				M12 x 50	M18 x 60	M30 x 60
				XS612B1MAL2	XS618B1MAL2	XS630B1MAL2
				XS612B1MBL2	XS618B1MBL2	XS630B1MBL2
				XS612B1MAU20	XS618B1MAU20	XS630B1MAU20
				XS612B1MBU20	XS618B1MBU20	XS630B1MBU20
				20 to 264	20 to 264	20 to 264
				200	300 ~ / 200 ...	300 ~ / 200 ...
				yes / -	yes / -	yes / -
				1.5	1.5	1.5
				5.5	5.5	5.5
				25 ~ / 1000 ...	25 ~ / 1000 ...	25 ~ / 500 ...

(2) Pigtail cable (L = 0.15 m) with end mounted remote control and M12 connector.

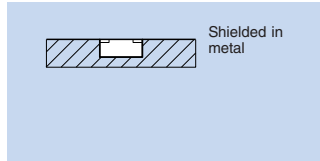
XS6 remote control mounting bracket



XSZBPM12

Plug-in female connectors, including pre-wired versions

length 2 m w/o LED	90°	straight	Snap-C
M8	XSZCS111	XSZCS101	-
M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V
U20	XSZCK111Y	XSZCK101Y	-



	Type J 8 x 22	Type F 15 x 32	Type E 26 x 26	Type C 40 x 40
Nominal sensing distance S_n	2.5 mm	5 mm	10 mm	15 mm
Usable sensing distance (mm)		0 to 2	0 to 4	0 to 8 0 to 12
Flush mounting in metal	shielded	shielded	shielded	shielded
Enclosure M (metal) P (plastic)	P	P	P	P
Temperature range °C (°F)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)
Degree of protection (conforming to IEC 60529)	pre-cabled: IP68 (with connector: IP67)			

Sensors for dc applications \equiv (3-wire)

Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) \varnothing x L or W x H x L			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15
3-wire	PNP	N.O.	XS7J1A1PAL2	XS7F1A1PAL2	XS7E1A1PAL2	XS7C1A1PAL2
		N.C.	XS7J1A1PBL2	XS7F1A1PBL2	XS7E1A1PBL2	XS7C1A1PBL2
	NPN	N.O.	XS7J1A1NAL2	XS7F1A1NAL2	XS7E1A1NAL2	XS7C1A1NAL2
		N.C.	XS7J1A1NBL2	XS7F1A1NBL2	XS7E1A1NBL2	XS7C1A1NBL2
Connection: M8 or M12 connector			Snap-C compatible on M12 only			
3-wire	PNP	N.O.	XS7J1A1PAL01M8 (1)	XS7F1A1PAL01M8 (1)	XS7E1A1PAM8	XS7C1A1PAM8
		N.C.	XS7J1A1PBL01M8 (1)	XS7F1A1PBL01M8 (1)	XS7E1A1PBM8	XS7C1A1PBM8
	NPN	N.O.	XS7J1A1NAL01M8 (1)	XS7F1A1NAL01M8 (1)	XS7E1A1NAM8	XS7C1A1NAM8
		N.C.	XS7J1A1NBL01M8 (1)	XS7F1A1NBL01M8 (1)	XS7E1A1NBM8	XS7C1A1NBM8
Supply voltage limits, min/max (V) including ripple			10 to 36	10 to 36	10 to 36	10 to 36
Switching capacity, max (mA)			100	100	100	100
Overload and short-circuit protection / LED output state indicator			yes / yes	yes / yes	yes / yes	yes / yes
Voltage drop, closed state (V) at I nominal			2	2	2	2
Switching frequency (Hz)			2000	2000	1000	1000

Sensors for ac or dc applications \sim / \equiv (2-wire)

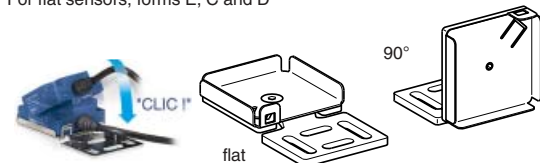
Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) \varnothing x L or W x H x L			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15
2-wire	non polarized	N.O.	XS7J1A1DAL2	XS7F1A1DAL2	XS7E1A1DAL2	XS7C1A1DAL2
		N.C.	XS7J1A1DBL2	XS7F1A1DBL2	XS7E1A1DBL2	XS7C1A1DBL2
Connection: M8 or M12 connector			Snap-C compatible on M12 only			
2-wire	non polarized	N.O.	XS7J1A1DAL01M8 (1)	XS7F1A1DAL01M8 (1)	XS7E1A1DAM8	XS7C1A1DAM8
		N.C.	XS7J1A1DBL01M8 (1)	XS7F1A1DBL01M8 (1)	XS7E1A1DBM8	XS7C1A1DBM8
Supply voltage limits, min/max (V) including ripple			10 to 36	10 to 36	10 to 36	10 to 36
Switching capacity, max (mA)			100	100	100	100
Overload and short-circuit protection / LED output state indicator			yes / yes	yes / yes	yes / yes	yes / yes
Residual current, open state (mA)			0.5	0.5	0.5	0.5
Voltage drop, closed state (V) at I nominal			4	4	4	4
Switching frequency (Hz) ac / dc			4000	5000	1000	1000

(1) Pigtail cable (L = 0.15 m) with M8 connector.

Accessories

Mounting brackets

For flat sensors, forms E, C and D



	flat	90°	adaptor plate for block type sensors XSE / XSC / XSD
Type J	XSZBJ00	XSZBJ90	–
Type F	XSZBF00	XSZBF90	–
Type E	XSZBE00	XSZBE90	XSZBE10
Type C	XSZBC00	XSZBC90	XSZBC10
Type D	XSZBD00	–	XSZBD10

Mounting clamp with indexing pin for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130



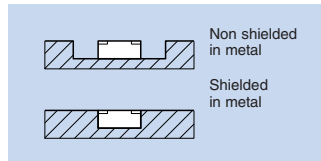
Type D 80 x 80	Ø 8	Ø 12	Ø 18	Ø 30
40 mm	1.5 mm	2 mm	5 mm	10 mm
0 to 32	0 to 1.2	0 to 1.6	0 to 4	0 to 8
shielded	shielded	shielded	shielded	shielded
P	M	M	M	M
- 25 to + 70 (- 13 to +158)	- 25 to + 70 (- 13 to +158)	- 25 to + 70 (- 13 to +158)	- 25 to + 70 (- 13 to +158)	- 25 to + 70 (- 13 to +158)
pre-cabled: IP68 (with connector: IP67)	IP67	pre-cabled: IP68 (with connector: IP67)		

80 x 80 x 26	M8 x 33	M12 x 33	M18 x 36.5	M30 x 40.6
XS7D1A1PAL2	XS508B1PAL2	XS512B1PAL2	XS518B1PAL2	XS530B1PAL2
XS7D1A1PBL2	XS508B1PBL2	XS512B1PBL2	XS518B1PBL2	XS530B1PBL2
XS7D1A1NAL2	XS508B1NAL2	XS512B1NAL2	XS518B1NAL2	XS530B1NAL2
XS7D1A1NBL2	XS508B1NBL2	XS512B1NBL2	XS518B1NBL2	XS530B1NBL2
XS7D1A1PAM12	XS508B1PAM8	XS512B1PAM12	XS518B1PAM12	XS530B1PAM12
XS7D1A1PBM12	XS508B1PBM8	XS512B1PBM12	XS518B1PBM12	XS530B1PBM12
XS7D1A1NAM12	XS508B1NAM8	XS512B1NAM12	XS518B1NAM12	XS530B1NAM12
XS7D1A1NBM12	XS508B1NBM8	XS512B1NBM12	XS518B1NBM12	XS530B1NBM12
10 to 36	10 to 36	10 to 36	10 to 36	10 to 36
100	200	200	200	200
yes / yes	yes / yes	yes / yes	yes / yes	yes / yes
2	2	2	2	2
100	5000	5000	2000	1000

80 x 80 x 26	M8 x 50	M12 x 50	M18 x 52.5	M30 x 50
XS7D1A1DAL2	XS508B1DAL2	XS512B1DAL2	XS518B1DAL2	XS530B1DAL2
XS7D1A1DBL2	XS508B1DBL2	XS512B1DBL2	XS518B1DBL2	XS530B1DBL2
XS7D1A1DAM12	XS508B1DAM12	XS512B1DAM12	XS518B1DAM12	XS530B1DAM12
XS7D1A1DBM12	XS508B1DBM12	XS512B1DBM12	XS518B1DBM12	XS530B1DBM12
10 to 36	10 to 58	10 to 58	10 to 58	10 to 58
100	100	100	100	100
yes / yes	yes / yes	yes / yes	yes / yes	yes / yes
0.5	0.5	0.5	0.5	0.5
4	4	4	4	4
100	4000	4000	3000	2000

Plug-in female connectors, including pre-wired versions

	90°	straight	Snap-C
length 2 m w/o LED			
M8	XSZCS111	XSZCS101	—
M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V
U20	XSZCK111Y	XSZCK101Y	—



	Ø 8	Ø 12	Ø 18	Ø 30
Nominal sensing distance Sn	2.5 mm	4 mm	8 mm	15 mm
Usable sensing distance (mm)	0 to 2	0 to 3.2	0 to 6.4	0 to 12
Flush mounting in metal	non-shielded	non-shielded	non-shielded	non-shielded
Enclosure M (metal) P (plastic)	P	P	P	P
Temperature range °C (°F)	-25 to +80 (-13 to +176)	-25 to +80 (-13 to +176)	-25 to +80 (-13 to +176)	-25 to +80 (-13 to +176)
Degree of protection (conforming to IEC 60529)	pre-cabled: IP68 (with connector: IP67)			

Sensors for dc applications \equiv (3-wire)

Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) Ø x L or W x H x L			M8 x 33	M12 x 33	M18 x 33.5	M30 x 40.5
3-wire	PNP	N.O.	XS4P08PA340	XS4P12PA340	XS4P18PA340	XS4P30PA340
		N.C.	XS4P08PB340	XS4P12PB340	XS4P18PB340	XS4P30PB340
	NPN	N.O.	XS4P08NA340	XS4P12NA340	XS4P18NA340	XS4P30NA340
		N.C.	XS4P08NB340	XS4P12NB340	XS4P18NB340	XS4P30NB340
	0 to 10 V output	plastic	-	-	-	-
	4 to 20 mA output	metal shielded	-	-	-	-
		plastic shielded	-	-	-	-
plastic non-shielded		-	-	-	-	
Connection: M8 or M12 connector						
3-wire	PNP	N.O.	XS4P08PA340S	XS4P12PA340D	XS4P18PA340D	XS4P30PA340D
		N.C.	XS4P08PB340S	XS4P12PB340D	XS4P18PB340D	XS4P30PB340D
	NPN	N.O.	XS4P08NA340S	XS4P12NA340D	XS4P18NA340D	XS4P30NA340D
		N.C.	XS4P08NB340S	XS4P12NB340D	XS4P18NB340D	XS4P30NB340D
	0 to 10 V output		-	-	-	-
	4 to 20 mA output		-	-	-	-
	Supply voltage limits, min/max (V) including ripple		10 to 38	10 to 38	10 to 38	10 to 38
Switching capacity, max (mA)		200	200	200	200	
Short-circuit protection / LED output state indicator		yes / yes	yes / yes	yes / yes	yes / yes	
Linearity error		-	-	-	-	
Voltage drop, closed state (V) at I nominal		2	2	2	2	
Operating frequency (Hz)		5000	5000	2000	1000	

Sensors for ac or dc applications \sim / \equiv (2-wire)

Connection: pre-cabled, PvR (2 m)						
Dimensions (mm) Ø x L			M8 x 50	M12 x 50	M18 x 60	M30 x 60
2-wire	without short-circuit protection (1)	N.O.	XS4P08MA230	XS4P12MA230	XS4P18MA230	XS4P30MA230
		N.C.	XS4P08MB230	XS4P12MB230	XS4P18MB230	XS4P30MB230
Connection: U20 connector						
2-wire	without short-circuit protection (1)	N.O.	XS4P08MA230K	XS4P12MA230K	XS4P18MA230K	XS4P30MA230K
		N.C.	XS4P08MB230K	XS4P12MB230K	XS4P18MB230K	XS4P30MB230K
Supply voltage limits, min/max (V) including ripple on dc		20 to 264	20 to 264	20 to 264	20 to 264	
Switching capacity, max (mA)		100	200	300 \sim / 200 \equiv	300 \sim / 200 \equiv	
LED output state indicator		yes	yes	yes	yes	
Residual current, open state (mA)		0.6	0.6	0.6	0.6	
Voltage drop, closed state (V) at I nominal		5.5	5.5	5.5	5.5	
Switching frequency (Hz) ac / dc		25 \sim / 3000 \equiv	25 \sim / 3000 \equiv	25 \sim / 2000 \equiv	25 \sim / 1000 \equiv	

(1) It is necessary to place a 0.4 A quick-blow fuse in series with the load.

Analog (Position control)

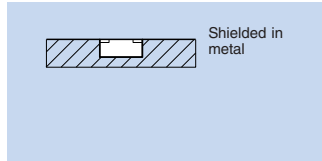


Type F 8 x 32	Type E 26 x 26	Type C 40 x 40	Type D 80 x 80	Ø 12	Ø 18	Ø 30
5 mm	10 mm	15 mm	40 mm	M: 2 mm / P: 4 mm	M: 5 mm / P: 8 mm	M: 10 mm / P: 15 mm
1 to 4	1 to 10	2 to 15	5 to 40	M: 0.2 to 2 / P: 0.4 to 4	M: 0.5 to 5 / P: 0.8 to 8	M: 1 to 10 / P: 1.5 to 15
shielded	shielded	shielded	shielded	shielded/non-shielded	shielded/non-shielded	shielded/non-shielded
P	P	P	P	M or P	M or P	M or P
-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)
pre-cabled: IP68 (with connector: IP67)						

15 x 32 x 8	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
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
XS9F111A1L2	XS9E111A1L2	XS9C111A1L2	XS9D111A1L2	XS4P12AB110	XS4P18AB110	XS4P30AB110
-	-	-	-	XS1M12AB120	XS1M18AB120	XS1M30AB120
XS9F111A2L2	XS9E111A2L2	XS9C111A2L2	XS9D111A2L2	-	-	-
-	-	-	-	XS4P12AB120	XS4P18AB120	XS4P30AB120
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
XS9F111A1L01M8 (2)	XS9E111A1L01M12 (2)	XS9C111A1L01M12 (2)	XS9D111A1M12	-	-	-
XS9F111A2L01M8 (2)	XS9E111A2L01M12 (2)	XS9C111A2L01M12 (2)	XS9D111A2M12	-	-	-
10-36	10-36	10-36	10-36	10-38	10-38	10-38
-	-	-	-	-	-	-
-	-	-	-	-	-	-
5%	5%	5%	5%	4%	4%	4%
-	-	-	-	-	-	-
2000	1000	1000	100	1500	500	300
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
(2) Pigtail cable (L = 0.15 m) with end connector.						

MACHINE SENSING

For connection accessories, see page 5-15.



	Ø 4	Ø 5	Ø 6.5
Nominal sensing distance Sn	1 mm	1 mm	1.5 mm
Usable sensing distance (mm)	0 to 0.8	0 to 0.8	0 to 1.2
Flush mounting in metal	shielded		
Enclosure M (metal) P (plastic)	M		
Adjustment means	–		
Temperature range °C (°F)	- 25 to + 70 (- 13 to + 158)		
Degree of protection (conforming to IEC 60529)	IP67		
Dimensions (mm) Ø x L or W x H x L	Ø 4 x 29	M5 x 29	M6.5 x 33
Maximum speed of passing target (impulses/min)	–	–	–
Sensing range (impulses/min)	–	–	–

Sensors for dc applications \equiv (3-wire)

Connection: pre-cabled, PvR (2 m)						
4-wire	PNP / NPN	N.O. / N.C.	programmable	–	–	–
3-wire	PNP	N.O.	slow version	XS1L04PA310	XS1N05PA310	XS1L06PA340
		N.C.	fast version	–	–	–
		N.O.		XS1L04NA310	XS1N05NA310	XS1L06NA340
Connection: M8 or M12 connector						
3-wire	PNP	N.O.		XS1L04PA310S	XS1N05PA311S (2)	XS1L06PA340S
		N.C.		–	–	–
	NPN	N.O.		XS1L04NA310S	XS1N05NA311S (2)	XS1L06NA340S
		N.C.		–	–	–
Connection: M12 connector						
4-wire	PNP / NPN	N.O. / N.C.	programmable	–	–	–
Supply voltage limits, min/max (V) including ripple				5–30	5–30	10–38
Switching capacity, max (mA)				100	100	200
Short-circuit protection / LED output state indicator / Power on LED				yes / yes / –	yes / yes / –	yes / yes / –
Voltage drop, closed state (V) at I nominal				2	2	2
Switching frequency (Hz)				5000	5000	2500

(2) Stainless steel nominal sensors, Sn = 0.8 mm.

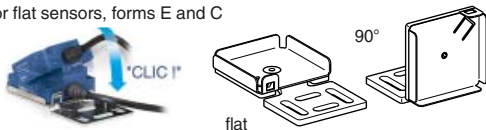
Sensors for ac or dc applications \sim / \equiv (2-wire)

Connection: pre-cabled, PvR (2 m)						
2-wire	ac/dc without short-circuit protection (4)	N.O.		–	–	–
		N.C.		–	–	–
		N.C.	slow version	–	–	–
			fast version	–	–	–
Supply voltage limits, min/max (V), 50-60 Hz				–	–	–
Switching capacity, max (mA)				–	–	–
LED output state indicator / Power on LED				–	–	–
Residual current, open state (mA)				–	–	–
Voltage drop, closed state (V) at I nominal				–	–	–
Switching frequency (Hz)				–	–	–

Accessories

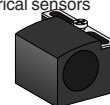
Mounting brackets

For flat sensors, forms E and C



	straight	90°
Type E	XSZBE00	XSZBE90
Type C	XSZBC00	XSZBC90

Mounting bracket with indexing pin for cylindrical sensors



M4	XSZB104	M12	XSZB112
M5	XSZB105	M18	XSZB118
M6.5	XSZB165	M30	XSZB130
M8	XSZB108		

Speed control



Ferrous / non-ferrous materials



Type E 26 x 26	Type C 40 x 40	Ø 30	Ø 18	Ø 30
10 mm	15 mm	10 mm	5 mm	10 mm
0 to 8	0 to 12	0 to 8	0 to 4	0 to 8
shielded			shielded	
P	P	M	M	M
teach mode	teach mode		–	–
- 25 to + 70 (- 13 to + 158)			0 to + 50 (+ 32 to + 122)	
IP67			pre-cabled: IP68 (with connector: IP67)	
26 x 26 x 13	40 x 40 x 15	M30 x 81	M18 x 70	M30 x 60
48000	48000	6000–48000 (1)	–	–
6–6000	6–6000	6–150 / 120–3000 (1)	–	–

(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).

–	–	–	XS1M18KPM40	XS1M30KPM40
–	–	–	–	–
–	–	XSAV11373	–	–
–	–	XSAV12373	–	–
–	–	–	–	–
–	–	–	–	–
XS9E11RPBL01M12 (3)	XS9C11RPBL01M12 (3)	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	XS1M18KPM40D	XS1M30KPM40LD
10 to 36	10 to 36	10 to 58	10 to 38	Pigtail with M12 con., L = 0.8 m
100	200	200	200	
yes / yes / yes	yes / yes / yes	yes / yes / –	yes / yes / –	
2	2	2	2.6	
–	–	–	1000	

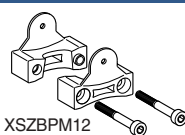
(3) Pigtail cable (L = 0.15 m) with end mounted remote control and M12 connector.

–	–	–	–	–
XS9E11RMBL01U20 (4)	XS9C11RMBL01U20 (4)	–	–	–
–	–	XSAV11801 (5)	–	–
–	–	XSAV12801 (5)	–	–
20 to 264	20 to 264	20 to 264	–	–
100	300 ~ / 200 ---	350 ~ / 200 ---	–	–
yes / yes	yes / yes	yes / –	–	–
1.5	1.5	1.5	–	–
5.5	5.5	5.7	–	–
–	–	–	–	–

(4) Pigtail cable (L = 0.15 m) with end mounted remote control and 1/2-20UNF connector.

(5) It is necessary to place a quick-blow fuse in series with the load.

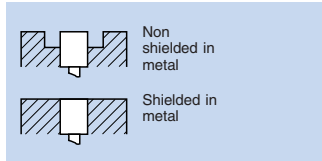
XS9 remote control mounting bracket



XSZBPM12

Plug-in female connectors, including pre-wired versions

For connection accessories, see page 5-15.



	Ø 12	Ø 18	Ø 30	Ø 32
Nominal sensing distance S_n	2 mm	5 mm	10 mm	15 mm
Usable sensing distance (mm)	0–1.44	0–3.6	0–7.2	0–10.8
Flush mounting in metal	shielded			
Enclosure M (metal) P (plastic)	M	M	M	M
Temperature range °C (°F)	0 to + 50 (+ 32 to +122)	- 25 to + 70 (- 13 to + 158)	- 25 to + 70 (- 13 to + 158)	- 25 to + 70 (- 13 to + 158)
Degree of protection (conforming to IEC 60529)	IP67	IP67	IP67	IP63

Sensors for dc applications —

Connection: pre-cabled, PVC (2 m)						
Dimensions (mm) Ø x L or W x D x H			M12 x 50	M18 x 60	M30 x 60	—
3-wire	PNP	N.O.	XT1M12PA372	XT1M18PA372	XT1M30PA372	—
		N.C.	XT1M12PB372	XT1M18PB372	XT1M30PB372	—
	NPN	N.O.	XT1M12NA372	XT1M18NA372	XT1M30NA372	—
Connection: screw clamp terminals						
3-wire	PNP	N.O. + N.C. complementary functions	—	—	—	—
	NPN	N.O. + N.C. complementary functions	—	—	—	—
Connection: M12 connector (M8 for XX512...)						
4-wire	PNP / NPN	N.O.	—	—	—	—
Supply voltage limits, min/max (V) including ripple			10 to 38	—	—	—
Switching capacity, max (mA)			300	—	—	—
Short-circuit protection / LED output state indicator			yes / yes	—	—	—
Voltage drop, closed state (V) at I nominal			2	—	—	—
Switching frequency (Hz)			100	—	—	—
Ultrasound frequency (kHz)			—	—	—	—

Sensors for ac or dc applications ~ / — (2-wire)

Connection: pre-cabled, PVC (2 m)						
Dimensions (mm) Ø x L or W x D x H			—	M18 x 60	M30 x 60	32 x 80
2-wire ac	N.O.		—	XT1M18FA262	XT1M30FA262	XT1L32FA262
	N.C.		—	XT1M18FB262	XT1M30FB262	XT1L32FB262
Connection: screw clamp terminals						
2-wire ac	programmable N.O. or N.C.		—	—	—	—
Supply voltage limits, min/max (V) including ripple on dc			—	20 to 264	20 to 264	90 to 250
Switching capacity, max (mA)			—	300	300	250
LED output state indicator			—	yes	yes	yes
Residual current, open state (mA)			—	1.5 / 120 V	1.5 / 120 V	7
Voltage drop, closed state (V) at I nominal			—	5.5	5.5	9
Switching frequency (Hz)			—	25	25	10

Accessories

Mounting brackets		Plug-in female connectors, including pre-wired versions			
Mounting bracket with indexing pin for cylindrical sensors					
	M12 XSZB112	length 2 m w/o LED	90 °	straight	Snap-C
	M18 XSZB118	M8	XSZCS111	XSZCS101	—
	M30 XSZB130	M12	XSZCD111Y	XSZCD101Y	XZCC12FDM40V
	Ø32 XUZB32	U20	XSZCK111Y	XSZCK101Y	—

Ultrasonic

Detection of conductive materials Detection of any material



40 x 40	Ø 18	Ø 30	Ø 32	Ø 12	Ø 18	Ø 30
15 mm	8 mm	15 mm	20 mm	51 mm	152 mm	1 m
0 to 10.8	0–5.8	0–10.8	0–14.4	6.4–51	25.4–152	51–991
non-shielded	non-shielded			–	–	–
P	P	P	P	P	P	P
-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-25 to +70 (-13 to +158)	-20 to +65 (-4 to +149)	0 to +60 (+32 to +122)	0 to +60 (+32 to +122)
IP67	IP67	IP67	IP63	IP67	IP67	IP67

40 x 40 x 117	M18 x 60	M30 x 60	–	M12 x 50	M18 x 65	M30 x 85
–	XT4P18PA372	XT4P30PA372	–	–	–	–
–	–	–	–	–	–	–
–	XT4P18NA372	XT4P30NA372	–	–	–	–
XT7C40PC440	–	–	–	–	–	–
XT7C40NC440	–	–	–	–	–	–
–	–	–	–	XX512A1KAM8	XX518A1KAM12	XX630A1KAM12
10 to 58	10 to 38	–	–	10 to 28	10 to 28	10 to 28
200	300	–	–	100	100	100
yes / yes	yes / yes	–	–	yes / yes	yes / –	yes / yes
2	2	–	–	1	1	1
100	100	–	–	–	–	–
–	–	–	–	500	500	200

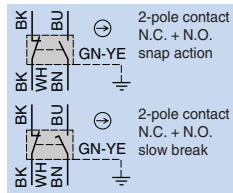
40 x 40 x 117	M18 x 60	M30 x 60	Ø 32 x 80
–	XT4P18FA262	XT4P30FA262	XT4L32FA262
–	–	XT4P30FB262	XT4L32FB262
XT7C40FP262	–	–	–
20 to 264	20 to 264	–	90 to 250
350	300	–	250
yes	yes	–	yes
1.5	1.5 / 120V	–	7
5.5	5.5	–	9
25	25	–	10

MACHINE SENSING

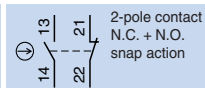
Complete switches

(adaptable sub-assemblies, see pages 5-24–5-25)

XCMD / XCMN



XCKT

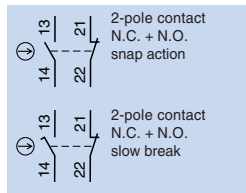


Miniature type XCMD metal, pre-cabled

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 (other lengths available on request)				
Mounting holes (mm)	20				M12
Body dimensions (mm) W x D x H	30 x 16 x 50				
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 (mm)	20	20	20	M18 x 1	M18 x 1
Body dimensions (mm) W x D x H	31 x 30 x 65				

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 type XCKT, plastic, 2 cable entries

M12 head steel roller plunger	Cat whisker	End plunger	Metal end plunger	Metal roller plunger	Plastic roller lever	Plastic roller lever, horizontal actuation	Cat whisker	
0.1	1	0.5	0.5	0.5	1.5	1	1	
⊖	–	⊕	⊖	⊖	⊖	⊖	–	
		IP65	IP66 and IP67					
			~ ac 15; A 300 (Ue = 240 V, Ie = 3 A) / --- dc 13; Q 300 (Ue = 250 V, Ie = 0.27 A)					
		pre-cabled, length = 1 m	2 tapped entries for 1/2 in. NPT cable gland					
M12	20	20	20 or 40					
		30 x 16 x 59	58 x 30 x 51					
XCMD21F2L1	XCMD2106L1	XCMN2110L1	XCKT2110N12	XCKT2102N12	XCKT2118N12	XCKT2121N12	XCKT2106N12	
XCMD25F2L1	XCMD2506L1	–	–	–	–	–	–	



With reset facility XCPR and XCDR

Plastic roller lever	Variable length plastic roller lever	Rubber roller lever Ø 50 mm	Cat whisker	Metal end plunger	Steel roller lever	Plastic roller lever, horizontal actuation	Plastic roller lever, 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	20	20	20	20	20	20	20	20	
				31 x 30 x 95					

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






MACHINE SENSING

Heads - common to miniature and compact bodies

Metal plunger 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



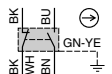
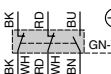
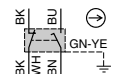
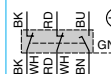
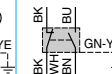
Description	Rotary head without lever, spring return, for actuation from LH or RH side	Plastic roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Plastic roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel roller lever, track: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

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

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

Bodies / contact assemblies

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 N.C.+N.C.+N.O. Slow break	2-pole N.C. + N.O. Snap action M12 5-pin connector
Metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD21C12
Plastic body	-	-	-	-	ZCMD21M12

Connection of 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
L = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1	
L = 2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2	4-pin
L = 5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	
					XSZCD1501Y
					XSZCD101Y

and compact switches

Plastic roller lever, vertical actuation	M12 head metal plunger	M18 head metal plunger	M12 head steel roller plunger	M18 head steel roller plunger	Spring lever	Spring lever with plastic end	Cat whisker
ZCE27	ZCEF0 (2)	ZCEH0 (1)	ZCEF2 (2)	ZCEH2 (1)	ZCE08	ZCE07	ZCE06

Plastic roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Steel roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Ceramic roller lever	Variable length plastic roller lever	Round, glass fiber rod lever Ø 3 mm L = 125 mm	Metal spring lever	Plastic roller lever Ø 50 mm	Adjustable plastic roller lever Ø 50 mm
ZCY18 (1)	ZCY19 (1)	ZCY22	ZCY45	ZCY55	ZCY91	ZCY39	ZCY49

MACHINE SENSING

Compact

Type of contact								
Metal body	ZCD21	ZCD39	ZCD25	ZCD37	ZCD21M12	-	-	-
Plastic body	ZCP21	ZCP39	ZCP25	ZCP37	-	ZCP21M12	ZCT21P16	ZCT25P16

Connection of compact bodies

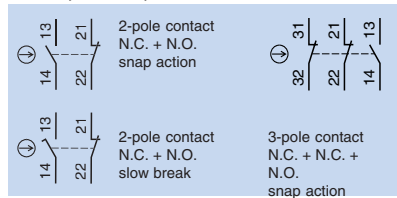
Removable cable gland (3)							Option: pre-wired M12 connector, L = 2 m			ZCT Pg 11 cable gland versions: replace the suffix P16 by G11. Example: ZCT21P16 becomes ZCT21G11 ZCT 1/2 NPT versions: replace the suffix P16 by N12 (adaptor). Example: ZCT21P16 becomes ZCT21N12
Description	For ISO M16 cable 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		

(3) Plastic and metal cable glands are not interchangeable.

Osiswitch Standard

Limit switches

XCKJ, XCKS, 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
Body (2-pole N.C. + N.O. snap action)	⊕ ZCKJ1	⊕ ZCKJ1	⊕ ZCKJ1	⊕ ZCKJ1	⊕ ZCKJ1
(2-pole N.C. + N.O. break before make, slow break)	⊖ ZCKJ5	⊖ ZCKJ5	⊖ ZCKJ5	⊖ ZCKJ5	⊖ ZCKJ5
(3-pole N.C. + N.C. + N.O. snap action)	⊕ ZCKJD39	⊕ ZCKJD39	⊕ ZCKJD39	⊕ ZCKJD39	⊕ ZCKJD39
Associated head (including operator)	⊕ ZCKE61	⊕ ZCKE67	⊕ ZCKE05	⊕ ZCKE05	⊕ ZCKE05
Operating lever for rotary head	-	-	⊕ ZCKY11	ZCKY41	ZCKY59

⊕ Positive opening operation


MACHINE SENSING



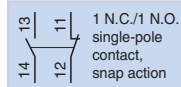
Setting range (psi) (1)	lower limit (PB) : vacuum switches upper limit (PH): pressure switches	-1.16 to -14.5	1.16 to 14.5	2.90 to 36	11.6 to 145	46 to 580
Ambient air temperature (°C / °F)		-25 to +80 / -13 to +176				
Degree of protection (conforming to IEC 60529)		IP67				
Voltage limits (V)		24 --- (--- 17 to 33)				
Dimensions (mm / in.) H x W x D		113 x 46 x 58 / 4.45 x 1.81 x 2.28				
Fluid connection		1/4" NPT female (2)				
Electrical connection		M12 connector 				
Configurable with digital display, connection by M12 connector (3)						
Analog and solid-state output 200 mA	4 to 20 mA 0 to 10 V	XMLFM01D2026 XMLFM01D2126	XMLF001D2026 XMLF001D2126	XMLF002D2026 XMLF002D2126	XMLF010D2026 XMLF010D2126	XMLF040D2026 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

Straight—M12, 2 meter cable, catalog no. XZCP1164L2
90°—M12, 2 meter cable, catalog no. XZCP1234L2



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 (°C / °F)		-25 to +80 / -13 to +176				
Degree of protection (conforming to IEC 60529)		IP67				
Voltage limits (V)		24 --- (--- 17 to 33)				
Dimensions (mm / in.) H x W x D		113 x 46 x 58 / 4.45 x 1.81 x 2.28				
Fluid connection		1/4" NPT female (2)				
Electrical connection		M12 connector 				
Configurable with digital display, connection by M12 connector (3)						
Analog and solid-state output 200 mA	4 to 20 mA 0 to 10 V	XMLF100D2026 XMLF100D2126	XMLF160D2026 XMLF160D2126	XMLF250D2026 XMLF250D2126	XMLF400D2026 XMLF400D2126	XMLF600D2026 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) Fluids controlled: hydraulic oils, air, fresh water, sea water, corrosive fluids from -15 to +80°C / -13 to +176°F.
 (2) Available with other fluid connections: 1/4"BD female and SAE 7/16-20 UNF.
 (3) Also available in ac 120 V version with 2.5 A relay output and SAE 7/8-16 UN connector.



(all devices shown are with setting scale)

Size (psi) Max. PH Rising	-14.5	73	14.5	36
Environmental characteristics	Ambient air temperature (°C / °F): -25 to +70 / -13 to +158			
Rated operational characteristics	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A - Ue = 120 V, Ie = 3 A) / --- DC-13; R300 (Ue = 250 V, Ie = 0.1 A)			
Fluid connection	1/4" NPT female (other connections possible, please contact us)			
Electrical connection	Screw terminals, tapped entry 1/2" NPT			

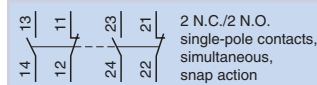
Type XMLA fixed differential (1), single threshold detection

Setting range (psi) of upper limit (PH): pressure switches	-4.06 to -14.5 (5)	-	0.44 to 14.5	2.18 to 36
Dimensions (in.) H x W x D	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	6.38 x 4.33 x 4.33	6.22 x 2.17 x 3.05
With setting scale, screw terminal connections (2)				
1 N.C./1 N.O. single-pole, snap action contact	XMLAM01V2S13	-	XMLA001R2S13	XMLA002A2S13
Without setting scale, screw terminal connections (2)				
1 N.C./1 N.O. single-pole, snap action contact	XMLAM01V1S13	-	XMLA001R1S13	XMLA002A1S13
Natural differential (psi)	at low setting	3.48 (3)	0.29	1.89
subtract from PH to give PB	at high setting	3.48 (3)	0.58	1.89

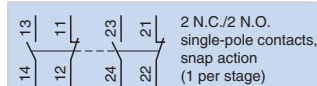
Type XMLB adjustable differential (1), regulation between 2 thresholds

Setting range (psi) of upper limit (PH): pressure switches	-2.03 to -14.5 (5)	-7.3 to 73	0.72 to 14.5	4.35 to 36
With setting scale, screw terminal connections (2)				
1 N.C./1 N.O. single-pole, snap action contact	XMLBM02V2S13	XMLBM05A2S13	XMLB001R2S13	XMLB002A2S13
Possible differential (psi)	Min at low setting	1.88 (4)	7.3	2.32
subtract from PH to give PB	Min at high setting	1.88 (4)	7.3	3.04
	Max at high setting	11.6 (4)	87	25

XMLC



XMLD



XMLC and D



Type XMLC adjustable differential (1), regulation between 2 thresholds

(all devices shown are with setting scale)

Setting range (psi) of upper limit (PH): pressure switches	-2.03 to -14.5 (5)	-8 to 73	0.73 to 14.5	4.35 to 36
Dimensions (in.) H x W x D	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	6.89 x 4.33 x 4.33	6.22 x 2.17 x 3.54
With setting scale, screw terminal connections				
2 N.C./2 N.O. single-pole simultaneous snap action contacts	XMLCM02V2S13	XMLCM05A2S13	XMLC001R2S13	XMLC002B2S13
Possible differential (psi)	Min at low setting	1.89 (4)	6.5	0.43
subtract from PH to give PB	Min at high setting	2.03 (4)	6.5	0.58
	Max at high setting	11.6 (4)	87	11.6
				29

Type XMLD fixed differential (1), dual stage, for detection at each threshold

Setting range (psi)	2 nd stage switching point (PB2)	-1.74 to -14.5 (5)	-	1.74 to 14.5	4.93 to 36
	1 st stage switching point (PB1)	-1.45 to -14.2	-	0.58 to 13.3	2.90 to 34
	Spread between 2 stages (PB2 - PB1)	0.29 to 12.8	-	1.16 to 10.6	2.03 to 21.8
Without setting scale, screw terminal connections					
2 N.C./2 N.O. single-pole snap action contacts (1 per stage)		XMLDM02V1S13	-	XMLD001R1S13	XMLD002B1S13
Natural differential (psi)	at low setting	1.45 (3)	-	0.44	2.03
subtract from PH 1/2 to give PB 1/2	at high setting	1.45 (3)	-	1.02	2.76

vacuum switches



58 145 290 508 1015 2320 4350 7250

Degree of protection (conforming to IEC 60529): IP66
conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1

5.8 to 58	8.7 to 145	10.2 to 290	22 to 508	73 to 1015	145 to 2320	290 to 4350	435 to 7250
4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95	4.45 x 1.38 x 2.95

XMLA004A2S13 **XMLA010A2S13** **XMLA020A2S13** **XMLA035A2S13** **XMLA070D2S13** **XMLA160D2S13** **XMLA300D2S13** **XMLA500D2S13**

XMLA004A1S13 **XMLA010A1S13** **XMLA020A1S13** **XMLA035A1S13** **XMLA070D1S13** **XMLA160D1S13** **XMLA300D1S13** **XMLA500D1S13**

5.1	7.3	5.8	18.1	44	80	239	290
5.1	7.3	14.5	18.1	109	261	508	653

3.62 to 58	10.2 to 145	18.9 to 290	51 to 508	102 to 1015	145 to 2320	319 to 4350	435 to 7250
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XMLB004A2S13 **XMLB010A2S13** **XMLB020A2S13** **XMLB035A2S13** **XMLB070D2S13** **XMLB160D2S13** **XMLB300D2S13** **XMLB500D2S13**

2.9	8.3	14.5	25	68	135	281	334
3.62	12.3	23	37	128	302	537	763
35	109	160	290	725	1450	2900	4350

(1) Fluids controlled: hydraulic oils, air, fresh water, sea water, corrosive fluids, ≤508 psi: up to 70°C (158°F), from 1015 to 7250 psi: up to 160°C (320°F).

(2) For connection by DIN 43650A connector (IP65), replace the letter "S" in the reference by "C". Example: XMLB010A2S13 becomes XMLB010A2C13.

(3) For vacuum switch: natural differential to be added to PB to give PH.

(4) For vacuum switch: possible differential to be added to PB to give PH.

(5) Setting range (psi) of lower limit (PB): vacuum switch.



4.35 to 58	10.2 to 145	18.9 to 290	51 to 508	102 to 1015	174 to 2320	319 to 4350	435 to 7250
4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35	4.45 x 1.81 x 3.35

XMLC004B2S13 **XMLC010B2S13** **XMLC020B2S13** **XMLC035B2S13** **XMLC070D2S13** **XMLC160D2S13** **XMLC300D2S13** **XMLC500D2S13**

2.18	6.5	10.2	14.5	65	131	232	276
2.47	10.2	14.5	22	129	305	508	754
36	116	160	319	870	1590	3480	4930

5.8 to 58	17.4 to 145	31 to 290	64 to 508	136 to 1015	239 to 2320	522 to 4350	595 to 7250
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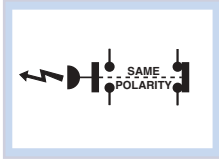
2.76 to 55	7.5 to 135	13.0 to 272	28 to 471	96 to 974	152 to 2233	363 to 4191	363 to 7018
3.05 to 32	9.9 to 84	18.0 to 138	36 to 296	41 to 667	87 to 1204	160 to 2741	232 to 3538

XMLD004B1S13 **XMLD010B1S13** **XMLD020B1S13** **XMLD035B1S13** **XMLD070D1S13** **XMLD160D1S13** **XMLD300D1S13** **XMLD500D1S13**

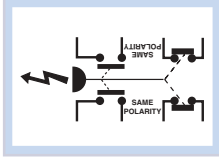
2.18	6.5	10.2	22	73	128	247	305
2.76	8.7	18.9	38	138	290	609	943

Electromechanical pressure 9012G Machine Tool

Type G Machine Tool



1 N.O./1 N.C.
single-pole,
double throw
contact,
snap action



2 N.O./2 N.C.
double-pole,
double throw
contact,
snap action



Size (psi) PB falling	3 to 150	5 to 250
Environmental characteristics	Ambient air temperature (°C / °F): -23 to +85 / -9 to +185	
Rated operational characteristics	B600	
Fluid connection	1/4" NPT female	
Electrical connection	Screw terminals	

Type GDW fixed differential, single threshold detection

Setting range (psi) of upper limit (PH): pressure switches	9 to 156	15 to 260
Dimensions (in.) H x W x D	5.93 x 3.50 x 2.63	5.93 x 3.50 x 2.63
With setting scale, screw terminal connections		
1 N.C./1 N.O. single-pole, snap action contact	GDW5	GDW6
Without setting scale, screw terminal connections		
2 N.C./2 N.O. double-pole, snap action contact	GDW25	GDW26
Natural differential (psi) at mid-range	6 ± 0.8	10 ± 1.5
subtract from PH to give PB		

Type GAW adjustable differential, regulation between 2 thresholds

Setting range (psi) of upper limit (PH): pressure switches	9 to 180	15 to 299
Screw terminal connections		
1 N.C./1 N.O. single-pole, snap action contact	GAW5	GAW6
Possible differential (psi) at mid-range	6–30 psi	10–49 psi
subtract from PH to give PB		

9012G Industrial

Type G Industrial



1 N.O./1 N.C.
single-pole,
double throw
contact



NEMA Type 1



Open Type

Size (psi) PH falling	3 to 150	3 to 150
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Type GNG, GNO adjustable differential, regulation between 2 thresholds

Setting range (psi) of upper limit (PH): pressure switches	3 to 150	3 to 150
Dimensions (in.) H x W x D	6.94 x 2.06 x 2.75	5.41 x 2.06 x 2.46
With setting scale, screw terminal connections		
1 N.C./1 N.O. single-pole, single throw	GNG5	GNO5
Possible differential (psi) at mid-range	4.2–22	4.2–22
subtract from PH to give PB		

Type GRG, GRD fixed differential, dual stage, for detection at each threshold

Screw terminal connections		
1 N.C./1 N.O. single-pole, single throw	GRG5	GRO5
Natural differential (psi) at mid-range	4.2 ± 1	4.2 ± 1
subtract from PH 1/2 to give PB 1/2		

For additional information, reference **Catalog 9012CT9701**.

Electromechanical Float Switches 9036



	General duty	Heavy duty
Environmental characteristics	Ambient air temperature (°C / °F): -30 to +105 / -22 to +220	
Rated operational characteristics	A600; for hp rating, see Catalog	
Float operated	-	
Electrical connection	Screw terminals	

Type 9036D and 9036G

Dimensions (mm / in.) H x W x D	100 x 66 x 100 / 3.97 x 2.53 x 3.93	132 x 87 x 98 / 5.20 x 3.43 x 3.87
Screw terminal connections		
Double-pole, single throw	DG2	GG2

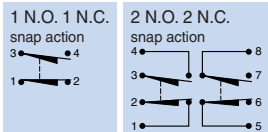
9038A



Type 9038A

Dimensions (mm / in.) H x W x D	175 x 119 x 114 / 6.88 x 4.69 x 4.50
Screw terminal connections	
2 double-pole, single throw mechanisms	9038AG1

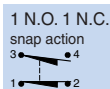
These switches will not work without a float switch kit. See Catalog for float switch kit selection.



Complete standard type

Type of operator	Side roller plunger spring return vertical roller (1)	Side push rod plunger spring return	Side push rod plunger adjustable (2) spring return	Top roller plunger spring return	Top push rod plunger spring return
Conforming to standards (Products)	UL 508, EN 60947-1, EN 60947-5-1, IEC 60947, C22-2-14-95, CE conformity documentation				
Degree of protection conforming to IEC 60529	IP 67, NEMA Type 6P				
Rated operational characteristics hard contacts (top half of body)	Single pole	AC Voltage : NEMA A600 (Ue = 600 V, Ie = 1,2 A); Ithe = 10 A DC Voltage : NEMA Q600 (Ue = 600 V, Ie = 0,1 A); Ithe = 2.5 A			
	Two poles	AC Voltage : NEMA A600 (Ue = 600 V, Ie = 1,2 A); Ithe = 10 A DC Voltage : NEMA R300 (Ue = 250 V, Ie = 0,11 A); Ithe = 1 A			
Cable entry	1/2-14 NPT standard, optional M20 x 1,5 mm for ISO cable gland				
Mounting Holes (inches/mm)	1.17x2.35 / 30 x 60				
Body dimensions (inches/mm) W x D x H	1.55x1.79x4.02 / 39 x 45 x 102				
1 N.O. 1 N.C. snap action	9007C54F	9007C54G	9007C54GD	9007C54D	9007C54E
2 N.O. 2 N.C. snap action	9007C62F	9007C62G	9007C62GD	9007C62D	9007C62E

Compact plug-in body metal type



Complete compact type

Type of operator	Side roller plunger spring return vertical roller (1)	Side push rod plunger spring return	Side push rod plunger adjustable (2) spring return	Top roller plunger spring return	Top push rod plunger spring return
Conforming to standards (Products)	UL 508, EN 60947-1, EN 60947-5-1, IEC 60947, C22-2-14-95, CE conformity documentation				
Degree of protection conforming to IEC 60529	IP 67, NEMA Type 6P				
Rated operational characteristics hard contacts (top half of body)	Single pole	AC Voltage : NEMA A600 (Ue = 600 V, Ie = 1,2 A); Ithe = 10 A DC Voltage : NEMA Q600 (Ue = 600 V, Ie = 0,1 A); Ithe = 2.5 A			
Cable entry	1/2-14 NPT standard, optional M20 x 1,5 mm for ISO cable gland				
Mounting Holes (inches/mm)	1.17x1.47 / 30 x 37				
Body dimensions (inches/mm) W x D x H	1.55x1.79x3.14 / 39 x 45 x 80				
1 N.O. 1 N.C. snap action	9007C52F	9007C52G	9007C52GD	9007C52D	9007C52E

with 1 cable entry



Standard type for adaptable sub-assemblies (1)

Top push rod plunger adjustable spring return	Wobble stick DELRIN extension (3)	Cat whisker	Wobble stick universal (3)	Standard pre-travel spring return	Low differential spring return	Maintained contact
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9007C54ED	9007C54J	9007C54L	9007C54JKC	9007C54B2	9007C54A2	9007C54C
9007C62ED	9007C62J	9007C62L	9007C62JKC	9007C62B2	9007C62A2	9007C62C

with 1 cable entry



Standard type for adaptable sub-assemblies (1)

Top push rod plunger adjustable spring return	Wobble stick DELRIN extension (3)	Cat whisker	Wobble stick universal (3)	Standard pre-travel spring return	Low differential spring return	Maintained contact
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9007C52ED	9007C52J	9007C52L	9007C52JKC	9007C52B2	9007C52A2	9007C52C
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(1) Sub-assemblies wobble stick extension and lever arm, see page 4.

(2) Can be converted to horizontal roller type in the field. To order horizontal roller version add the letter H at the end of the equivalent vertical roller version type.

(3) To lock the nut in the desired position, crimp the slot near the bottom of the nut.

Common heads for standard and compact switches

Complete heads for linear and multi-directional movements

Type of operator	Side plunger heads			
	Side roller plunger spring return vertical roller	Side push rod plunger spring return	Side push rod plunger adjustable spring return	Side push rod plunger maintained contact
Reference	9007F	9007G	9007GD	9007H

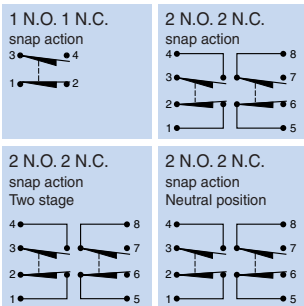
Adaptable heads for linear and multi-directional movements

Type of operator	Mushroom button for palm operated turret head				
Palm operated turret head without mushroom button	Diameter 1.38 inches (35 mm) Choose Mushroom Head Color				
	Black	Red	Green	Yellow	
Reference	9007R	2358C6G3	2358C6G2	2358C6G6	2358C6G8

Adaptable heads for rotary movements (for assembly with lever arm type)

Type of operator	Standard pre-travel spring return	Low differential spring return	Neutral position, standard pre-travel spring return	Neutral position, low differential spring return	Maintained contact
Type of direction	CW & CCW	CW & CCW	CW & CCW	CW & CCW	CW (trip) CCW (reset)
Reference	9007B	9007A	9007T10	9007T5	9007C

Sub-assembly plug-in body metal type with 1 cable entry



Standard body = base (CT..) + top (CO..)

Single pole		Two pole	
Plug-in unit (Top) with contacts	Plug-in receptacle (base) with screw terminals	Plug-in unit (Top) with contacts	Plug-in receptacle (base) with screw terminals
CT..	CO..	CT..	CO..

Cable entry	1/2-14 NPT standard, (optional M20 x 1,5 mm for ISO cable gland)			
Mounting Holes (inches/mm)	1.17x2.35 / 30 x 60			
Single pole. 1 N.O. 1 N.C. snap action	9007CT54	9007CO54	-	-
Two pole. 2 N.O. 2 N.C. snap action	-	-	9007CT62	9007CO62
Two stage. 2 N.O. 2 N.C. snap action	-	-	9007CT66	9007CO66
Neutral position 2 N.O. 2 N.C. snap action	-	-	9007CT68	9007CO68

and compact bodies

Top plunger heads

Top roller plunger spring return



9007D

Top push rod plunger spring return



9007E

Top push rod plunger adjustable spring return



9007ED

Multi-directional heads

Wobble stick DELRIN extension



9007J

Wobble stick wire extension



9007K

Wobble stick coil extension



9007KC

Cat whisker



9007L

Diameter 2.25 inches (57,2 mm) Choose Mushroom Head Color

Red



Green



Yellow



2358C22G3

2358C22G6

2358C22G8

Wobble stick extensions for the universal head

Wobble stick universal



9007JKC

Wobble stick universal



9007WJ

Wobble stick universal



9007WK

Wobble stick universal



9007WKC

Lever arms types



9007MA11



9007HA1



9007FA1



9007EA1



9007FA6



9007LA19



9007AA1



9007LA4



9007KB11



9007KA11

Compact body = base (CT..) + top (CO..)

Single pole

Plug-in unit (Top) with contacts

Plug-in receptacle (base) with screw terminals



CT..



CO..

1.17x1.47 / 30 x 37

9007CT52

9007CO52



Standard body



Compact body

The essential guide



Smart solutions for all your control system applications

A simplified selection guide to identify, at a glance, all the products you need for developing control system applications, from small, simple machines to complex installations.



Welcome to the world of Simply Smart* from Telemecanique

With Transparent Ready, Schneider Electric has applied market standards to its control 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 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.

**Simply Smart: So intelligent, it's easy to use.*

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.



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

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 program standards.

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

Contents

New



A wide range of specialized platforms...

Modicon TSX Micro, ideal for machine builders.

page 6-2

At the heart of the machine, TSX Micro offers compactness, modularity and integration benefits.

- CANopen machine bus connection
- Low-cost Ethernet connection
- Double memory capacity

New



Modicon Premium, ideal for manufacturing applications.

page 6-8

Outstanding flexibility for distributed architectures and integration of advanced control system functions.

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

New



Modicon Quantum, ideal for process applications.

page 6-16

High level of performance for process control and architecture availability.

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



Modicon Momentum M1/M1E, ideal for distributed architectures.

page 6-24

Compactness and flexibility for I/O control distribution on Ethernet.

New



Modicon Compact

page 6-28

Advantys STB, ideal for machine builders.

page 6-32

The perfect I/O integration solution.





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 modules		–	–	–	–
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	–		1 half-size	
	CANopen	–		–	
	Fipio	–		–	
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	
Catalog number	With screw terminals	TSX3705028DR1	TSX3708056DR1	TSX3710128DT1	TSX3710128DR1
	With HE 10 connector (1)	–	–	TSX3710128DTK1	–

(1) For use with Telefast 2 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	TSXMRP032P	TSXMFP032P	TSXMFPBAK032P
	32 K words/128 K words	TSXMRP232P	TSXMFP232P	–
	64 K words	TSXMRP064P	TSXMFP064P	–
	64 K words/128 K words	TSXMRP264P	TSXMFP264P	–
	128 K words	TSXMRP0128P	TSXMFP0128P	–
	128 K words/128 K words	TSXMRP2128P (4)	–	–

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

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



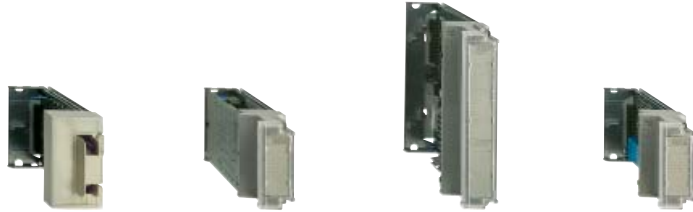
TSX 3710			TSX 3721		TSX 3722			
24 Vdc	110–240 Vac		24 Vdc	110–240 Vac		24 Vdc	110–240 Vac	
2 (1 available)			3 (3 available)		3 (3 available)			
2			2		2			
2 (32 I, 32 Q)			1 (16 I, 12 Q)		1 (8 I, 1 Q)			
–			–		–			
I: 24 Vdc, Q: sol. st. 0.1 A			I: 115 Vac, Q: relay		I: 0–10 V or 0/4–20 mA, Q: 0–10 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			
–	TSX3710028AR1	TSX3710028DR1	TSX3721101 (2)	TSX3721001 (2)	TSX3722101 (2)	TSX3722001 (2)		
TSX3710164DTK1	–	–						

Mini extension rack



Type of rack	2 slots
For use with	TSX3710/21/22
Catalog number	4 positions TSXRKZ2

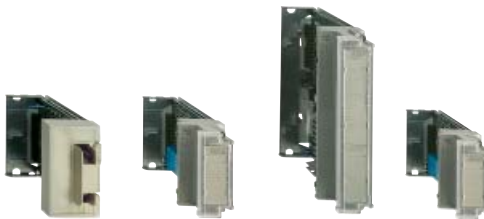
Process power supplies see page 3-9.



Type of module		Discrete inputs			
Connection		By HE 10 connector (1)		By screw terminals (2)	
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 Telefast 2 wiring system

(2) Terminal block supplied with the module



Type of module		Discrete outputs				Relay	
		Solid state					
Connection		By HE 10 conn. (1)		By screw terms. (2)			
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 Telefast 2 wiring system

(2) Terminal block supplied with the module



Type of module		Discrete I/O					
Connection		By HE 10 connector (1)			By screw terminals (2)		
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 Telefast 2 wiring system

(2) Terminal block supplied with the module

Connection accessories: See the “Modicon TSX Micro automation platform” Catalog #AUTC101272123EN

www.telemecanique.com

Analog I/O modules



Type of module	Analog inputs	
	High level with common point	High level isolated
Connection	By screw terminals (supplied)	
Number of channels	8	4
Resolution	11 bits + sign	12 bits
Input signal	± 10 V, 0–10 V	0–20 mA, 4–20 mA
Catalog number	TSXAEZ801	TSXAEZ802

(1) ± 10 V, 0–10 V, 0–5 V, 1–5 V, 0–20 mA, 4–20 mA, (Type B, E, J, K, L, N, R, S, T, U), Pt 100, Ni 1000 (2 or 4-wire), thermal probe, thermocouple



Type of module	Analog outputs	
	With common point	High level isolated
Connection	By screw terminals (supplied)	By screw terminals (supplied)
Number of channels	4	2
Resolution	11 bits + sign	11 bits + sign or 12 bits
Input signal	± 10 V, 0–10 V	± 10 V, 0–20 mA, 4–20 mA
Catalog number	TSXASZ401	TSXASZ200

PROGRAMMABLE LOGIC CONTROL

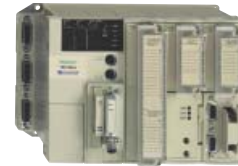


Type of module	Analog I/O Integrated	Analog I/O High level with common point
	Connection	By 15-way SUB-D connector (not supplied)
Number of inputs	8	4
Number of outputs	1	2
Resolution	8 bits	11 bits + sign or 12 bits
I/O signal	0–10 V, 0–20 mA, 4–20 mA	± 10 V, 0–10 V, 0–20 mA, 4–20 mA
Catalog number	TSX3722 (2)	TSXAMZ600

(2) Catalog numbers: see pages 6-2 and 6-3, TSX3722 basic configuration

Automation _____ Modicon TSX Micro platform

Integrated counter modules



Type of module	Counting on discrete I/O module	Integrated counting on TSX 3722
Type of inputs for	Sensors, limit switches Totem Pole incremental encoders	Sensors, limit switches Totem Pole incremental encoders
Frequency	500 Hz	10 kHz
Response time	8 ms	8 ms
Number of channels	2 (1)	2 (2)
Catalog number	TSX37 (3)	TSX3722 (3)

- (1) On the first 4 inputs of the 28, 32 or 64 discrete I/O modules
 (2) Plus 2 channels on the discrete I/O
 (3) Catalog numbers: see pages 6-2 and 6-3, TSX37 basic configuration

Counter/position control modules



Type of module	Counter			Positioning
Type of inputs for	2-wire PNP sensors 24 Vdc Totem Pole incremental encoders 5 Vdc RS 422, 10–30 Vdc			SSI or parallel absolute encoder 5 Vdc, 10–30 Vdc
Frequency	40 kHz	40 kHz	500 kHz	200 or 1000 kHz
Response time	5 ms	5 ms		5 ms
Number of channels	1	2		1
Catalog number	TSXCTZ1A	TSXCTZ2A	TSXCTZ2AA	TSXCTZ1B

Communication modules



Type of module		Ethernet TCP/IP 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	Global Data	–	–
	I/O Scanning	Yes	Yes
	TCP Open	–	–
Web server	Standard services	Yes	Yes
	FactoryCast services	–	Yes with 8 Mb of user Web pages and graphics editor
Catalog number		TSXETZ410	TSXETZ510



Type of module	Sensor bus, machine bus and fieldbus		
	AS-Interface	CANopen	Fipio
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	PCMCIA card
Speed		19.2 Kbps	1.2–19.2 Kbps
Catalog number	With interface RS 485	TSX37 (1)	TSXSCP114
	RS 232D	–	TSXSCP111
	20mA CL	–	TSXSCP112

(1) Catalog numbers: see pages 6-2 and 6-3, 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		Other networks	
		Modbus Plus	Fipway
Name and description		PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps
Catalog number		TSXMBP100	TSXFPP20

PROGRAMMABLE LOGIC CONTROL



▲ Launch 2nd half 2004

Type of processor		TSX 5700 1 rack	TSX 5710 4 racks max.	TSX 5720 16 racks max.
Number of I/O in racks	Discrete	256	512	1024
	Analog	12	24	80
Integrated process control		No	No	Yes
Application-specific channels (counter, position control, weighing)		4	8	24
Bus	AS-Interface	1	2	4
	CANopen	1 (included)	1	1
	INTERBUS, Profibus DP	–	1	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1	1
Memory capacity	Integrated	96 Kb data/prog	96 Kb data/prog	160 Kb data/prog
	With PCMCIA extension	96 Kb data/128 Kb prog.	96 Kb data/224 Kb prog.	160 Kb data/768 Kb prog.
Execution time for one instruction	Boolean	0.50 µs	0.50 µs	0.19 µs
	On word or arithmetic	0.62 µs	0.62 µs	0.25 µs
Catalog number	Without integrated port	TSXP570244M (2) ▲	TSXP57104M ▲	TSXP57204M
	Integrated Ethernet	–	TSXP571634M ▲	TSXP572634M
	Integrated Fipio	–	TSXP57154M ▲	TSXP57254M ▲

(1) The second value corresponds to the integrated memory capacity when the processor is equipped with a PCMCIA memory card

(2) Also available in “ready-to-use” version, consisting of a 6-slot non-extendable rack, a power supply module, a TSXP570244 processor and a 40kHz 4-channel counter module:

TSXP57CD024M (24 Vdc) and TSXP57CA024M (100–240 Vac)

(3) PC format card on ISA 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	512	1024
	Analog	24	80
Integrated process control		No	Yes
Application-specific channels (counter, position control, weighing)		8	24
Bus	AS-Interface	2	4
	CANopen	1 (with TSXP57103M)	1
	INTERBUS, Profibus DP	–	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1
Memory capacity	Integrated	32 K words data/prog.	48 K words data/prog. (4)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data/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

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

(5) PC format card for PCI bus.

Atrium coprocessors 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
Yes	Yes	Yes	Yes	Yes
32	64	64	24	32
8	8	8	4	8
1	1	1	1	1
3	4	5	1	3
3	4	5	2	4
192 Kb data/prog.	320/440 Kb (1) data/prog.	640/896 Kb (1) data/prog.	160 Kb data/prog.	224 Kb data/prog.
1792 Kb	440 Kb data/2048 Kb prog.	896 Kb data/7168 Kb prog.	160 Kb data/768 Kb prog.	224 Kb data/1792 Kb prog.
0.12 µs	0.06 µs	0.037 µs	0.19 µs	0.12 µs
0.17 µs	0.08 µs	0.045 µs	0.25 µs	0.17 µs
TSXP57304M	–	–	TSXPCI57204M (3)	–
TSXP573634M	TSXP574634M ▲	TSXP575634M	–	–
TSXP57354M ▲	TSXP57454M ▲	TSXP57554M ▲	–	TSXPCI57354M (3) ▲

Atrium coprocessors under PL7 software

PROGRAMMABLE
LOGIC CONTROL



TSX 5730 16 racks max.	TSX 5740 16 racks max.	PCX 5720 16 racks max.	PCX 5730 16 racks max.
1024	2040	1024	1024
128	256	80	128
Yes	Yes	Yes	Yes
32	64	24	32
8	8	4	8
1	1	1	1
2	2	1	2
3	4	1	3
64/80 K words data/prog. (4)	96 K words data/prog.	48 K words data/prog.	80 K words data/prog.
32 K words data/384 K words prog.	32 K words data/512 K words prog.	32 K words data/160 K words prog.	32 K words data/384 K words prog.
0.12 µs	0.06 µs	0.19 µs	0.12 µs
0.17 µs	0.08 µs	0.25 µs	0.17 µs
TSXP57303M	–	TPCX57203M (5)	–
TSXP573623M	–	–	–
TSXP57353M	TSXP57453M	–	TPCX57353M (5)
–	TSXP574823M	–	–

Automation Modicon Premium platform

Memory extension for Unity Pro processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM	SRAM
Memory size	128 Kb	TSXMRPP128K	TSXMFP128K	–
	224 Kb	TSXMRPP224K	TSXMFP224K	–
	384 Kb	TSXMRPP384K	–	–
	448 Kb	TSXMRPC448K (1)	–	–
	512 Kb	–	TSXMCPC512K (2)	–
	1 Mb	TSXMRPC001M (1)	–	–
	2 Mb	TSXMRPC002M (1)	TSXMCPC002M (2)	–
	3 Mb	TSXMRPC003M (1)	–	–
	7 Mb	TSXMRPC007M (1)	–	TSXMRPF008M
	8 Mb	–	–	TSXMRPF008M

- (1) The user can reserve part of the memory space for data storage (menus, production data).
 (2) These cards have an additional SRAM area for storing data (menus, production data).

Memory extension for PL7 processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM	SRAM
Memory size (3)	32 K words	TSXMRP032P	TSXMFP032P	–
	32 K words/128 K words	TSXMRP232P	TSXMFP232P	–
	64 K words	TSXMRP064P	TSXMFP064P	–
	64 K words/128 K words	TSXMRP264P	TSXMFP264P	–
	128 K words	TSXMRP0128P	TSXMFP0128P	–
	128 K words/128 K words	TSXMRP2128P (4)	–	–
	256 K words	TSXMRP0256P	–	–
	256 K words/640 K words	TSXMRP3256P (4)	–	–
	384 K words/640 K words	TSXMRP3384P	–	–
	512 K words	TSXMRP0512P (4)	–	–
	2048 K words	–	–	TSXMRPDS2048P

- (3) The 1st value corresponds to the size of the application area, the second to the size of the area for data storage (menus, production data, etc).
 (4) These cards have an additional SRAM area for storing application object symbols.

Power supply modules ⁽¹⁾



Type of power supply module for	Premium					Atrium ⁽²⁾
Input voltage	24 Vdc		110–240 Vac	100–120/200–240 Vac		24 Vdc
Output voltage	5 Vdc/24 Vdc					5 Vdc
Total useful power	30 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 page 3-9.

(2) Only for Unity coprocessors

Racks



Type of rack	Non extendable	Extendable
For configuration	1 rack	Multi-rack (16 max.)
Catalog number	–	TSXRKY4EX
	4 positions	TSXRKY6EX
	6 positions	TSXRKY8EX
	8 positions	TSXRKY12EX
	12 positions	

Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators
	–	Set of 2
Catalog number	–	TSXTLYEX
	L = 1 m (3.3 ft)	–
	L = 3 m (9.8 ft)	–
	L = 5 m (16.4 ft)	–
	L = 12 m (39.4 ft)	–
	L = 18 m (59.1 ft)	–
	L = 28 m (91.9 ft)	–
	L = 38 m (124.7 ft)	–
	L = 50 m (164 ft)	–
	L = 72 m (236.2 ft)	–
	L = 100 m (328.1 ft)	–



Type of module		Discrete inputs				
Connection		By screw terminals TSXBLY01 (1)		By HE 10 connector (2)		
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 Telefast 2 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	8	16
Output voltage/current	24 Vdc/0.5 A	TSXDSY08T2	TSXDSY16T2	–	–	–	–	–
	24 Vdc/2 A	TSXDSY08T22	–	–	–	–	–	–
	24 Vdc/0.1 A	–	–	TSXDSY32T2K	TSXDSY64T2K	–	–	–
	48 Vdc/1 A	TSXDSY08T31	–	–	–	–	–	–
	48 Vdc/0.25 A	–	TSXDSY16T3	–	–	–	–	–
	24ø–48 Vdc; 24–240 Vac/5 A	–	–	–	–	TSXDSY08R5A	–	–
	24–120 Vdc/5 A	–	–	–	–	TSXDSY08R4D	–	–
	48–240 Vac/1 A per channel	–	–	–	–	–	–	TSXDSY16S5
	48–40 Vac/2 A per channel	–	–	–	–	–	TSXDSY08S5	–

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



Type of module		Discrete I/O	
Connection		By HE 10 connector (2)	
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 Telefast 2 wiring system

Connection accessories: See the “Modicon Premium automation platform” Catalog #8000CT0302.

Analog I/O modules



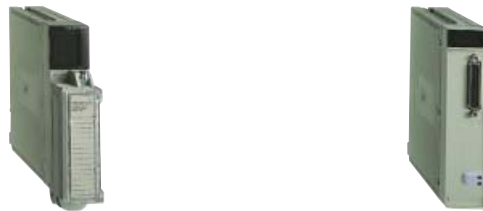
Type of module	Analog input					
	High level with common point			High level isolated	Low level isolated	
Connection	By 25-way SUB-D connector					By terminal block (1)
Number of channels	4 high-speed	8	16	8	16	4
Resolution	16 bits			12 bits	16 bits	16 bits
Catalog number	High level input (2)	TSXAEY420	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
Catalog number	Input signal (6)	TSXASY800
	TSXASY410	

(5) Terminal block to be ordered separately

(6) ± 10 V, 0–10 V, 0–20 mA, 4–20 mA.

Automation Modicon Premium platform

Counter modules



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	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



Type of module	Stepper	Servomotors (asynchronous/brushless)				(brushless)
				Infinite axes	Linear or infinite axes	
Control outputs	RS422	+/- 10V		–	Linear interpolation	SERCOS
Compatible with ranges	Twin Line	Altivar, Twin Line, Lexium		Follower axes	–	Lexium
Functions (5)	–	Linear axes		–	–	
Number of axes	2	2	4	2	3	8 (6)
Catalog number	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY33	TSXCSY84

- (5) Other functions: See the “Modicon Premium automation platform” Catalog #8000CT0302.
 (6) 8 real axes, 4 imaginary axes, 4 external setpoints/A 16-axis module is also available (real axes, imaginary axes or external setpoints) **TSXCSY164**

Weighing modules



Type of module	ISP Plus	
Load cell inputs	supplied uncalibrated	supplied calibrated and offer
Outputs	50 measurements (for 1 to 8 load cells) 2 discrete and 1 RS 485 for display unit	
Catalog number	Without display unit	TSXISPY101 (7)
	With display unit TSXXBTH100	TSXISPY111 (7)

- (7) Please consult your nearest Square D/Schneider Electric sales office.

Connection accessories: See the “Modicon Premium automation platform” Catalog #8000CT0302.

Communication modules



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	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		TSXYETY110	TSXYETY110WS	TSXP57 (1)	TSXYETY4103	TSXYETY5103	TSXWMY100

(1) Catalog numbers: see pages 6-8 and 6-9, Premium processors with integrated Ethernet TCP/IP port



Type of module		Sensor bus, machine bus and fieldbus				
		AS-Interface	CANopen	Fipio	INTERBUS	Profibus DP
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 6-8 and 6-9, 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	TSXP57 (1)	TSXSCY21601	TSXSACP114	TSXSCY11601	TSXSACP114
	RS 232D	–	–	TSXSACP111	–	TSXSACP111	TSXSACP111
	20mA CL	–	–	TSXSACP112	–	TSXSACP112	TSXSACP112

(1) Catalog numbers: see pages 6-8 and 6-9, Premium processors with integrated Ethernet TCP/IP port



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



Type of processor		Basic processor		
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.)		
	Remote/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.)		
	Remote/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	2 RS 232/RS 485	
	Modbus Plus	1 integrated, 2 in local rack		
	Ethernet TCP/IP	2 in local rack		
	Fieldbus	INTERBUS/Profibus DP: 2 in local rack	Profibus DP: 2 in local rack	
Memory capacity	Integrated	256 Kb	512 Kb	2 Mb
	With PCMCIA extension	–	–	–
	Data storage	–	–	–
Catalog number	Unity Pro	–	–	140CPU31110
	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)

Power supply modules ⁽⁴⁾



Type			Quantum power supply				
Input voltage			24 Vdc	48–60 Vdc	100–150 Vdc	120–230 Vac	115/230 Vac
Output current			8 A/3 A (5)	8 A	8 A/3 A (5)	8 A/3 A (5)	11 A
Catalog number	Type	Standalone (4)	140CPS21100	–	140CPS51100	140CPS11100	–
		Summable	140CPS21400	140CPS41400	–	–	140CPS11420
		Redundant	140CPS22400	140CPS42400	140CPS52400	140CPS12400	140CPS12420

- (4) Process power supplies see page 3-9.
 (5) The output current for the standalone power supply modules is 3 A

PCMCIA memory extension

Type of PCMCIA card for Unity processors 140CPU65/67		Application storage		Data file storage
Technology		SRAM	Flash EPROM	SRAM
Memory size	512 Kb/512 Kb (6)	–	TSXMCPC512K	–
	1 Mb (7)	TSXMRPC001M	–	–
	2 Mb (7)	TSXMRPC002M	–	–
	2 Mb/1 Mb (6)	–	TSXMCPC002M	–
	3 Mb (7)	TSXMRPC003M	–	–
	4 Mb	–	–	TSXMRPF004M
	7 Mb (7)	TSXMRPC007M	–	–
8 Mb	–	–	TSXMRPF008M	

- (6) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (menus, production data, etc)
 (7) By configuration the user can reserve part of the memory space for data storage (menus, production data, etc)



Basic processor/ moderate applications		Advanced processors		Hot Standby redundant applications
Unlimited (27 slots max.)		Unlimited (26 slots max.)		
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 RS 232/485		
1 integrated, 6 in local rack				
6 in local rack		1 integrated, 6 in local rack		6 in local rack
INTERBUS/Profibus DP: 6 in local rack		Profibus DP: 6 in local rack		
2 Mb		4 Mb		2 Mb
-				7 Mb
-				8 Mb
140CPU43412U	140CPU53414U	140CPU65150	140CPU65160	140CPU67160
140CPU43412A (3)	140CPU53414A (3)	-	-	-

Backplanes



Type	Backplane	Backplane extension (1)
Catalog number	-	140XBE10000
Numbers of slots	2 slots	140XBP00200
	3 slots	140XBP00300
	4 slots	140XBP00400
	6 slots	140XBP00600
	10 slots	140XBP01000
	16 slots	140XBP01600

(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 (3.3 ft) 140XCA71703
	L = 2 m (6.6 ft) 140XCA71706
	L = 3 m (9.8 ft) 140XCA71709

(2) Other accessories: See the "Modicon Quantum automation platform" Catalog #8000CT0301.



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 Solid state			Discrete outputs Relay	
Connection		By screw terminals 140XTS00200 (to be ordered separately)				–
Number of I/O	In	2 groups of 8		1 group of 4	–	–
	Out	2 groups of 4		4 isolated	16 N.O.	8 N.O./8 N.C.
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 the “Modicon Quantum automation platform” Catalog #8000CT0301.

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Analog I/O modules



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)	RTD Pt, Ni	Thermocouple (2)
Resolution	12 bits	0–25000 points	up to 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



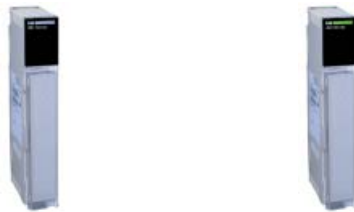
Type of module	Analog output		
Connection	By screw terminals 140XTS00200 (to be ordered separately)		
Number of channels	4	8	4
Input signal	4–20 mA	0–25/20 mA 4–20 mA	0–10 V, ± 10 V 0–5 V, ± 5 V
Resolution	12 bits	0–25000 points	12 bits
Catalog number	140ACO02000	140ACO13000	140AVO02000

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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

Automation Modicon Quantum platform Intrinsically safe I/O modules



Type of module	I/O		Analog		
	Discrete				
Connection	By screw terminal 140XTS33200 (to be ordered separately)				
Number of inputs	8	–	8	–	–
Number of outputs	–	8	–	–	8
Input signal	8 Vac no load	45 mA @ 11 Vdc max. per point	RTD Thermocouple (1)	0–25/20 mA 4–20 mA	0–25/20 mA 4–20 mA 4–200 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 counters	Incremental or quadrature	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

Motion control modules



Type of module	Servomotor	
	Single axis	Multi-axis
Control outputs	RS 422 incremental encoder	SERCOS digital link
Compatible with the ranges	Lexium	Lexium
Functions	Master/slave position capture Synchronization of master/slave axes Torque control	Point synchronization, length measurement, count probe, motion on probe input, capture catalog number, Rotary blade
Number of axes	1 real, 1 remote	With MMFStart programming kit (4)
Processor	–	66 MHz 133 MHz
Catalog number	140MSB10100	140MMS42501 140MMS53502

(4) 8 real axes, 4 imaginary axes, 4 remote axes, 4 coordinate sets, 4 follower sets, cam profiles

Connection accessories: See the “Modicon Quantum automation platform” Catalog #8000CT0301.

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Communication modules



Type of module		Ethernet TCP/IP					
Speed		10/100 Mbps					
Standard services		TCP/IP(Modbus)					
Transparent Ready	Global Data	Yes	–	–	Yes	Yes	–
	I/O Scanning	Yes	Yes	–	Yes	Yes	–
	FDR server	Yes	–	–	Yes	Yes	–
	SNMP protocol	Yes	Yes	Yes	Yes	Yes	Yes
Web server	Standard services	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	–	–	Yes	–	Yes	Yes
	FactoryCast HMI services	–	–	–	–	–	Yes
Catalog number		140CPU651 (1)	140NOE77100	140NOE77110	140NOE77101	140NOE77111	140NWM10000

(1) Catalog numbers: see pages 6-16 and 6-17, Quantum processors with integrated Ethernet TCP/IP



Type of module	Sensor bus, machine bus and fieldbus	
	Modbus Plus	AS-Interface
Name and description	Integrated link	AS-I version 1.0
Speed	1 Mbps	167 Kbps
Catalog number	140CPU (2)	140EIA92100

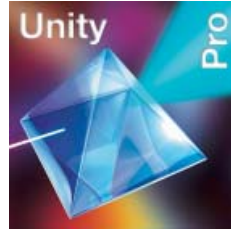
(2) Catalog numbers: see pages 6-16 and 6-17, Quantum processors with integrated Modbus Plus



Type of module	Serial link	
	Modbus	ASCII
Name and description	Integrated link	In-rack
Speed	19.2 Kbps	19.2 Kbps
Catalog number	140CPU (3) (4)	140ESI06210

(3) Catalog numbers: see pages 6-16 and 6-17, Quantum processors with integrated Modbus

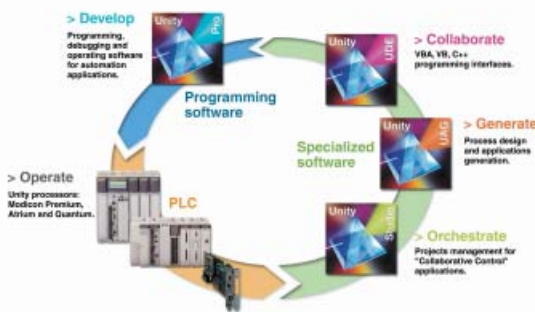
(4) RS 232/RS 485 on 140CPU651xx and 140CPU67160 processors and RS 232 on 140CPU31110, 140CPU43412A, 140CPU53414A processors.



Type of software	Unity Pro Large (L)	Unity Pro X Large (XL)
Compatibility	Premium, Atrium, Quantum	
Type of license	Single (1 station)	
Catalog number	UNYSPULFUCD10	UNYSPUEFUCD10

Other characteristics: See the "Premium and Quantum automation platform" Catalog

Unity Pro programming software to increase productivity



Unity Pro is the common programming, debugging and operating software for the Modicon 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.

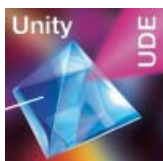
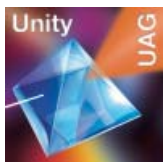
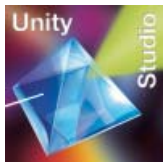
Debugging and maintenance are made simple by animated graphic objects.

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.

Specialist tools



Unity Studio has been designed to manage multi-application projects. Unity Studio is a genuine software suite incorporating Unity Pro, Power Suite for drives and motor starters, XBT-L1000 for HMI and OFS for real-time communication. It provides every application expert with an engineering platform that is open to his own development methodology. Based on the Microsoft Visio editor for describing the application, Unity Studio can be used in particular for synchronizing applications on Ethernet.

For batch/process applications, **Unity Application Generator (UAG)** is the design and generation tool for PLC and HMI integration. Based on a re-usable object approach (PID, motor, valve, etc) in accordance with standard ISA S88, UAG generates the PLC code and the elements required for the HMI system. Single entry of data ensures speed and consistency between the two systems.

Unity Developer's Edition (UDE) gives VBA, VB or C++ developers access to all the Unity Pro and Unity Studio object servers. In particular, it can be used for developing made-to-measure solutions such as the creation of interfaces with an electrical CAD system, a variables generator or PLC programs.

For additional information on Modicon Premium, reference Catalog #8000CT0302. For additional information on Modicon Quantum, reference Catalog #8000CT0301.

Programming software For Modicon TSX Micro, Premium and Atrium



PL7 is the common programming, debugging and operating software for the TSX Micro and Premium ranges of PLCs as well as Atrium coprocessors (see pages 6-2, 6-8 and 6-16).

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.

Type of software		PL7 Micro for TSX Micro platform			
Type of license version 4.4		Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
Catalog number	Software package (1)	TLXCDPL7MPPU44M	TLXCDPL7MPPC44M	TLXCD3PL7MPPU44M	TLXOTPL7MP44M
	Update (2)	TLXRC3PL7MP44M	TLXRC3PL7MPC44M	TLXRC3PL7MP44M	–
		PL7 Junior for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.4		Single (1 station)	Group (3 stations)		
Catalog number	Software package (1)	TLXCDPL7JPU44M	TLXCD3PL7JPU44M		
	Update (2)	TLXRC3PL7JP44M	TLXRC3DPL7JP44M		
	Upgrade (3)	TLXUCDPL7JP44M	TLXUCD3PL7JP44M		
		PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.4		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
Catalog number	Software package (1)	TLXCDPL7PPU44M	TLXCD3PL7PPU44M	TLXOTPL7PP44M	TLXOSPL7PP44M
	Update (2)	TLXRC3PL7PP44M	TLXRC3PL7PP44M	–	–
	Upgrade (3)	TLXUCDPL7PP44M	TLXUC3PL7PP44M	–	–

(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.

For Modicon Quantum/Momentum/Compact

Concept is the powerful IEC programming software for the Momentum, Compact 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 catalog numbers	Concept S	372SPU47101V26	–	–	–
	Concept M	372SPU47201V26	–	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26	372SPU47431V26
Update catalog numbers	Concept S (3)	372ESS47101	–	–	–
	Concept M (3)	372ESS47201	–	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ESS47410	372ESS47400

(3) From an earlier software version.

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 1.1		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)

For additional information on Modicon Premium, reference Catalog #8000CT0302. For additional information on Modicon Quantum, reference Catalog #8000CT0301



Type of module	Multibus discrete inputs			
Connection	By screw terminals 170XTS00100 or spring terminals 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)	
Catalog number	170ADI34000	170ADI35000	170ADI54050	170ADI74050



Type of module	Multibus discrete outputs						
	Solid state		Triac				
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)						
Output voltage	24 Vdc		120 Vac		230 Vac		
Number of protected channels	16 (2 common pt)	32 (2 common pts)	8 (2 common pts)	16 (2 common pts)	8 (2 common pts)	16 (2 common pts)	
Output current	Per channel	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	8 A	16 A	8 A	8 A	8 A	8 A
Catalog number	170ADO34000	170ADO35000	170ADO53050	170ADO54050	170ADO73050	170ADO74050	



Type of module	Multibus 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 point)		
	Input logic	Positive (1) Negative	Positive		-		
	Outputs	16 (2 common points)	8 (2 common pts)	12 (1x8, 1x4)	8 (2 common pts)		8 (1 common pt)
Input voltage	24 Vdc						120 Vac
Output voltage	24 Vdc			24–230 Vac/20–115 Vdc		120 Vac	
Output current	Per output	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	16 A	6 A	16 A	4 A	
Catalog number	170ADM35010	170ADM35015	170ADM37010	170ADM39010	170ADM39030	170ARM37030	170ADM69051

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

Connection accessories: See the "Modicon Momentum automation platform" Catalog #AUTC101272123EN.

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Analog I/O modules



Type of module	Multibus 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
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	Multibus analog outputs		Analog I/O and multibus 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	$\pm 10\text{ V}$, 0–20 mA	$\pm 10\text{ V}$, 4–20 mA	$\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ mA}$, 1–5 V, 4–20 mA	0–10 V	$\pm 10\text{ V}$
Output signal	–	–	$\pm 10\text{ V}$, 4–20 mA	0–10 V	$\pm 10\text{ V}$
Resolution	12 bits + sign	–	12–14 bits dep. on signal	14 bits	14 bits
Catalog number	170AAO12000	170AAO92100	170AMM09000	170ANR12090	170ANR12091

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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
Catalog number	170AEC92000	170ADM54080



Type of module	Ethernet TCP/IP		Sensor bus, machine bus and fieldbus		
			Fipio	INTERBUS (1)	Profibus DP
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, with optical fiber catalog number: **170INT12000**



Type of module	Other networks Modbus Plus		DeviceNet
Speed	1 Mbps		0.5 Mbps
Manager PLC	Premium or Quantum	Quantum	–
Redundancy	No	Yes	No
Standard services	–		–
Catalog number	170PNT11020	70PNT16020	170LNT71000

Optional modules



Type of module	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

Connection accessories

Type	RS 232C communication cable		
Length	1 m (3.3')	3 m (9.8')	6 m (19.7')
Catalog number	110XCA28201	110XCA28202	110XCA28203

Other connection accessories: See the "Modicon Momentum automation platform" Catalog #AUTC101272123EN.

Processors



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
	Ethernet TCP/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	171CCS78010

(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 words				
Integrated communication ports	Modbus	1 RS 232C	1 RS 485		–	
	Ethernet TCP/IP	–		1 integrated Ethernet port		
	I/O bus (1)	1 I/O port	–		1 I/O port	
Transparent Ready	Embedded Web server	–		Standard services		
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

PROGRAMMABLE LOGIC CONTROL

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
Catalog number	170CPS11100

(4) Process power supplies see page 3-9.

For additional information, reference Catalog #AUTC101272123EN.



Type of processor		80386 32 bit			
Number of I/O		512 words (256 in/256 out)	1024 words (512 in/512 out)	512 words (256 in/256 out)	512 words (256 in/256 out)
Integrated communication ports	Modbus	2	2	2	–
	Modbus Plus	1	1	–	1
	PCMCIA II slot	1	1	–	–
Memory capacity	RAM	512 Kb	1 Mb	512 Kb	512 Kb
	Flash	1 Mb	1 Mb	1 Mb	1 Mb
	User, 984 LL language (1)	16 K words	32 K words	16 K words	8 K words
	User, IEC language (2)	220 Kb	620 Kb	220 Kb	220 Kb
	Data	48 K words	96 K words	48 K words	24 K words
Cycle time		1 Kbit instructions 0.36 ms			
Catalog number	Standard	PCE984275	PCE984285	PCE984258	PCE984265
	With conformal coating	PCE984275C	PCE984285C	PCE984258C	PCE984265C
	Railroad standard EN50.155	–	–	PCE984258R	–

(1) ProWORX 32 or Concept programming software.

(2) Concept programming software.

Backplanes

Type of backplane		Primary	Secondary	
Number of slots		2 CPU, 3 I/O	5 I/O	2 I/O
Catalog number	Standard	ASHDTA200	ASHDTA201	ASHDTA202
	With conformal coating	ASHDTA200C	ASHDTA201C	ASHDTA202C

Power supply module



Type of power supply module for		Modicon Compact 984			
Input voltage range		95–253 Vac	105–150 Vdc	90–264 Vac, 8.5–13.8 Vdc	90–264 Vac, 8.5–13.8 Vdc
Output voltage		24 Vdc (±5%)			
Output current (continuous)		0–1.0 A	0.1–1.5 A	0.1–2.0 A	0.1–2.0 A
Catalog number	Standard	ASP120000	ASP120125	ASPRTU252	ASPRTU258
	With conformal coating	–	–	ASPRTU252C	ASPRTU258C

Analog I/O modules

Type of module		Analog inputs						
Number of channels (1)		4 two-pole inputs		2 two-pole inputs	4 four-pole RTDs or 8 two-pole voltage sensors			
Input signal		± 10 Vdc ± 20 mA	± 1 Vdc, ± 10 Vdc 0–1 Vdc, 0–10 Vdc ± 20 mA, 0–20 mA	± 5 Vdc, ± 10 Vdc 0–5 Vdc, 0–10 Vdc ± 20 mA	± 0.5 Vdc linear ± 0.99 Vdc nonlinear	$\pm 0.5, \pm 1, \pm 5, \pm 10$ Vdc 0–0.5, 0–1, 0–5, 0–10 Vdc	± 0.5 Vdc linear ± 0.99 Vdc nonlinear	
Resolution		12 bits + sign	11 bits + sign	15 bits + sign	12 bits + sign	15 bits + sign	–	
Catalog number		Standard	ASBADU205	ASBADU206	ASBADU210	ASBADU204	ASBADU214	–
		Standard	–	ASBADU256	–	–	–	ASBADU254
		With conformal coating	–	ASBADU256C	–	–	–	ASBDAP254C

For 4 four-pole RTDs or 8 thermocouples, reference Catalog #**ASBADU257/257C**.



Type of module		Analog output				
Number of channels		2	2 x 2	8	2	
Output voltage		+10 Vdc	+1, +5, +10 Vdc	± 10 Vdc	+10 Vdc	
Resolution		11 bits + sign	12 bits + sign	11 bits + sign	11 bits + sign	
Catalog number		Standard	ASBDAU202	ASBDAU204	ASBDAU208	ASBDAU252
		With conformal coating	–	–	–	ASBDAU252C

PROGRAMMABLE
LOGIC CONTROL

Type of module		Intelligent and specialty						
Number of channels		4	5 discrete in 1 discrete out 1 analog out		4 frequency in 4 process in 4 semiconductor in	- counter input - enable inputs 2 relay outputs	4 4 4	
Frequency/counter		0–10 kHz	–	–	5–50kHz	500 kHz	10 kHz	
Motion control		–	Encoder	Resolver	–	–	–	
Counter/positioner		–	–	–	–	–	–	
Catalog number		Standard	ASBVRC200	ASBMOT201	ASBMOT202	ASBFRQ204	ASBZAE201	ASBZAE204
		Standard	ASBCTR224	–	–	–	–	

Automation Modicon Compact 984

Discrete I/O modules

Type of module		Discrete inputs					
Input voltage		12–60 Vdc true high	5 Vdc TTL true low sink	24 Vdc true high	24 Vdc true low sink	110 Vdc ±40%	24 Vdc true high
Number of inputs		2 groups of 8					1 group of 16
Catalog number	Standard	ASBDEP214	ASBDEP215	ASBDEP216	ASBDEP217	–	ASBDEO216
	Standard	ASBDEP254	–	–	–	ASBDEP257	–
	With conformal coating	ASBDEP254C	–	–	–	ASBDEP257C	–

Type of module		Discrete outputs						
Output voltage		24 Vdc true high	5–24Vdc true low sink	24–150 Vdc, 24–250 Vac		24–230 Vac true high		24–250 Vac, 24–154 Vdc
Number of outputs		2x8 transistors	2x8 transistors	4x1 relay	8x1 relay	2x4 triacs	2x8 triacs	1x8 relays
Catalog number	Standard	ASBDAO216	ASBDAP217	ASBDAP204	ASBDAP208	ASBDAP210	ASBDAP218	ASBDAP258
	Standard	ASBDAP216N	–	–	–	–	–	–
	With conformal coating	–	–	–	–	–	–	ASBDAP258C

Type of module		Discrete combined input/output					
Input voltage		120 Vac	24 Vdc true high	60 Vdc true high	24 Vdc true high		66–154 Vdc true high
Output voltage		120 Vac, -15% +10%	24–110 Vdc 24–250 Vac	20–30 Vdc true high	24–110 Vdc 24–250 Vac		24–154 Vdc 24–250 Vac
Number of inputs		4	1 group of 8				
Number of outputs		4	1 group of 4 relays		1x8 transistors	1 group of 4 relays	
Catalog number	Standard	ASBDAP211	ASBDAP212	ASBDAP292	ASBDAP220	–	–
	Standard	–	–	–	ASBDAP250	ASBDAP252	ASBDAP253
	With conformal coating	–	–	–	ASBDAP250C	ASBDAP252C	ASBDAP253C

PROGRAMMABLE
LOGIC CONTROL

	48 Vdc true high	60 Vdc true high	230 Vac true high	115 Vac true high		
	2 groups of 8		1 group of 8		8 groups of 1	2 groups of 8
	ASBDEP297	ASBDEP296	ASBDEP208	ASBDEP210	ASBDEP211	ASBDEP218
	-	-	-	-	-	-
	-	-	-	-	-	-

Automation Advantys STB distributed I/O Communication modules



Type of module	Ethernet TCP/IP	
Binary speed	10 Mbps	
Protocol	Modbus TCP/IP	
Transparent Ready	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	
Catalog number	STBNIP2212	

▲ Launch 3rd quarter 2004



Type of module	CANopen		Fipio	INTERBUS	Profibus DP
Max. number of addressable I/O modules	32 per island	20 per island	32 per island	32 per island	32 per island
Binary speed	20 K–1 Mbps	20 K–800 Kbps	1 Mbps	0.5 Mbps	9.6 K–12 Mbps
Catalog number	STBNCO2212	STBNCO1113 ▲	STBNFP2212	STBNIB2212	STBNDP2212



Type of module	Modbus Plus	DeviceNet
Max. number of addressable I/O modules	32 per island	32 per island
Speed	1 Mbps	125, 250 or 500 Kbps
Catalog number	STBNMP2212	STBNND2212

Connection accessories

Type of accessory	Removable terminals for 24 Vdc power supply		DeviceNet
Use	All modules		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 the "Advantys STB distributed I/O" Catalog #DIA6EC203901EN.

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Power distribution modules ⁽¹⁾



Type of module		Power Distribution Modules (PDM)	
Connection by removable terminals		Screw STBXTS1130 (2) Spring STBXTS2130 (2)	
Supply voltage		24 Vdc	115–230 Vac
Maximum current	Inputs	4 A at 30°C (86°F), 2.5 A at 60°C (140°F)	5 A at 30°C (86°F), 2.5 A at 60°C (140°F)
	Outputs	8 A at 30°C (86°F), 5 A at 60°C (140°F)	10 A at 30°C (86°F), 2.5 A at 60°C (140°F)
Sensor/actuator bus voltage range		19.2–30 Vdc	85–265 Vac
Catalog number	Module	STBPDT3100	STBPDT2100
	Base	STBXBA2200	STBXBA2200

(1) Process power supplies see page 3-9.

(2) To be ordered separately, sold in lots of 10.

Bus extension modules



▲ Launch 2nd quarter 2004

Type of module		End of Segment Module (EOS)	End of Segment Module (BOS)	Connection to CANopen 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
Catalog number	Module	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 user license	–
Memory size	–	32 Kb
Catalog number	STBSPU1000	STBXMP4440

Connection accessories

Type of accessory	Island bus extension cable				
Length	0.3 m (1')	1 m (3.3')	4.5 m (14.8')	10 m (32.8')	14 m (45.9')
Catalog number	STBXCA1001	STBXCA1002	STBXCA1003	STBXCA1004	STBXCA1006

Connection accessories: See the "Advantys STB distributed I/O" Catalog #DIA6EC203901EN.



Type of module		Discrete inputs				
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)			Screw STBXTS1110 (1) Spring STBXTS2110 (1)	
Number of channels		2	4	6	2	
Input voltage		24 Vdc			115 Vac	230 Vac
Catalog number	Module	STBDDI3230	STBDDI3420	STBDDI3610	STBDAI5230	STBDAI7220
	Base	STBXBA1000			STBXBA2000	

(1) To be ordered separately, sold in lots of 20.



Type of module		Discrete solid state outputs			
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)			
Number of channels		2	4	6	
Output voltage		24 Vdc	24 Vdc	24 Vdc	
Output current		0.5 A	2 A	0.5 A	0.5 A
Catalog number	Module	STBDDO3200	STBDDO3230	STBDDO3410	STBDDO3600
	Base	STBXBA1000			

(1) To be ordered separately, sold in lots of 20.



Type of module		Discrete outputs		
		Triac	Relay	
Connection by removable terminals		Screw STBXTS1110 (1) Spring STBXTS2110 (1)		
Number of channels		2	2 N.C./2 N.O.	2 N.C.+ 2 N.O.
Output voltage		115–230 Vac	24 Vdc or 115–230 Vac	
Output current		2 A at 30°C (86°F), 1 A at 60°C (140°F)	2 A per contact	7 A per contact
Catalog number	Module	STBDAO8210	STBDR3210	STBDRA3290
	Base	STBXBA2000		STBXBA3000

(1) To be ordered separately, sold in lots of 20.

Analog I/O modules



Type of module		Analog inputs		
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)		
Number of channels		2		
Input signal		-10 – +10 V	0–20 mA	Multi-range (2)
Resolution		11 bits + sign	12 bits	15 bits + sign
Catalog number	Module	STBAVI1270	STBACI1230	STBART0200
	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		Analog outputs		
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)		
Number of channels		2		
Output signal		-0 – +10 V, -10 – +10 V	0–20 mA	
Resolution		11 bits + sign or 12 bits	12 bits	
Catalog number	Module	STBAVO1250	STBACO1210	
	Base	STBXBA1000		

(1) To be ordered separately, sold in lots of 20.

PROGRAMMABLE LOGIC CONTROL

Application-specific modules



Type of module		For motor starters		Counter (1)
		Tego Power	TeSys model U	
Connection by connector		1 HE10	4 RJ45	Spring STBXTS2150 (2)
Number of inputs		16	12	4
Number of outputs		8	8	2
Input voltage		24 Vdc		24 Vdc
Output voltage/current		24 Vdc/0.1 A per channel		24 Vdc/0.5 A
Number of channels		–		1 counter channel 40 kHz
Catalog number	Module	STBEP1145	STBEP12145	STBEHC3020
	Base	STBXBA2000		
Connection cables		STBXCA3002 (L= 1 m [3.3 ft])	490NTW00002 (L= 2 m [6.6 ft])	–
		STBXCA3003 (L= 2 m [6.6 ft])	490NTW00005 (L= 5 m [16.4 ft])	–

(1) For 2/3-wire PNP/NPN 24 Vdc sensors, 24 Vdc incremental encoders, mechanical contacts

(2) To be ordered separately

Connection accessories: See the “Advantys STB distributed I/O” Catalog #DIA6EC203901EN.

Automation systems at

Simply Smart*

Welcome to the Simply Smart* world, compliments of Telemecanique

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

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

Ingenious, the software range simplifies the design of your HMI (Human Machine Interfaces) applications.

Take advantage of these new Telemecanique product offers that are **open** to new information and communication technologies. Used in conjunction with other Telemecanique equipment, they ensure an optimal solution for the operation of your automation systems.

***Simply Smart:**
*using ingenuity and intelligence
to continually improve ease of use.*



Hardware range

Robust and simple

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

Due to its reduced size and high performance, this range meets the needs of machine manufacturers, system integrators and users. Other features include easy installation, set-up, and openness to Web technologies using the Ethernet Transparent Ready architecture.



your beck and call



Software range

Ingenuity and user-friendliness

To benefit from perfect interoperability, select Telemecanique software.



- XBTL1001/L1003 configuration software for display units and terminals.
- Vijeo Designer, multi-platform software which operates on the new graphic terminals in the Magelis range.
- Vijeo Look, supervision software specifically for small and medium size applications.
- Monitor Pro, supervision software for distributed architectures, providing complete mastery of your production management.
- The FactoryCast HMI Web server executes the following functions at the source: data acquisition, real-time databases, storage, alarm management and E-mail services, as well as monitoring your installation via animated Web pages.

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Human/Machine Interfaces

The essential guide

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



Type		Compact display units		
Display	Capacity	2 lines, 20 characters	4 lines, 20 characters	
	Type	Back-lit LCD, green	Back-lit LCD, green	Back-lit LCD, 3 colors: green, orange, red
Data entry		Via keypad with 8 keys (4 with changeable legends)		
Functions	Representation of variables	Alphanumeric	Alphanumeric	Alphanumeric
Communication	Downloadable protocols	Uni-Telway, Modbus	Uni-Telway, Modbus	Uni-Telway, Modbus
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
Dimensions W x D x H	mm	132 x 78 x 74		132 x 104 x 74
	in.	5.20 x 3.07 x 2.91		5.20 x 4.09 x 2.91
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		Twido, Nano, TSX Micro, Premium, TSX series 7, Momentum, Quantum
Supply voltage		5 Vdc	5 Vdc	24 Vdc, external
Catalog numbers		XBTL200	XBTL400	XBTL401

With matrix screen



Type		Multilingual display units		
Display	Capacity	8 lines, 40 characters		
	Type	Back-lit LCD, monochrome		
Data entry	Function / service keys	-	4 / 1	- / 5
Functions	Representation of variables	Alphanumeric, bargraph, gauge		
Communication	Downloadable protocols	Multiple (Uni-Telway, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs)		
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
Dimensions W x D x H (mm / in.)		202 x 64.8 x 111.3 / 7.95 x 2.55 x 4.38		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
Supply voltage		24 Vdc		
Without printer link, without log		XBTHM007010	XBTHM027010	XBTHM017010
With printer link, with log		-	-	XBTHM017110

Terminals

With alphanumeric screen

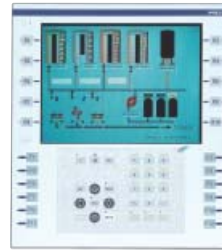


Type		2 line multilingual alphanumeric terminals			
Display	Capacity	2 lines, 20 characters			
	Type	Fluorescent matrix, green		Back-lit LCD, green	
Data entry	Function / service keys	8 / 9	12 / 10	8 / 9	12 / 10
	Numeric keys	–	12	–	12
Functions	Representation of variables	Alphanumeric			
Communication	Downloadable protocols	Multiple (Uni-Telway, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs)			
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)			
Dimensions W x D x H (mm / in.)		253 x 62.5 x 152 / 9.96 x 2.46 x 5.98			
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		Twido, Nano, TSX Micro, Premium, Quantum	
Supply voltage		24 Vdc		24 Vdc	
Without printer link, without log		XBTP012010	XBTP022010	XBTP011010	XBTP021010
With printer link, with log		–	XBTP022110	–	XBTP021110

With matrix screen



Type		8 line multilingual matrix screen terminals			
Display	Capacity	8 lines, 40 characters			
	Type	Back-lit LCD, monochrome			
Data entry	Function / service keys	12 / 10			
	Numeric / soft function keys	12 / 4			
Functions	Representation of variables	Alphanumeric, bargraph, gauge			
Communication	Downloadable protocols	Multiple (Uni-Telway, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs)			
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)			
Dimensions W x D x H (mm / in.)		253 x 62.5 x 155 / 9.96 x 2.46 x 6.10			
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium			
Supply voltage		24 Vdc			
Without printer link, without log		XBTPM027010			
With printer link, with log		XBTPM027110			



Type		Terminals with keypad	
Display	Screen size	5.7"	10.4"
	Type	Back-lit monochrome LCD, green 16 levels of gray	TFT, 256 colors
Data entry	Soft function keys with LED	8	10
	Static function keys with LED	10 + legends	12 + legends
	Service keys	12	12
Functions	Alphanumeric keys	12 + 3 alphanumeric access	
	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, potentiometer, selector	
	Menus	125 records maximum with 5000 values maximum	
	Curves	16	16
	Alarm logs	Yes	Yes
Communication	Downloadable protocols	Uni-Telway, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs	
	Bus and networks	Fipway, Modbus Plus with PCMCIA card (except XBTF011110)	
Development software		XBTL1003 (on Windows 98, 2000 and XP)	
Dimensions W x D x H (mm / in.)		220.3 x 88 x 265 / 8.67 x 3.46 x 10.43	296 x 91 x 332 / 11.65 x 3.58 x 13.07
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum	
RJ45 Ethernet 10/100 TCP/IP connector		no	no yes
Supply voltage		24 Vdc	24 Vdc
Catalog numbers		XBTF011110 / F011310	XBTF024510 XBTF024610

With touchscreen



Type		Terminals with touchscreen	
Display	Screen size	5.7"	10.4"
	Type	LCD STN, 256 colors	LCD TFT, 256 colors
Data entry		Touchscreen	Touchscreen
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, potentiometer, selector	
	Menus	125 records maximum with 5000 values maximum	
	Curves	16	16
	Alarm logs	Yes	Yes
Communication	Downloadable protocols	Uni-Telway, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs	
	Bus and networks	Fipway, Modbus Plus with PCMCIA card (except XBTF032110)	
Development software		XBTL1003 (on Windows 98, 2000 and XP)	
Dimensions W x D x H (mm / in.)		197 x 92.6 x 147 / 7.76 x 3.65 x 5.79	296 x 91 x 222 / 11.65 x 3.58 x 8.74
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum	
RJ45 Ethernet 10/100 TCP/IP connector		no	no yes
Supply voltage		24 Vdc	24 Vdc
Catalog numbers		XBTF032110 / F032310	XBTF034510 XBTF034610

Graphic terminals open to NTIC

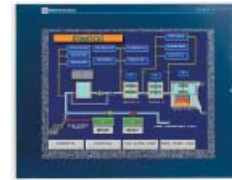
(New Technology for Information and Communication)

With 5.7" touchscreen



Type		Optimum	Multifunction			
Display	LCD screen size	5.7"	5.7"	5.7"	5.7"	5.7"
	Type	Back-lit STN monochrome, blue	Back-lit STN, monochrome black and white	STN, color 64 colors	TFT, color 256 colors (1)	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad				
	Curves	yes, with log	yes, with log	yes, with log		
	Alarm logs	yes, incorporated	yes, incorporated	yes, incorporated		
Communication	Downloadable protocols	Uni-Telway, Modbus	Uni-Telway, Modbus	Uni-Telway, Modbus, Modbus TCP/IP	Uni-Telway, Modbus	Uni-Telway, Modbus, Modbus TCP/IP
	Bus and networks	–	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45
Development software		Vijeo Designer VJDSPULFUCDV10M (on Windows 2000 and XP)				
Dimensions W x D x H	mm	207 x 58 x 157	171 x 60 x 138	132 x 74 x 78		
	in.	8.15 x 2.28 x 6.18	6.73 x 2.36 x 5.43	5.20 x 2.91 x 3.07		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum				
Built-in Ethernet 10/100 TCP/IP		no	no	yes	no	yes
Supply voltage		24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Catalog numbers		XBTG2110	XBTG2120	XBTG2130	XBTG2220	XBTG2330

With 7.4", 10.4" or 12.1" touchscreen



Type		Multifunction				
Display	LCD screen size	7.4"	10.4"	10.4"	12.1"	
	Type	TFT, color 256 colors (1)	STN, color 64 colors	TFT, color 256 colors (1)	TFT, color 256 colors (1)	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad				
	Curves	yes, with log	yes, with log			yes, with log
	Alarm logs	yes, incorporated	yes, incorporated			yes, incorporated
Communication	Downloadable protocols	Uni-Telway, Modbus	Uni-Telway, Modbus, Modbus TCP/IP	Uni-Telway, Modbus, Modbus TCP/IP	Uni-Telway, Modbus, Modbus TCP/IP	
	Bus and networks	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45			
Development software		Vijeo Designer VJDSPULFUCDV10M (on Windows 2000 and XP)				
Dimensions W x D x H (mm / in.)		215 x 60 x 170 / 8.46 x 2.36 x 6.69		317 x 58 x 243 / 12.48 x 2.28 x 5.43		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum				
"Compact Flash" card slot		yes	yes	yes	yes	yes
Built-in Ethernet 10/100 TCP/IP		no	yes	yes	yes	yes
Supply voltage		24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Catalog numbers		XBTG4320	XBTG4330	XBTG5230	XBTG5330	XBTG6330

(1) 64 colors if in flash mode.

HUMAN MACHINE INTERFACE



Connection cables	PC to Magelis transfer cables (2.5 m / 8.2 ft)		
Application	PC to all XBTN200 and N400	PC to all XBT except XBTN200, N400 and XBTG	PC to XBTG
Type of connector	RJ45 / MiniDin + SUB D 9	SUB D 9 / SUB D 25	SUB D 9 / MiniDin
Physical link	RS 232C	RS 232C	TTL
Catalog numbers	XBTZ945	XBTZ915	XBTZG915

Connection cables	Telemecanique PLC connection cables (2.5 m / 8.2 ft)			
Application	XBTN200, N400 to Twido, Nano, TSX Micro, Premium	all XBT (except XBTN200, N400) to Twido, Nano, TSX Micro, Premium	Quantum	Momentum (port 1)
Type of connector	MiniDin / SUB D 25	RJ45 / MiniDin	SUB D 9 / SUB D 25	RJ45 / SUB D 25
Physical link	RS 485	RS 485	RS 232	RS 232
Catalog numbers	XBTZ968	XBTZ978	XBTZ9710	XBTZ9711



Network cards	PCMCIA type III card	
Compatibility	XBTF	XBTF
Protocol	Modbus Plus	Fipway
Catalog numbers	TSXMMP100	TSXFPP20



Memory cards	PCMCIA type II card	"Compact Flash" card	
Compatibility	XBTF	XBTG (except XBTG2110)	
Capacity	16 Mb	16 Mb	32 Mb
Catalog numbers	XBTMEM16	XBTZGM16	XBTZGM32



▲ Launch 3rd quarter 2004

Type		Smart <i>i</i> PC	Compact <i>i</i> PC	
Display	Size	15" active matrix XGA (1024 x 768)		
	Type	Back-lit active matrix TFT color LCD (262,144 colors)		
Data entry		Via touchscreen	Via touchscreen	
Processor	Type	VIA	VIA	Intel Pentium 4 Mobile
	Frequency	667 MHz	667 MHz	1.7 GHz
Internal hard disk		–	≥ 20 Gb IDE, 2 1/2"	
RAM memory		128 Mb expandable up to 512 Mb	256 Mb expandable up to 512 Mb (1 memory slot max.)	
CD-ROM drive		–	Yes, 24X	
Expansion slots		2 PCMCIA slots	1 PCI bus slot, 2 PCMCIA slots,	
		–	1 Compact Flash slot	
Ethernet TCP/IP network		1 x 10 BASE-T/100 BASE-TX (RJ45)		
Operating system		Windows XPe integrated	Windows 2000 pre-installed	
Input/output ports		2 x USB, 1 x COM1, 1 x COM2,	2 x USB, 1 x COM1, 1 x COM2,	
		1 x LPT1 (parallel), 1 x PS/2 keyboard	1 x LPT1 (parallel), 1 x PS/2 keyboard and 1 x PS/2 mouse	
	on front panel	–	1 x USB	
Mounting hardware		Mounting hardware included with each product for mounting on panel or enclosure door		
Dimensions W x D x H (mm / in.)		395 x 62 x 294 / 15.55 x 2.44 x 11.57	395 x 100 x 294 / 15.55 x 3.94 x 11.57	
Supply voltage		24 Vdc	115–230 Vac	
Catalog numbers		MPCST52NDJ00T	MPCKT52NAA00N	MPCKT55NAA00N ▲

Combined offers (bundle packs)

Magelis Compact *i*PC can be supplied with software packages.
Specifications identical to standard industrial PCs shown above.

Type		Compact <i>i</i> PC		
Processor	Type	VIA	Intel Pentium 4M	
Applications		Vijeo Look	Vijeo Look	
Pre-installed software		Vijeo Look 2.5 RT1024	Vijeo Look 2.5 RT1024	Vijeo Look 2.5 BT1024
Catalog numbers		MPCKT52NAA00A	MPCKT55NAA00A ▲	MPCKT55NAA00B ▲

Accessories

Compact Flash card	
Capacity	512 Mb (empty) for Smart <i>i</i> PC or Compact <i>i</i> PC
Catalog numbers	MPCYN00CFE00N

RAM memory expansion	
Capacity	512 Mb SO DIMM for VIA
Catalog numbers	MPCYK02RAM512
	512 Mb SO DIMM for Pentium 4 Mobile
Catalog numbers	MPCYK05RAM512



Type		12" front panel screen		
Display	Size	12" active matrix SVGA (800 x 600)		
	Type	Back-lit active matrix TFT color LCD (262,144 colors)		
Data entry		Via keyboard	Via keyboard and touchscreen	Via touchscreen
	Keyboard	70 standard IBM keys + 2 x 10 user function keys		-
Dimensions W x D x H (mm / in.)		410 x 52.7 x 330 / 16.14 x 2.07 x 12.99		380 x 52.7x 330 / 14.96 x 2.07 x 12.99
Input/Output ports on front panel		1 x IrDA infrared and 1 x PS/2 keyboard/mouse		
Required hardware		1 central unit Control box or 1 central unit Control box pack (combined offer)		
Mounting hardware		Mounting hardware included with each screen for mounting on panel or enclosure door		
Supply voltage		115–230 Vac from Control box unit		
Catalog numbers		MPCNA20NNN00N	MPCNB20NNN00N	MPCNT20NNN00N



Type		15" front panel screen		
Display	Size	15" active matrix XGA (1024 x 768)		
	Type	Back-lit active matrix TFT color LCD (262,144 colors)		
Data entry		Via keyboard	Via keyboard and touchscreen	Via touchscreen
	Keyboard	70 standard IBM keys + 2 x 10 user function keys		-
Dimensions W x D x H		480 x 52.7 x 370 / 18.90 x 2.07 x 14.57		460 x 52.7x 340 / 18.90 x 2.07 x 13.39
Input/Output ports on front panel		1 x IrDA infrared and 1 x PS/2 keyboard/mouse		
Required hardware		1 central unit Control box or 1 central unit Control box pack (combined offer)		
Mounting hardware		Mounting hardware included with each screen for mounting on panel or enclosure door		
Supply voltage		115–230 Vac from Control box unit		
Catalog numbers		MPCNA50NNN00N	MPCNB50NNN00N	MPCNT50NNN00N

Modular industrial PCs

Modular i PC range



Central unit Control box type		Small	Medium		Large	
Processor	Type	Intel Celeron	Intel Celeron	Intel Pentium III	Intel Celeron	Intel Pentium III
	Frequency	566 MHz	566 MHz	850 MHz	566 MHz	850 MHz
Internal hard disk	≥ 20 Gb IDE, 2 1/2"					
RAM memory	128 Mb SDRAM expandable up to 512 Mb (2 memory slots max.)					
CD-ROM drive	Optional		Yes, removable 24X			
Expansion slots	–		3 slots (1 ISA bus, 1 PCI bus and 1 ISA/PCI bus)		6 slots (2 ISA bus, 3 PCI bus and 1 ISA/PCI bus)	
Ethernet TCP/IP network	1 x 10 BASE-T/100 BASE-TX (RJ45)					
Bus and networks	–		With additional card on ISA or PCI bus: Modbus/Uni-Telway/Fipio bus, Modbus Plus/Fipway networks, INTERBUS-S/Profibus DP/CANopen Third party bus			
Video card	built-in	PCI 64 bit controller, 2 Mb RAM				
Operating system	Windows 2000 pre-installed					
Input/output ports	2 x USB, 1 x COM1, 1 x COM4 and 1 x LPT1 (parallel) 1 x external VGA video screen, 1 x PS/2 keyboard (1) and 1 x PS/2 pointing device (1)					
Required hardware	1 front panel screen or as a stand-alone (2)					
Mounting hardware	Mounting hardware included with each screen for mounting on panel or enclosure door					
Dimensions W x D x H	mm	310 x 310 x 94.2	310 x 310 x 184.5		310 x 310 x 258	
	in.	12.20 x 12.20 x 3.71	12.20 x 12.20 x 7.26		12.20 x 12.20 x 10.16	
115–230 Vac supply voltage		MPCAN02NAA00N	MPCBN02NAA00N	MPCBN05NAA00N	MPCCN02NAA00N	MPCCN05NAA00N
24 Vdc supply voltage		MPCAN02NDA00N	MPCBN02NDA00N	MPCBN05NDA00N	MPCCN02NDA00N	MPCCN05NDA00N

(1) Port not operational when the central unit Control box is used with the front panel screen.

(2) To use the Control box without a front panel screen, mounting panel **MPCNP00NNN00N** is required.

Combined offers (bundle packs)

Magelis i PC central unit Control boxes (115–230 Vac supply) can be supplied with software packages.

Specifications identical to standard Control box units shown above.

Central unit Control box type		Small	Medium		
Processor	Type	Intel Celeron, 566 MHz	Intel Celeron, 566 MHz		
Pre-installed software	Pack A "Monitoring RT"	Vijeo Look, 1024 I/O Run Time	Vijeo Look supervision, 1024 I/O Run Time		
	Pack B "Monitoring BT/RT"	–	Vijeo Look supervision, 1024 I/O Build Time/Run Time		
Pack A, 115–230 Vac supply voltage		MPCAN02NAA00A	MPCBN02NAA00A		
Pack B, 115–230 Vac supply voltage		–	MPCBN02NAA00B		

Accessories



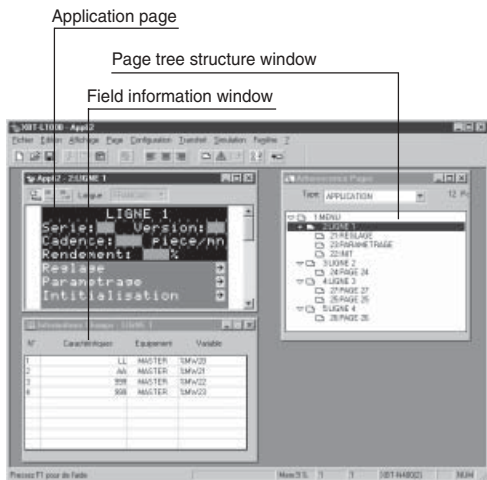
Separate components				
Description	External LCD flat screen, flush mounting		Swivel arm for external screen	Qwerty keyboard 101 keys, PS/2
	12" SVGA (800 x 600)	15" XGA (1024 x 768)		
Catalog numbers	–	–	MPCYN00ARM00N	MPCYN00KBD00N
	115–230 Vac supply voltage	MPCYS20NAN00N	MPCYS50NAN00N	–
	24 Vdc supply voltage	MPCYS20NDN00N	MPCYS50NDN00N	–

Separate components for Control box					
Description	SDRAM memory expansion			CD-ROM drive for Small Control box	
	64 Mb	128 Mb	256 Mb	MPCAN0	
Catalog numbers	MPCYN00RAM064	MPCYN00RAM128	MPCYN00RAM256	MPCYN00CDR00N	



Type	Configuration software	
Compatibility	All XBT except XBTG	XBTG
Operating system	Windows 98, 2000 and XP	Windows 2000 and XP
Version (1)	Light (not for XBTF)	Complete
Catalog numbers for PC CD-ROM	XBTL1001M	XBTL1003M
Catalog numbers for CD-ROM update	-	XBTLUP1004

(1) Demonstration version available, XBTL1001M / L1003M demo: XBTL1003DEMO, Vijeo Designer demo: VJDSPULTUCDV10M



XBTL1001 / L1003 for Magelis display units and terminals

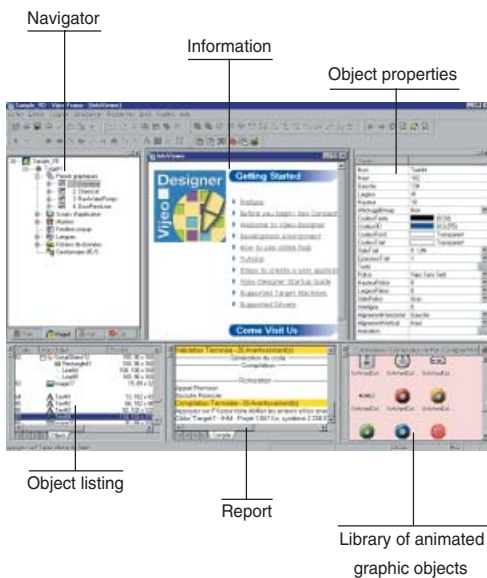
The XBTL1001/L1003 configuration software can be used to create operator dialogue applications designed for controlling automation systems for:

- all XBTN/H/HM display units, XBTP/PM/E terminals with software XBTL1001,
- all XBTN/H/HM display units, XBTP/PM/E and F terminals with software XBTL1003.

Applications created using the XBTL1001/L1003 software are independent to the protocol used. The same operator dialogue application can be used with PLCs available from the principal manufacturers.

Configuration

The XBTL1001/L1003 configuration software enables simple creation of various types of pages: application pages (can be interlinked), alarm pages, help pages, menu pages, etc.



Vijeo Designer for Magelis touchscreen graphic terminals XBTG

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

Configuration

The Vijeo Designer configuration software enables operator dialogue projects to be easily and quickly performed due to advanced ergonomics using 6 configurable windows.

Vijeo Designer configuration software also offers complete application management tools:

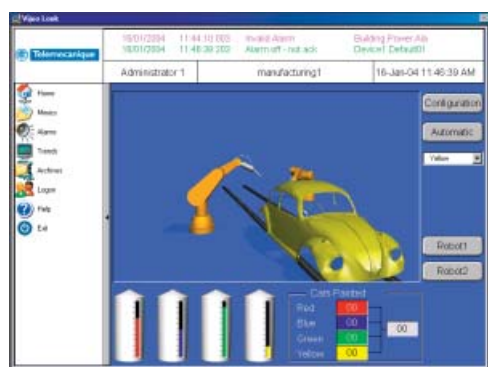
- Project creation, a project being one or several applications.
- Cross-referencing of application variables.
- Application synoptics documentation.
- A simulation mode for easy testing of the application from the design office.
- Alarming, trending and data logging

Powerful graphics editor for easy creation of synoptics.
8 types of object animation for animated synoptics.



Type	Control software	
Compatibility	All Telemecanique PLCs and Third party PLCs	
Operating system	Windows 2000 and XP	
Input/Output size	1024 I/O	
Version	Build Time/Run Time	Run Time
Catalog numbers for PC CD-ROM	VJLSMDBTLV25M	VJLSMDRTLTV25M

Vijeo Look for industrial PCs



Presentation

Vijeo Look 2.5 is a SCADA (Supervisory Control And Data Acquisition) software package designed for stand-alone stations, that offers perfect synergy between the Web and HMI (Human Machine Interface). It is based on open and standardized technologies.

Easy to implement, it offers all the standard functions of a graphic supervision tool.

Vijeo Look is supplied with a pre-configured OFS (OPC Factory Server) Data Server. It is compatible with PCs running Windows 2000 Professional or Windows XP Professional and enables the creation of applications based on all Telemecanique new and old generation PLCs.

The functions of Vijeo Look control software can be used for:

- Acquisition of PLC tags.
- Visualization of these tags.
- Process supervision and control.
- Recording the values of the PLC tags or internal tags of the process in a database.
- Embedded software processing.

The Inputs/Outputs are tags from the OPC Server (or those of the Inputs/Outputs of TSX Micro/Premium PLCs exchanged automatically). They are used for visualization and embedded processing.

Simple and innovative, Vijeo Look offers optimal solutions.

Structure of the offer

2 types of software license are available for Vijeo Look:

- Build Time/Run Time for application development and execution.
- Run Time for the execution of applications created with a Build Time/Run Time license.

Monitor Pro Supervision software



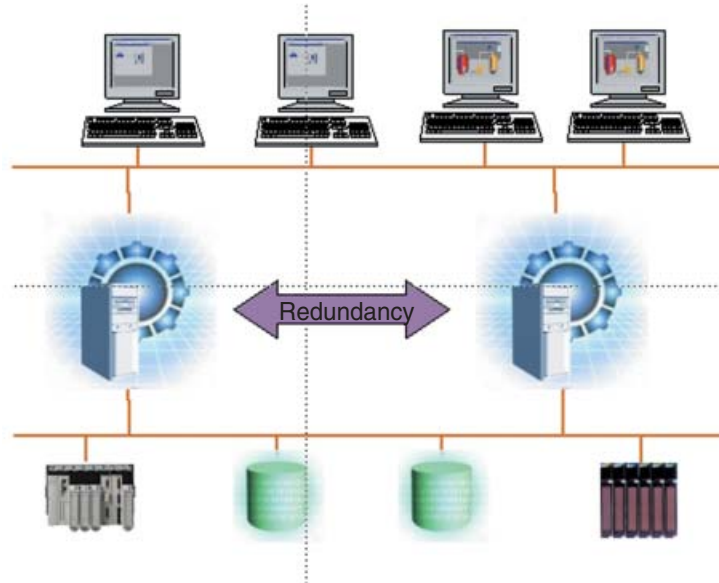
Type	Supervision software
Compatibility	All Telemecanique PLCs and other PLCs on the market via communication drivers or using the standard OPC
Operating system	Windows 2000 service Pack 3 and Windows XP
Input/Output size	11 sizes comprising 300 I/Os to unlimited I/Os (4800 tags to unlimited)
Versions	Development (Build Time/Run Time) and Execution (Run Time)
Catalog numbers for PC CD-ROM	Please contact your nearest Square D/Schneider Electric sales office

Multi-level architecture

Monitor Pro
Clients development and
execution stations

Monitor Pro
Development servers stations

Data/information

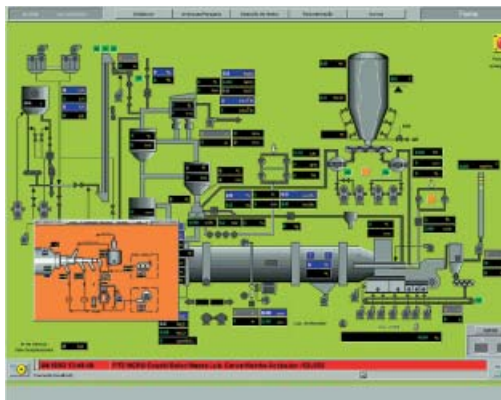


Description

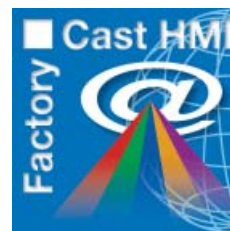
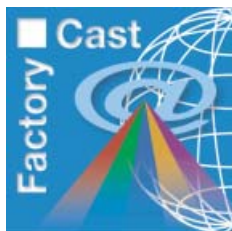
Monitor Pro V7.2 is a SCADA (Supervisory Control And Data Acquisition) software solution. Its real-time high performance server offers excellent processing capability, mainly due to the application objects. In addition, its client-server architecture enables it to easily adapt to the topology of your application: multi-server for sharing the processing, multi-user for a wide distribution of information or in redundancy mode for your "high availability" applications.

- **The graphic interface** offers a library of graphic objects. Based on Windows technology, they can easily be customised.
- **The Configuration Explorer**: an intuitive environment for configuration of the real-time data server that also enables object orientated configuration.
- **Relational databases access interface**, supplied with SQL Server 2000. Monitor Pro V7.2 easily enables recording of the production data or access to the stored information. Monitor Pro V7.2 also operates with Oracle, Sybase, Dbase IV and databases supporting the ODBC standard.
- **Improved availability**: Monitor Pro incorporates redundancy services ensuring a high level of architecture availability.
- **Integrated traceability functions**, for real-time monitoring of the quality of your production as well as logging all the actions of the operators.
- **Net client**, for remote monitoring.

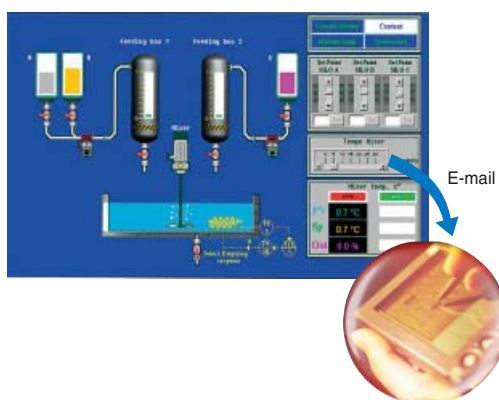
Monitor Pro V7.2 is the supervision software that adapts to your needs. It offers you real-time monitoring of production and enables you to optimise the operation of your equipment.



FactoryCast _____ Embedded Web servers



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 numbers for multilingual PC CD-ROM	Included with FactoryCast modules	TLXCDFCHMIV1M



FactoryCast

Remote diagnostic functions using simple Internet browser

- Secure access to the diagnostics system and application
- Numerical or graphical display and adjustment of data
- Customizable web pages and diagnostics

FactoryCast HMI

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

- Real-time database and acquisition of PLC data (1000 variables)
 - Calculation and data manipulation capability
 - Advanced alarm management with e-mail
 - Archiving of data in relational databases (SQL, Oracle, MySQL)
- (Available on Telemecanique Quantum and Premium PLCs)

FactoryCast Web server modules



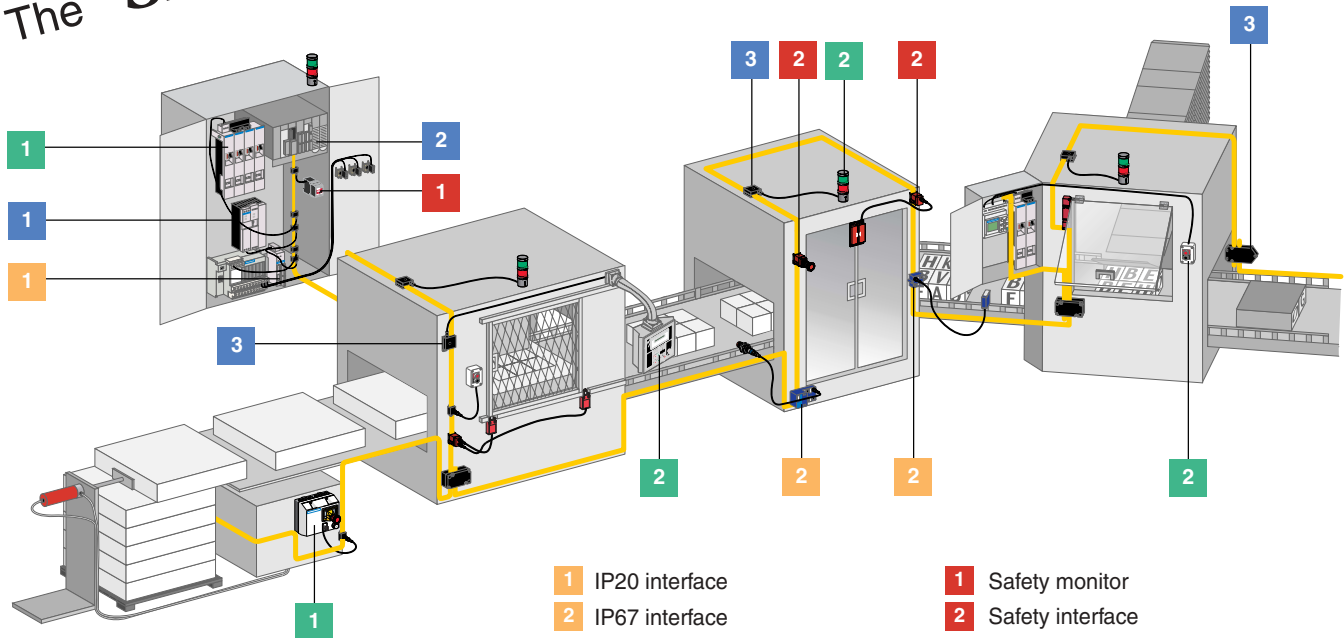
Automation platform		TSX Micro		Premium		Quantum	
Data rate		10/100 Mbit/s		10 Mbit/s		10/100 Mbit/s	
Ethernet services	Modbus TCP/IP Protocol	Yes	Yes	Yes	Yes	Yes	Yes
	Uni-TE TCP/IP Protocol	Yes	Yes	Yes	–	–	–
	Ethway Protocol	–	Yes	–	–	–	–
	Global Data	–	–	Yes	–	Yes	–
	I/O Scanning	–	–	Yes	–	Yes	–
Embedded Web server	Standard Web services	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast HMI services	–	–	–	Yes	–	Yes
Catalog numbers		TSXETZ510	TSXETY110WS	TSXETY5103	TSXWMY100	140NOE77111	140NWM10000

AS-Interface

(Actuator Sensor Interface)

The cabling system that meets your needs for industrial Automation System Integration

The “Smart Cable”



- 1 IP20 interface
- 2 IP67 interface

- 1 Safety monitor
- 2 Safety interface

- 1 Dedicated control components
- 2 Dedicated dialogue components

- 1 Power supply units and earth fault detection
- 2 AS-Interface master
- 3 Connection components

AS-Interface The essential guide

A simplified selection guide enabling you to quickly select all the necessary products and accessories to build your installation.

The required information is detailed in product selection tables.

(See page 8-12 for guidelines to using the tables)

AS-Interface cabling system

Contents

Interfaces for generic products _____ 8-2

These IP20 or IP67 interfaces allow most standard automation components to be connected to the AS-Interface cable.

IP20 interfaces



IP67 interfaces



Dedicated components _____ 8-4

These inputs & actuators can be connected directly to the AS-Interface cable. An integrated circuit (ASIC) built into the products manages all interfacing functions and communication.

For control



For dialogue



Safety solutions _____ 8-6

The incorporation of safety functions in the AS-Interface system is achieved by adding a safety monitor and a safety interface, connected together with other standard AS-Interface components on the same yellow cable.

Safety monitors



Safety interfaces



Installation system _____ 8-8

Sensors and actuators are connected to the processing unit by the AS-Interface system. This system comprises a cable and accessories, a master module and a power supply unit.

Master modules, power supply units



Cables, repeaters



Accessories



Tools _____ 8-11

The terminals enable the assigning of an address to each interface and component in the system and diagnostics of the installation.

Adjustment and addressing terminals



AS-Interface

Interfaces for generic products IP20 for mounting in enclosure



Modular interface, width 25 mm (0.98") V2.1	Analog		Digital			
	Number of inputs	2 (0 to 10 V)	2 (0/4 to 20 mA)	4	4	4 (1)
Number of outputs	–	–	–	4 relay, 2A	4 solid st., 0.5A	1 triac, 2A
Type of addressing	Standard	Standard	Extended (A/B)	Standard	Standard	Extended (A/B)
Supply by AS-Interface	Inputs and sensor supply (200 mA max.)					
Supply by 24 Vdc external source (black AUX cable)	–	–	–	–	Outputs	–
AS-Interface profile	7.3.F.D	7.3.F.D	0.A.7.0	7.0.F.E	7.0.F.E	3.A.7.0
Maximum consumption from AS-Interface (excluding sensor supply)	60 mA	60 mA	85 mA	130 mA	80 mA	110 mA
Dimensions W x D x H (mm / in.)	25 x 70 x 87 / 0.98 x 2.76 x 3.43					
Catalog numbers	ASI20MA2VU	ASI20MA2VI	ASI20MT4IE	ASI20MT4I4OR	ASI20MT4I4OS	ASI20MT2I1OTE
Accessory (2) for connection to flat cables	XZCG0122	XZCG0122	XZCG0122	XZCG0122	ASIDCPFIL20	XZCG0122

(1) For 4 isolated inputs (sensors supplied from external source), add the letter **A** to the end of the reference. Example: ASI20MT4I4OS becomes **ASI20MT4I4OSA**.

(2) Or direct screw terminal connection (without accessory), (other accessories, see page 8-9).



Interface for control and signalling units V1	For 2 control units and 2 pilot lights
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	3.F
Maximum consumption from AS-Interface	80 mA
Dimensions W x D x H (mm / in.)	52 x 15 x 38 / 2.05 x 0.59 x 1.50
Catalog number	XALSZ1

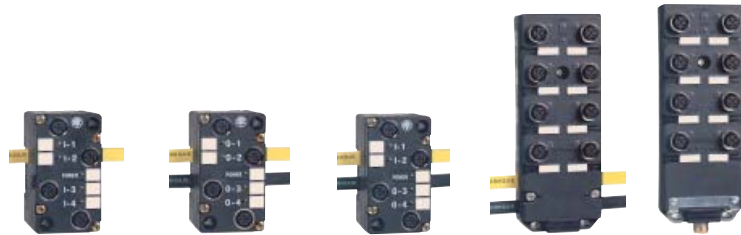
Direct screw terminal connection to AS-Interface or by accessory for flat cable: **XZCG0122**, (other accessories, see page 8-9).

IP67 for mounting on machine



Modular interface, M12 connector inputs / outputs V2.1		Connection to AS-Interface and external supply (AUX) by IDC					
Number of inputs		4	4	–	2	2	4
Number of outputs		–	–	4 solid state, 2A	2 solid state, 2A	2 solid state, 2A	4 solid state, 2A
Type of addressing		Standard	Extended (A/B)	Standard	Standard	Extended (A/B)	Standard
Supply by AS-Interface		Inputs and sensor supply (200 mA max.)					
Supply by 24 Vdc external source (black AUX cable)		–	–	Outputs	Outputs	Outputs	Outputs
AS-Interface profile		0.0.FE	0.A.7.0	8.0.FE	3.0.FE	B.A.7.0	7.0.FE
Maximum consumption from AS-Interface (excluding sensor supply)		58 mA	58 mA	34 mA	48 mA	48 mA	72 mA
Dimensions W x D x H (mm / in.)		60 x 48 x 106 / 2.36 x 1.89 x 4.17					60x48x156 / 2.36 x1.89x6.14
Catalog number (5)	Interface	ASIME4I	ASIME4IE	ASIME4O	ASIME2I2O	ASIME2I2OE	ASIME4I4O
	Connection base	ASIB4VM12	ASIB4VM12	ASIB4VM12	ASIB4VM12	ASIB4VM12	ASIB8VM12

(5) To obtain a complete product, order the interface and its connection base. (Example: ASIME4I + ASIB4VM12).



Compact interface, M12 connector inputs / outputs V1		Connection to AS-Interface and external supply (AUX)				
		by IDC (Insulation Displacement Connector)			by male M12	
Number of inputs		4	–	2	4	4
Number of outputs		–	4 solid state, 2 A	2 solid state, 2 A	4 solid state, 2 A	4 solid state, 2 A
Type of addressing		Standard	Standard	Standard	Standard	Standard
Supply by AS-Interface		Inputs and sensor supply (200 mA max.)				
Supply by external source (AUX)		–	Outputs	Outputs	Outputs	Outputs
AS-Interface profile		0.0	8.0	3.0	7.0	7.0
Maximum consumption from AS-Interface (excluding sensor supply)		45 mA	30 mA	35 mA	60 mA	60 mA
Dimensions W x D x H (mm / in.)		45 x 47 x 80 / 1.77 x 1.85 x 3.15			60 x 28 x 152 / 2.36 x 1.10 x 5.98	
Catalog number (8)	Interface	XZSDA40D3	XZSDA04D32	XZSDA22D32	XZSCA44D21	XZSCA44D22
	Connection base for AS-Interface & AUX	XZSDE1113	XZSDE1133	XZSDE1133	Integrated in the interface	
Recommended accessory for connection to AS-Interface cable & AUX		–	–	–	–	ASIDCPM12D20

(8) To obtain a complete product, order the interface and its connection base. (Example: XZSDA40D3 + XZSDE1113), except for interfaces with integrated connection base.

AS-Interface

Dedicated components For control



Starter in metal enclosure		Control by	
V1		Black rotary knob (blue background)	Pushbuttons
Type of addressing		Standard	Standard
Supply by AS-Interface		Inputs, sensor supply (1)	
Supply by 24 Vdc external source (black AUX cable)		(1)	(1)
AS-Interface profile		7.D	7.D
Maximum consumption from AS-Interface		120 mA	120 mA
Dimensions W x D x H (mm / in.)		175 x 175 x 195 / 6.89 x 6.89 x 7.68	175 x 175 x 195 / 6.89 x 6.89 x 7.68
Catalog number (2) (see table below)	Non reversing	LF1MP●●DU	LF1MM●●DU
	Reversing	LF2MP●●DU	LF2MM●●DU

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 reference, replace ●● by the numbers indicated in the table below. (Example: LF1MP●●D becomes LF1MP00D).

kW	Hp	A	●●	kW	Hp	A	●●
–	–	without MCB	00	0.75	1.5	1.6 to 2.5	07
0.06	–	0.16 to 0.25	02	1.1 / 1.5	3	2.5 to 4	08
0.09	–	0.25 to 0.40	03	2.2	5	4 to 6.3	10
0.12 / 0.18	–	0.40 to 0.63	04	3 / 4	5	6 to 10	14
0.25	0.5	0.63 to 1	05	5.5	10	9 to 14	16
0.37 / 0.55	1	1 to 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.

Hp= three phase horsepower at 575 Vac.



Communication interface for	TeSys model U V2.1
Type of addressing	Standard
Supply by AS-Interface	–
Supply by external source (AUX)	Coil
AS-Interface profile	7.D.F.0
Maximum consumption from AS-Interface	30 mA/30 mA
Dimensions W x D x H (mm / in.)	depending on LU model
Catalog number	ASILUFC5
Recommended accessory for connection to AS-Interface cable (3)	ASIDCPFIL20

(3) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 8-9).

For dialogue



Keypads and Control stations V1	Control stations with 2 pushbuttons	
	Black and white	Illuminated
Type of addressing	Standard	Standard
Supply by AS-Interface	Buttons	Buttons and pilot lights
Supply by external source (AUX)	–	–
AS-Interface profile	3.F	3.F
Consumption from AS-Interface	< 40 mA	< 80 mA
Dimensions W x D x H mm / (in.)	68 x 62 x 128 / 2.68 x 2.44 x 5.04	68 x 68 x 128 / 2.68 x 2.68 x 5.04
Catalog number	XALS2001	XALS2003
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).



Indicator banks, Ø 70 mm (7) V1	Base units and cover		Illuminated units			Audible unit
			"Flash" discharge tube	Steady light		
Type of addressing	Standard	Standard	–	–	–	–
Connection to AS-Interface cable and AUX (male M12 connector)	yes	yes, remote L=1m	–	–	–	–
Supply by AS-Interface	(5)	(5)	–	–	–	–
Supply by external source (AUX)	(5)	(5)	–	–	–	–
AS-Interface profile	8.F	8.F	–	–	–	–
Consumption from AS-Interface, supply by AS-Interface / external	250 / 30 mA	250 / 30 mA	–	–	–	–
Light source	–	–	5 Joule	10 Joule	LED	–
Buzzer	–	–	–	–	–	70 to 80 db at 1m
Catalog number	XVBC21A	XVBC21B	XVBC6B● (6)	XVBC8B● (6)	XVBC2B● (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.

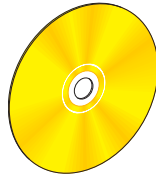
(6) To complete the reference, replace the ● by the following number designating the colour: green: 3, red: 4 orange: 5, blue: 6, clear: 7, yellow: 8

(7) To obtain a complete indicator bank, order a base unit + the illuminated or audible units (5 units maximum).



Safety monitors V2.1		Category 4 conforming to EN954-1	
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
AS-Interface profile		7.F	7.F
AS-Interface compatibility		V1 / V2	V1 / V2
Dimensions W x D x H (mm / in.)		45 x 120 x 104 / 1.77 x 4.72 x 4.09	45 x 120 x 104 / 1.77 x 4.72 x 4.09
Catalog number		ASISAFEMON1 (1)	ASISAFEMON2 (1)

(1) User guide **ASISMONDOCA** (EN/FR/DE) or **ASISMONDOCB** (ES/IT/PT), to be ordered separately.
Direct screw terminal connection to AS-Interface or by accessory for flat cable **XZCG0122**.



Setting-up software	EN / FR / DE	ES / IT / PT
Media	CD-ROM PC	CD-ROM PC
Environment	Windows	Windows
Catalog number	ASISWIN	ASISWINB



Accessories	Cable for monitor parametering RS 232	Cable for monitor to monitor transfer
Degree of protection	IP20	IP20
Cable length	2 m (6.6')	0.2 m (7.87")
Catalog number	ASISPCP	ASISCM

Safety interfaces



Interface for Ø 22 Emergency stop V2.1	Metal XB4 range	Plastic XB5 range
Type of addressing	Standard	Standard
Supply by AS-Interface	Emergency stop	Emergency stop
AS-Interface profile	0.B.0	0.B.0
Consumption from AS-Interface	45 mA	45 mA
Degree of protection	IP20	IP20
Dimensions W x D x H (mm / in.)	40 x 46.5 x 68 / 1.57 x 1.83 x 2.68	40 x 40 x 64 / 1.57 x 1.57 x 2.52
Reference with N.C. + N.C. contact (head not included with interface)	ASISSLB4	ASISSLB5
Reference of head (Ø 40 latching mushroom head, turn to release)	ZB4BS844 (2)	ZB5AS844 (2)

(2) For references of other heads, refer to the "Preventa safety solutions" catalogue.



Interface for other safety products V2.1	2 x M12 entries (3)	1 x M12 entry	1 x ISO M16 entry (4)
Type of addressing	Standard	Standard	Standard
Supply by AS-Interface	Inputs and sensor supply (200 mA max.)		
AS-Interface profile	0.B.0	0.B.0	0.B.0
Consumption from AS-Interface	45 mA	45 mA	45 mA
Degree of protection	IP67	IP67	IP67
Dimensions W x D x H (mm / in.)	40 x 40 x 58 / 1.57 x 1.57 x 2.28	40 x 40 x 58 / 1.57 x 1.57 x 2.28	40 x 40 x 58 / 1.57 x 1.57 x 2.28
Catalog number	ASISSLC2	ASISSLC1	ASISLLS

(3) For connection using 2 pre-wired connectors, or 1 pre-wired connector + 1 connector.

(4) For 1 x ISO M20 entry, include adaptor **DE9RI2016** (sold in lots of 5).

Connection accessories, see pages 8-9 and 8-10

AS-Interface _____ Installation system Master modules



Platform	Twido	Premium	Micro	Quantum
Maximum number of master modules per PLC (2)	2	2, 4 or 8 depending on processor	1	8 (1)
Compatibility with AS-Interface interfaces and components	V1/V2	V1/V2	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 analogue interfaces	Yes	Yes	–	–
Compatibility with safety interfaces	Yes	Yes	Yes	Yes
AS-Interface profile		M.2.E	M2	M2
Catalog number	TWDNOI10M3	TSXSAY1000	TSXSAZ10	140EIA92100

(1) 4 per local rack, 4 per remote I/O, 2 per distributed I/O.

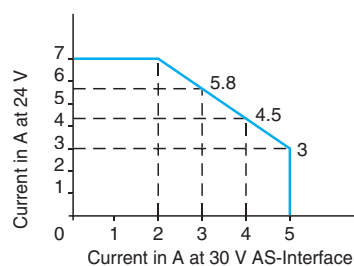
(2) See Twido section of catalog TWDNOI10M3.

Power supply units



Type of supply	AS-Interface		AS-Interface + Auxiliary	
Input voltage	100 to 240 Vac	100 to 240 Vac	100 to 240 Vac	100 to 120, 200 to 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 (3)
AUX nominal current	–	–	3 A	7 A (3)
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block
Dimensions W x D x H (in.)	2.13 x 4.72 x 4.72	3.19 x 4.72 x 4.72	3.19 x 4.72 x 4.72	8.86 x 5.31 x 5.96
Catalog number	without earth fault detection	ASIABLB3002	ASIABLB3004	ASIABLM3024
	with earth fault detection	ASIABLD3002	ASIABLD3004	TSXSUPA05

(3) Power supply unit with constant maximum output, see curve above.



Cables and repeater



Type	Yellow AS-Interface cable	Black Auxiliary cable	Repeater (4)
Wire c.s.a.	2 x 1.5 mm ² (16 AWG)	2 x 1.5 mm ² (16 AWG)	–
Catalog number	Cable L = 20 m (66')	XZCB10201 (3)	XZCB10202 (3)
	L = 50 m (164')	XZCB10501 (3)	XZCB10502 (3)
	L = 100 m (328')	XZCB11001 (3)	XZCB11002 (3)
Catalog number of repeater	–	–	XZMA1

(3) Standard cable. For TPE cable (oil and vapour resistant) add the letter **H** to the end of the reference, 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.

IP67 tap-offs for flat cable

(For connecting interfaces and components)



Connection to cable by IDC	AS-Interface	AS-Interface + Auxiliary
Cable extremity	M12 connector (5) Bared wires (6)	M12 connector (5) Bared wires (7)
Reference catalog number	Cable L = 0.3 m (1')	– ASIDCPM12D03
	L = 0.6 m (2')	XZCG01205D –
	L = 1 m (3.3')	XZCG0121D –
	L = 2 m (6.6')	– XZCG0122
	L = 5 m (16.4')	– –
		ASIDCPM12D20 ASIDCPFIL20
		– ASIDCPFIL50

(5) Female 5-pin M12 end connector, screw threaded for connection with M12 male connector.

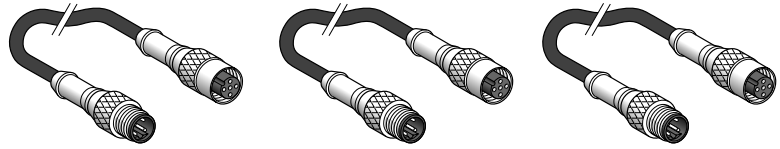
(6) 2 x 0.34 mm² (22 AWG) for product with terminal block.

(7) 4 x 0.34 mm² (22 AWG) for product with terminal block.



Connection to cable by IDC	AS-Interface + Auxiliary	AS-Interface	2 AS-Interface or 2 Auxiliary
Tap-off	4 x M12 connectors 5-pin female, screw threaded	1 x M12 connector 5-pin female, screw threaded	1 flat cable
Catalog number	Tap-off	XZSDP40D1 (8)	XZCG0120
	IDC connection base	XZSDE1133	–
	Cover	–	–
			XZSDE1113 XZSDP (8)

(8) For the complete product, include the connection base.



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
Reference	Cable L = 1 m (3.3')	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
catalog number	L = 2 m (6.6')	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

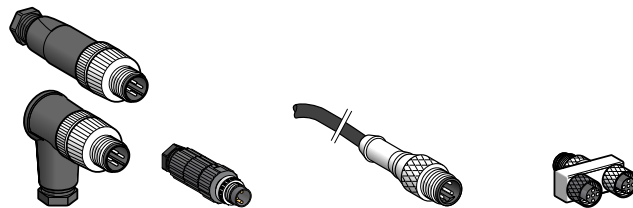
M12 / M8 or DIN jumper leads



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
Reference	Cable L = 1 m (3.3')	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
catalog number	L = 2 m (6.6')	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

(1) Clip together connector.

Connectors, splitter box



Type		Connectors		Pre-wired connectors	Splitter box
Male connector type, interface side		M12, 4-pin	M8, 3-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	XZCC8MDM30V	–	XZLC1220C1
	Elbowed connector, screw thread.	XZCC12MCM40B	–	–	–
	Cable L = 0.5 m (1.6')	–	–	XZCP1564L05	–
	Cable L = 2 m (6.6')	–	–	XZCP1564L2	–

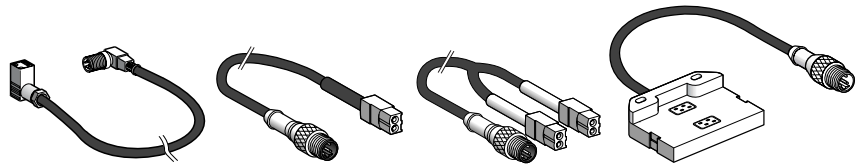
Tools

Adjustment and addressing terminals



Display	25 mm (.98") LCD screen	13 mm (.51") 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 scrolling menu
Compatibility	V1/V2	V1/V2
Typical battery life	2500 addressing operations	250 read/write operations
Catalog number	ASITERV2	XZMC11
Reference with set of 7 leads + protective cover for terminal	ASITERV2SET	-

Addressing accessories for terminals ASITERV2 and XZMC11



Product connection	Infrared addressing	Socket	Specific connection base
For products	ASISSL... / ASI20M... / ASIME /	ABE8 to / APP1 / ASILUF to / XBZS43 / ASI20M / VW3 / XBLC	XZSCA44D21
Catalog number	ASITERIR1	XZMG12	XZMG13



Product connection	M12, male	M12, female	Jack plug	Specific connection base (2)
For products	(3)	XVB... / XAL... / LF... XZSCA44D22	XZSD...	XZSD...
Catalog number	ASITERACC1M	ASITERACC1F	ASITERACC2	ASITERACC3

(2) For use with ASITERACC2.

(3) For connection to AS-Interface cable using T connector XZCG0120.

Usage guidelines

Selection tables



1	Modular interface, width 25 mm (.98")	Analog		Digital
2	V2.1			
3	Number of inputs	2 (0 to 10V)	2 (0/4 to 20mA)	4
4	Number of outputs	–	–	–
5	Type of addressing	Standard	Standard	Extended (A/B)
6	Supply by AS-Interface	Inputs and sensor supply (200 mA max.)		
7	Supply by 24 Vdc external source (black AUX cable)	–	–	–
8	AS-Interface profile	7.3.F.D	7.3.F.D	0.A.7.0
9	Maximum consumption from AS-Interface (excluding sensor supply)	60 mA	60 mA	85 mA
10	Dimensions W x D x H (mm / in.)	25x70x87 mm	25x70x87 mm	25x70x87 mm
11	Catalog number	ASI20MA2VU	ASI20MA2VI	ASI20MT4IE
12	Accessory for connection to flat cables	XZCG0122	XZCG0122	XZCG0122

- Product family, interfaces or components, etc.
- AS-Interface version: (V1 and V2.1 compatibility, see table below).
V1: version enabling mounting of 31 interfaces or components per master module using products with standard addressing.
V2.1: version enabling mounting of 31 interfaces or components per master module using products with standard addressing or 62 interfaces or components per master module using products with extended A/B addressing.
Diagnostic information, such as a short-circuit on a sensor supply, is signalled to the PLC.
- Each input enables connection of a sensor (detectors, switches, pushbuttons, etc.).
- Each output enables connection of an actuator (contactors, solenoids, pilot lights, etc.).
- Standard addressing: enables connection of 31 interfaces or components.
Extended addressing: enables connection of 62 interfaces or components.
- Indicates the circuits that can be supplied directly by the AS-Interface (example: yellow cable).
- Indicates the circuits requiring an external supply source. This voltage can be distributed by the flat black cable.
- The profile is very useful when replacing an existing product and ensures full interchangeability. For V2.1 products, the 3rd character of the profile can be changed by the user using the adjustment or addressing terminal.
- Enables the power of the AS-Interface supply to be established.
- Overall dimensions of product.
- Enables the product to be ordered.
- Accessory best suited for connection of product. Other types of accessory can equally be used.

Compatibility between V1 and V2.1 master modules and V1 and V2.1 interfaces or components

Master modules	Interfaces and components		Analog interfaces
	V1	V2.1	V2.1
V1	Yes	Yes (1)	No
V2.1	Yes (1)	Yes	Yes

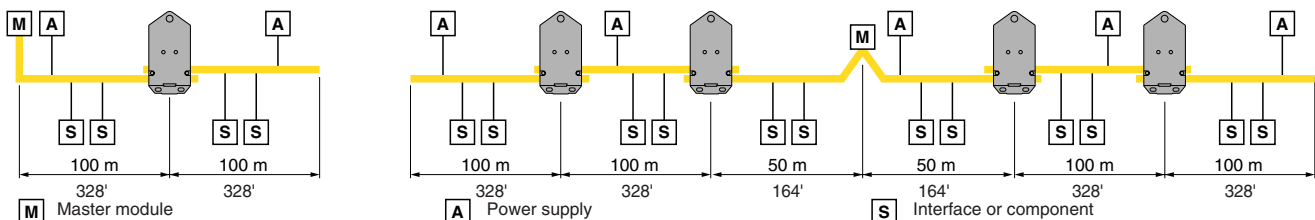
(1) Diagnostic information, such as a short-circuit on a sensor supply, is not signalled to the PLC. V1 and V2.1 interfaces and components can be combined on the same master module.

Some AS-Interface rules

Power supply: Only use PELV type power supply units such as those listed on page 8-8. Do not use any other power supply type.

Calculating the length of the AS-Interface network: Add the length of the yellow cable to 2 x the length of the connection accessories. Example: 50 m yellow cable and 5 tap-offs with 2 m (6.6') cable (ref. ASI-DCPM12D20) => network length = 50 + (2 x 5 x 2) = 70 m. [164' + (2 x 16.4' x 2) = 230']
It is recommended that unnecessary cable runs are avoided.

The maximum length of the network is 100 m (328'), but this can be extended to 200 m (656') by using 1 repeater or to 300 m (984') by using 2 repeaters (see page 9). By positioning the master module at the center of the network, it is possible to achieve 500 m (1640'). It is not possible to exceed this value using a single master.



The AS-Interface cable:

Preferably use the flat yellow cable and respect the polarities (+ brown, – blue).

However, it is possible to use standard cabling, particularly in enclosures, but ensure that the 2 wires are not twisted in order to avoid reversal of the AS-Interface + and AS-Interface –.

Preventa™ Machine Safeguarding Products



Maintaining Safe and Compliant Working Environments

With Preventa safeguarding products, Schneider Electric offers the most complete line of safety solutions for your machinery and industrial processes. From stand-alone safety monitoring to integrated safety control systems, the Telemecanique comprehensive line of Preventa safety products can provide the appropriate level of machine safeguarding no matter what your industry or application.

The Preventa Advantage:

Experience

Industry-leading expertise in advanced switching and sensing technologies, with over 30 years of safety product innovation.

Compliance

All devices are UL, CSA, and CE compliant and are designed to work together to meet applicable Domestic and International safety standards and requirements.

Single Source

Comprehensive machine safeguarding product offering that allows for single safety function operation or integration into a total safety system solution.

Flexibility

Single components that can perform multiple safety functions in a variety of conditions makes for easier product selection and a smaller, more manageable product inventory.

Global Reach

Worldwide supplier for compliant solutions and fast delivery.

Preventa Machine Safeguarding Product Solutions:

Developed to match multiple application configurations, Preventa Machine Safeguarding Products are easy to select, install and operate due to their flexible functionality and compact design.

- Safety Controllers
- Safety Relays
- Safety Interlock Switches
- Non-Contact Safety Interlock Switches
- Safety Limit Switches
- Light Curtains
- Cable Pull Switches

C o n t e n t s

Page

Process

- Safety controllers
- Safety relays

9-2

Detect

- Safety interlock switches
- Non-contact safety interlock switches
- Safety limit switches
- Light curtains

9-6

Dialog

- Emergency stop—Cable pull switches

9-10

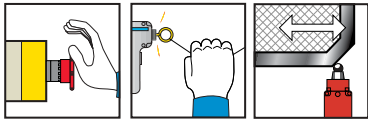
Process

For monitoring

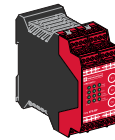
Safety controllers

• emergency stops and limit switches

Available 2nd quarter 2004



Universal

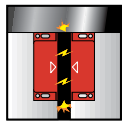


Maximum category of the solution (EN 954-1)		Category 4	
Number of circuits	Safety	4 N.O. + 6 solid-state	3 N.O. per function
	Additional	–	3 solid-state
Display (number of LEDs)		30	12
Width of housing (mm / in.)		74 / 2.91	45 / 1.77

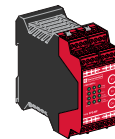
Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2) XPSMC32X ▲ (with 32 inputs) (2)	XPSMP11123P (1) –
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• Non-contact safety interlock switches



Universal



Maximum category of the solution (EN 954-1)		Category 4	
For monitoring			
Non-contact safety interlock switches			
Number of circuits	Safety	4 N.O. + 6 solid-state	3 N.O. per function
	Additional	–	3 solid-state
Display (number of LEDs)		30	12
Width of housing (mm / in.)		74 / 2.91	45 / 1.77

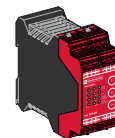
Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2) XPSMC32X ▲ (with 32 inputs) (2)	XPSMP11123P (1) –
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• safety mats and safety edges



Universal



Maximum category of the solution (EN 954-1)		Category 3	
Number of circuits	Safety	4 N.O. + 6 solid-state	3 N.O. per function
	Additional	–	3 solid-state
Display (number of LEDs)		30	12
Width of housing (mm / in.)		74 / 2.91	45 / 1.77

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

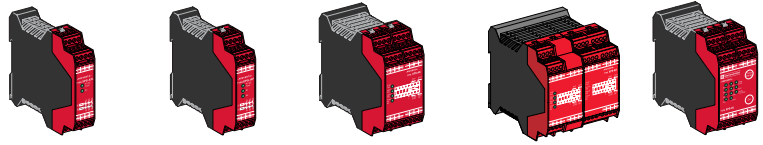
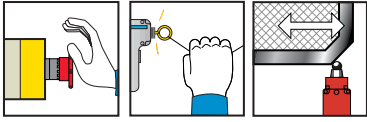
Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2) XPSMC32X ▲ (with 32 inputs) (2)	XPSMP11123P (1) –
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(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSMP11123P becomes XPSMP11123).

(2) XPSMCWIN configuration software, configuration cable TSXPCX1031, adapter XPSMCCPC and set of plug in connectors with screw terminals XPSMCTS16 or XPSMCTS32 or set of plug in connectors with spring terminals XPSMCTC16 or XPSMCTC32 must be ordered separately.

Safety relays

• emergency stops and limit switches



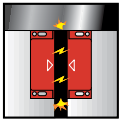
Maximum category of the solution (EN 954-1)		Category 3	Category 4			
Number of circuits	Safety	3 N.O.	3 N.O.	3 N.O.	7 N.O.	3 N.O.+3 N.O. time delay
	Additional	1 solid-state	–	1 N.C. + 4 solid-state	2 N.C. + 4 solid-state	3 solid-state
Display (number of LEDs)		2	3	4	4	11
Width of housing (mm / in.)		22.5 / 0.89	22.5 / 0.89	45 / 1.77	90 / 3.54	45 / 1.77

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



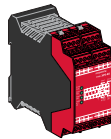
Maximum category of the solution (EN 954-1)		Category 4	
For monitoring		2 non-contact safety interlock switches maximum	6 non-contact safety interlock switches maximum
Number of circuits	Safety	2 N.O.	2 N.O.
	Additional	2 solid-state	2 solid-state
Display (number of LEDs)		3	15
Width of housing (mm / in.)		22.5 / 0.89	45 / 1.77

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 (mm / in.)		45 / 1.77

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).

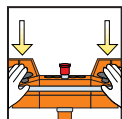
Process

For monitoring

Safety controllers

• two-hand control

▲ Available 2nd quarter 2004

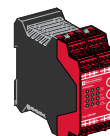
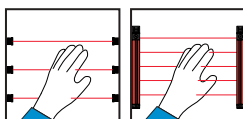


Maximum category of the solution (EN 954-1)		Category 4
Number of circuits	Safety	4 N.O. + 6 solid-state
	Additional	–
Display (number of LEDs)		30
Width of housing (mm / in.)		74 / 2.91

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2)	XPSMC32X ▲ (with 32 inputs) (2)
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• light curtains

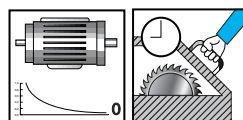


Maximum category of the solution (EN 954-1)		Category 4	
Number of circuits	Safety	4 N.O. + 6 solid-state	3 N.O. per function
	Additional	–	3 solid-state
Display (number of LEDs)		30	12
Width of housing (mm / in.)		74 / 2.91	45 / 1.77
Integral Muting function		Yes	No

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2)	XPSMP11123P (1)
		XPSMC32X ▲ (with 32 inputs) (2)	–

• zero speed and time delay



Maximum category of the solution (EN 954-1)		Category 4
For monitoring		Motor zero speed, time delay, elevators
Number of circuits	Safety	4 N.O. + 6 solid-state
	Additional	–
Display (number of LEDs)		30
Width of housing (mm / in.)		74 / 2.91

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

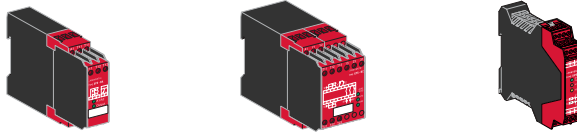
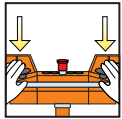
Supply voltage	24 Vdc	XPSMC16X ▲ (with 16 inputs) (2)	XPSMC32X ▲ (with 32 inputs) (2)
----------------	--------	---------------------------------	---------------------------------

(1) For version with non-removable terminal block, delete the letter P from the end of the catalog number (example: XPSMP11123P becomes XPSMP11123).

(2) XPSMCWIN configuration software, configuration cable TSXPCX1031, adapter XPSMCCPC and set of plug in connectors with screw terminals XPSMCTS16 or XPSMCTS32 or set of plug in connectors with spring terminals XPSMCTC16 or XPSMCTC32 must be ordered separately.

Safety relays

• two-hand control



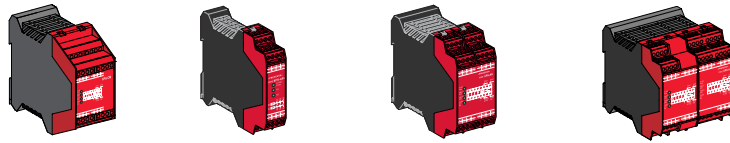
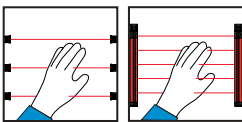
Maximum category of the solution (EN 954-1)		Category 1 (type IIIA to EN 574)	Category 4 (type IIIC to EN 574)	
Number of circuits	Safety	1 N.O.	2 N.O.	2 N.O.
	Additional	1 N.C.	1 N.C.	2 solid-state
Display (number of LEDs)		2	3	3
Width of housing (mm / in.)		22.5 / 0.89	45 / 1.77	22.5 / 0.89

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



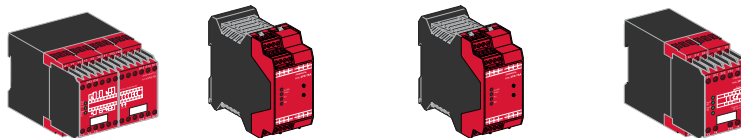
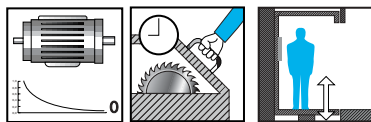
Maximum category of the solution (EN 954-1)		Category 2	Category 4	
Number of circuits	Safety	2 N.O.	3 N.O.	3 N.O.
	Additional	4 solid-state	–	1 N.C. + 4 solid-state
Display (number of LEDs)		4	3	4
Width of housing (mm / in.)		45 / 1.77	22.5 / 0.89	45 / 1.77
Integral Muting function		Yes	No	No

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 Vdc	XPSCM1144P (1)	–	–
	24 Vac/dc	–	XPSAFL5130P (1)	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: XPSCM1144P becomes XPSCM1144).

• zero speed, time delay and elevators

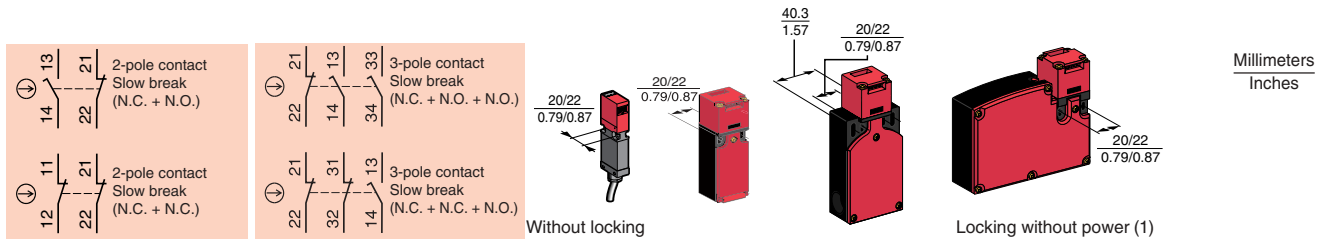


Maximum category of the solution (EN 954-1)		Category 3	Category 4	
For monitoring		Motor zero speed	Safety time delay	Elevators
Number of circuits	Safety	1 N.O. + 1 N.C.	1 N.O. time delay	1 N.O. pulse
	Additional	2 solid-state	2 N.C. + 2 solid-state	2 N.C. + 2 solid-state
Display (number of LEDs)		4	4	4
Width of housing (mm / in.)		90 / 3.54	45 / 1.77	45 / 1.77

Optimum solutions: safety modules (for monitoring 1 safety function)

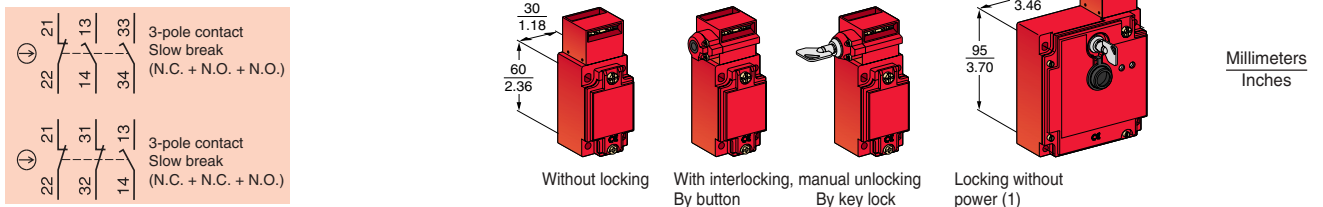
Supply voltage	24 Vdc	XPSVN1142	–	–
	24 Vac/dc	–	XPSTSA5142P (2)	XPSTSW5142P (2)
	120 Vac	XPSVN3442	XPSTSA3442P (2)	XPSTSW3442P (2)

(2) Removable terminal block version only.



Plastic, double insulated switches	Type XCSMP with 6.6 ft. cable	Type XCSPA and TA 1x1/2" NPT entry 2x11 mm entry (2)	Type XCSTE 1 x 11 mm entry (2)
Actuation speed (min → max)	2 in/s to 59 in/s	0.39 in/s to 19.7 in/s	0.39 in/s to 19.7 in/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 (inches)	1.18 x 0.6 x 3.42	1.18 x 1.18 x 4.4	2.05 x 1.18 x 4.5 4.32 x 1.3 x 3.67
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) (N.C.+N.C.: XCSPA/TE) (N.C.+N.C.+N.O.: XCSMP/TA)	XCSMP59L2 (3) → XCSMP70L2 (3) →	XCSPA593 → XCSPA793 →	XCSTA593 → XCSTA793 → XCSTE5313 → XCSTE5333 → XCSTE5343 → XCSTE7313 → XCSTE7333 → XCSTE7343 →

(1) For locking with power, refer to the Machine Safeguarding Products Catalog #9007CT0201.
 (2) With 1/2" NPT conduit adapter.



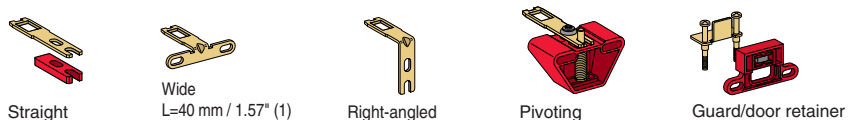
Metal switches	Type XCSA/B/C 1 x 1/2" NPT conduit entry			Type XCSE 2 x 1/2" NPT conduit entry		
Actuation speed (min → max)	0.39 in/s to 19.7 in/s			0.39 in/s to 19.7 in/s		
Degree of protection	IP 67, UL Type 4, 4X, 12			IP 67, UL Type 4, 4X, 12		
Rated operational characteristics (conforming to IEC/EN 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 (inches)	1.57 x 1.73 x 4.47	2.05 x 1.73 x 4.47	2.05 x 1.73 x 4.47	3.86 x 1.73 x 5.75		
Solenoid supply voltage	—	—	—	24 Vac/dc	110/120 Vac/dc	220/240 Vac/dc
Complete switch (N.C. + N.O. + N.O.) (N.C. + N.C. + N.O.)	XCSA503 → XCSA703 →	XCSB503 → XCSB703 →	XCSC503 → XCSC703 →	XCSE5313 → XCSE7313 →	XCSE5333 → XCSE7333 →	XCSE5343 → XCSE7343 →

(1) For locking with power, refer to the Machine Safeguarding Products Catalog #9007CT0201.

Actuating keys and accessories

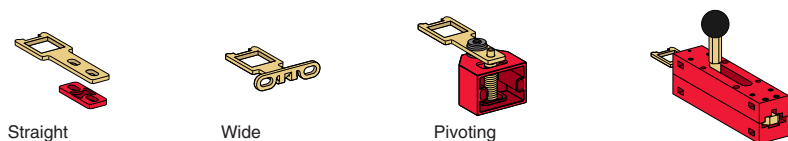


For safety interlock switches XCSMP	Actuating keys			
Catalog number	XCSZ81	XCSZ84	XCSZ83	XCSZ85



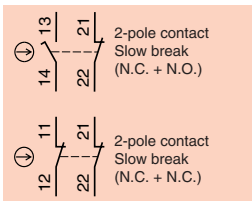
For safety interlock switches XCSPA/TA/TE	Actuating keys				Retaining device
Catalog number	XCSZ11	XCSZ12	XCSZ14	XCSZ13	XCSZ21

(1) For L = 29 mm / 1.14", catalog number = XCSZ15.

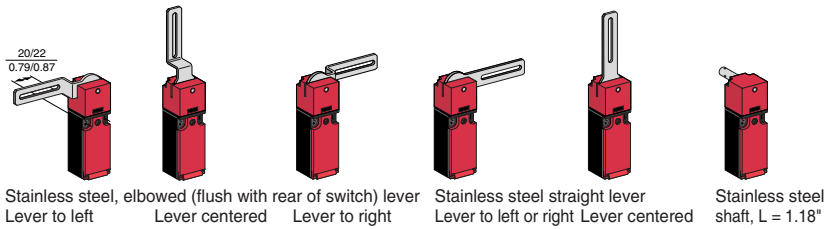


For safety interlock switches XCSA/B/C/E	Actuating keys			Door lock
Catalog number	XCSZ01	XCSZ02	XCSZ03	XCSZ05

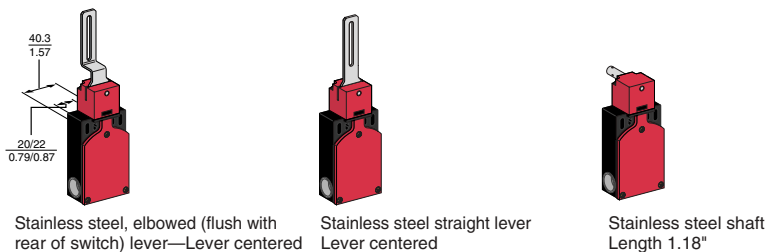
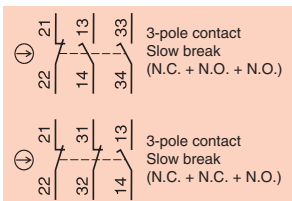
Safety interlock switches with rotary lever or rotary shaft



Millimeters
Inches

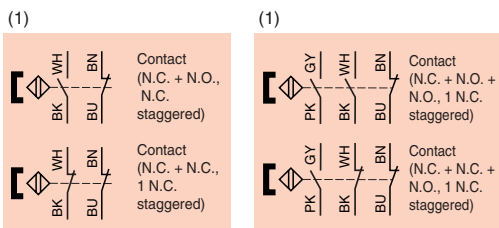


Plastic switches		Type XCSPL with rotary lever or XCSPR with rotary shaft 1 x 1/2" NPT conduit entry					
Minimum torque (actuation / positive opening)		0.88 in-lb (0.1 N•m) / 2.2 in-lb (0.25 N•m)					
Degree of protection		IP67, Type 4, 4X indoor, 12					
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)					
Dimensions (body + head) W x D x H (inches)		1.18 x 1.18 x 6.3	1.18 x 1.18 x 6.3	1.18 x 1.18 x 6.3	1.18 x 1.18 x 6.3	1.18 x 1.18 x 6.3	1.18 x 1.18 x 3.79
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 →



Metal switches		Type XCSTL with rotary lever or XCSTR with rotary shaft 2 x 11 mm conduit entry with 1/2" NPT conduit adapter		
Minimum torque (actuation / positive opening)		0.88 in-lb (0.1 N•m) / 4.0 in-lb (0.45 N•m)		
Degree of protection		IP 67, 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 P x H (inches)		2.05 x 1.18 x 7.00	2.05 x 1.18 x 7.00	2.05 x 1.18 x 4.60
Tripping angle		5°	5°	5°
Complete switch	(N.C. + N.O. + N.O., 2 N.O. staggered)	XCSTL583 →	XCSTL553 →	XCSTR553 →
	(N.C. + N.C. + N.O., N.O. staggered)	XCSTL783 →	XCSTL753 →	XCSTR753 →

Non-contact safety interlock switches

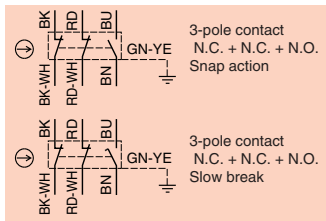


Plastic switches		Type XCSDM non-contact safety interlock switches Pre-wired, L = 2 m (6.6 ft)		
Switches for actuation		Face to face, face to side, side to side		Face to face
Degree of protection		IP 66 + IP 67		
Type of contact		REED		
Rated operational characteristics		Ue = 24 Vdc, Ie = 100 mA		
Dimensions W x D x H (inches)		0.63 x 0.27 x 2.00	0.98 x 0.51 x 3.36	M30 Dia. x 1.52
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.C. + N.C., 1 N.C. staggered)	XCSDMC7912	—	XCSDMR7912
	(N.C. + N.O. + N.O., 1 N.C. staggered)	—	XCSDMP5012	—
	(N.C. + N.C. + N.O., 1 N.C. 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 with 0 (example: XCSDMC5912 becomes XCSDMC5902).

(3) Sao: assured operating distance. Sar: assured release distance.



Metal end plunger



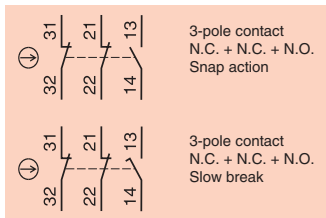
Roller plunger



Thermoplastic roller lever

Miniature switches		Type XCSM, metal pre-wired with 2 m (6.6 ft) cable (1)		
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 lb (8.5 N) / 9.5 lb (42.4 N)	1.6 lb (7 N) / 7.9 lb (35 N)	0.9 in-lb (0.1 N•m) / 4.4 in-lb (0.5 Nm)
Degree of protection		IP66 + IP67 + IP68, Type 4, 4x, 6, 12		
Dimensions (body + head) W x D x H		1.18" 0.63" x 2.36" (30 x 16 x 60 mm)	1.18" 0.63" x 2.77" (30 x 16 x 70.5 mm)	1.18" x 1.28" x 3.70" (30 x 32 x 94 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 (16.4 ft) long cable, replace the last digit of the catalog number with 5 (example: XCSM3910L2 becomes XCSM3910L5).



Metal end plunger



Roller plunger



Thermoplastic roller lever



Metal end plunger



Roller plunger



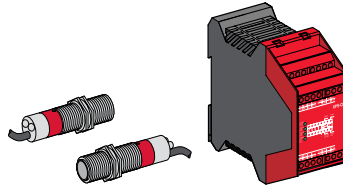
Thermoplastic roller lever

Compact switches			Type XCSD, metal 1 x 1/2" NPT conduit (2)			Type XCSP, plastic 1 x 1/2" NPT conduit (2)		
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 lb / 10.12 lb	2.7 lb / 8.09 lb	0.89 in-lb / 2.21 in-lb	3.72 lb / 10.12 lb	2.7 lb / 8.09 lb	0.89 in-lb / 2.21 in-lb
Degree of protection			IP66 + IP67, Type 4, 4x, 12					
Dimensions (body + head) W x D x H (inches)			1.34 x 1.36 x 3.50	1.34 x 1.36 x 3.92	1.34 x 1.67 x 4.78	1.34 x 1.36 x 3.50	1.34 x 1.36 x 3.92	1.34 x 1.67 x 4.78
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 2



Light curtain		Type 2 conforming to IEC/EN 61496-1
Height protected (conforming to EN 999)		750–1200 mm / 29.53"–47.2" (1 to 4 beams)
Nominal sensing distance (Sn)		8 m / 26.2 ft
Number of circuits	Safety	2 N.O.
	Additional	4 solid-state
Response time		< 25 ms
Modules (integral muting function) 24 Vdc		XPSCM1144P (1)
Thru-beam pairs, axially aligned	Pre-cabled, L = 5 m (16.4 ft) PNP	XU2S18PP340L5 (2)
	M12 connector PNP	XU2S18PP340D (2)

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSCM1144P becomes XPSCM1144).

(2) For alignment at 90° to the mounting axes, insert the letter W in the catalog number before the last letter (example: XU2S18PP340L5 becomes XU2S18PP340WL5).

Type 4

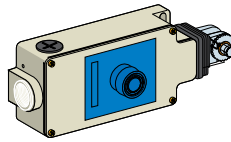
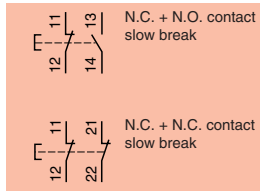


Light curtain functions

- Auto/Manual,
- Monitoring of external switching devices (EDM: External Devices Monitoring),
- Test input (MTS: Monitoring Test Signal),
- 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.

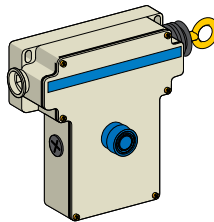
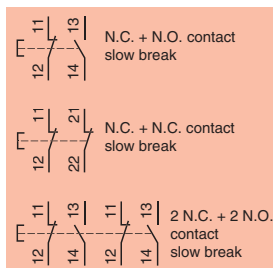
Compact range		Type 4 conforming to IEC/EN 61496-1.	
		Pre-wired with 0.25m (9.8 in) cable with connector.	
Sensing range		0.3–7.5 m / 1 to 24 ft	0.3–9 m / 1 to 29.5 ft
Minimum object sensitivity (MOS)		14 mm (0.55 in) finger protection	30 mm (1.18 in) hand protection
Number of circuits	Safety	2 solid-state 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 (mm / in)	protected height		
	260 / 10.3	XUSLTQ6A0260	–
	350 / 13.8	XUSLTQ6A0350	XUSLTR5A0350
	435 / 17.2	XUSLTQ6A0435	–
	520 / 20.6	XUSLTQ6A0520	XUSLTR5A0520
	610 / 24.1	XUSLTQ6A0610	–
	700 / 27.6	XUSLTQ6A0700	XUSLTR5A0700
	870 / 34.3	XUSLTQ6A0870	XUSLTR5A0870
	955 / 37.7	XUSLTQ6A0955	–
	1045 / 41.2	XUSLTQ6A1045	XUSLTR5A1045
	1215 / 47.9	XUSLTQ6A1215	XUSLTR5A1215
	1390 / 54.9	XUSLTQ6A1390	XUSLTR5A1390
	1570 / 61.8	–	XUSLTR5A1570

		Connector cables		
Length		10 m (32.8 ft)	15 m (49.2 ft)	30 m (98.4 ft)
Pre-wired with connector (shielded cable)	receiver cable	XSZTCR10	XSZTCR15	XSZTCR30
	transmitter cable	XSZTCT10	XSZTCT15	XSZTCT30



Booted pushbutton reset

For operating cable length ≤ 15 m (50 ft.)		Latching when tripped 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 (mm / in)		201 x 71 x 68 / 7.90 x 2.80 x 2.70	
Operating cable length		≤ 15 m (50 ft)	
Contact	N.C. + N.O. slow break	XY2CH13150 Standard reset	XY2CH13250 Booted reset
	N.C. + N.C. slow break	XY2CH13170 Standard reset	XY2CH13270 Booted reset



Booted pusbutton reset

For operating cable length ≤ 50 m (165 ft)		Latching when tripped 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 (mm / in)		229 x 82 x 142 / 9.00 x 3.23 x 5.60			
Operating cable length		≤ 50 m (165 ft)			
Contact		Standard reset	Std. reset with pilot light	Booted reset	Booted reset with pilot light
	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 2 (example: XY2CE1A150 changes to XY2CE2A150)

		Cable kits		
For use with	XY2CH	XY2CE	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	
Part Number	XY2CZ9310	XY2CZ9325	XY2CZ9350	



		Accessories			
For use with		all XY2CE and XY2CH			
Style		Cable support	Pulley	Pulley support	Cable clamp
Part Number		XY2CZ601	XY2CZ708	XY2CZ705	XY2CZ523

For emergency stop buttons, see pages 4-3, 4-6, 4-10, 4-13 and 4-14 in the operator interface section.



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)		Continuous torque at standstill/peak torque at standstill						
Lexium SER (IP41 or IP56)	Lexium BPH (IP65 or IP67)							
		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



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	22F2●●1●1	42F3●●1●1	62F3●●1●1	82F3●●1●1
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				
Command via (1)	Discrete control	TLC43	22F21●●●●	42F31●●●●	62F31●●●●	82F31●●●●
	Fieldbus	TLC53	22F2●●●●	42F3●●●●	62F3●●●●	82F3●●●●
Programmable motion controller (1)	TLC63	22F2●●●●	42F3●●●●	62F3●●●●	82F3●●●●	
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	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		●	●	●	●	●
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.

www.telemecanique.com

Schneider Electric
8001 Highway 64 East
Knightdale, NC 27545
1-888-SquareD
(1-888-778-2733)
www.schneider-electric.com
www.telemecanique.com

Schneider Canada Inc.
19 Waterman Avenue
M4B 1 Y2
Toronto, Ontario
1-800-565-6699
www.schneider-electric.ca

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