



# The go to guide

for the most efficient selection

Make the most of your energy

# Contents

## Operator dialog

- Control and signalling units
- Human/Machine Interfaces

1

## Automation

- Relays
- Controllers for commercial and industrial machines
- Programmable Automation Controllers (PACs)
- Configuration software

2

## Motion and Drives

- Soft starters and variable speed drives
- Controllers, drives, motors and linear motion axes

3

## Motor control

- Motor control components
- Components for power control applications

4

## Power supplies

- Power supplies
- Transformers
- Connection

5

## Interfaces and I/O

- Distributed Inputs/Outputs
- Distributed I/O with embedded control
- Interfaces
- Accessories and Cabling

6

## Networks connectivity and Web servers

- ConneXium cabling system
- AS-Interface cabling system
- Servers and Gateways

7

## Machine safety

- Safety solutions provide maximum protection in all the safety functions of your automation system

8

# Innovative and simple products for all **Autom**

## Interfaces & I/O

### Connectors

Cable-ends, terminal blocs

### Interfaces

Plug-in relays, analog converters, discrete interfaces

Pre-wired interfaces, IP20/IP67 distributed I/O

### AS-Interface

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

### Machine safety

Safety monitors and controllers on AS-Interface

### Software

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

## Power supplies

### Power supplies

Switch mode power supplies  
Filtered rectified power supplies, transformers

### AS-Interface

Power supplies



## Automation

### Relays

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

### PLCs, PC based control, distributed I/O

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

### AS-Interface

Master modules for Modicon PLCs

### Machine safety

Safety PLCs, controllers and modules

### Software

PLCs and safety controllers programming software

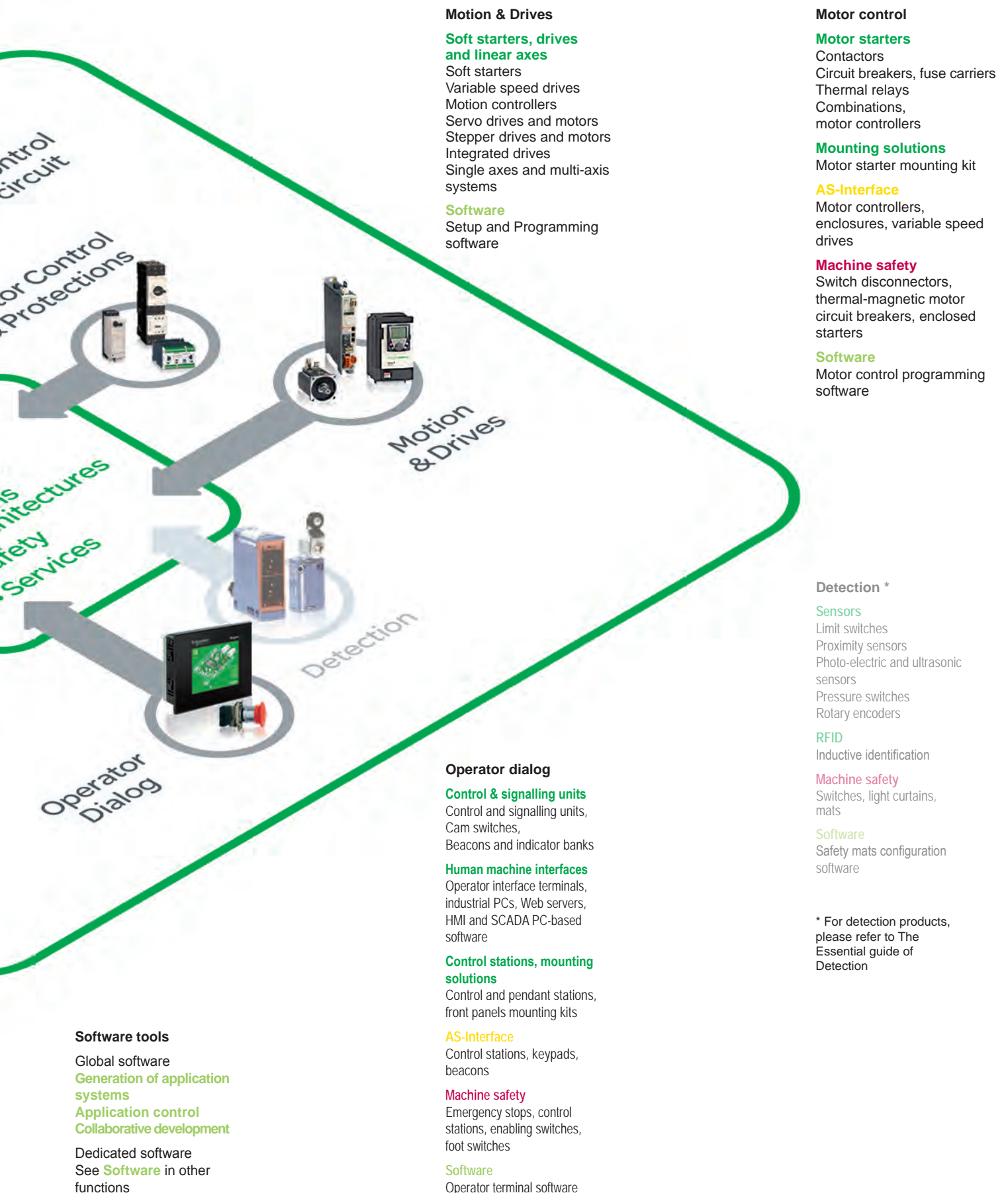
## Systems & Architectures

Connecting Ethernet devices

Web-enabling PLCs on Ethernet

Application protocols and field buses

# ation and Control functions



# 1 Operator Dialog

**Harmony**, simple and innovative solutions that solve all your problems

World leader in control and signalling components, Schneider Electric continues its policy of innovation within the Harmony ranges in order to perfect the efficiency of your dialogue solutions.



**Invest with complete peace of mind!**



**The assurance of finding the solution for any application**

An offer unrivalled in content and complementarity  
Optimised cost saving solutions due to increased flexibility of the offers, enabling multiple combinations and full compatibility



**The assurance of reliable components in any situation**

Robust products that comply to the highest quality standards



**The assurance of saving valuable time**

Simple selection and quick installation for all Harmony components

# Contents



## 1 Pushbuttons, switches and pilot light



## 2 Cam switches



## 3 Signalling solutions



## 4 Control stations



## 5 Joystick controllers

## Pushbuttons, switches and pilot lights

- Pushbuttons, switches and pilot lights Ø 16 with plastic bezel, **Harmony XB6** ..... 1/2 to 1/4
- LED pilot lights Ø 8 and 12  
**Harmony XVL** ..... 1/5
- Pushbuttons, switches and pilot lights Ø 22 with metal bezel, **Harmony XB4** ..... 1/6 to 1/9
- Pushbuttons, switches and pilot lights Ø 22 with plastic bezel, **Harmony XB5** ..... 1/10 to 1/12
- Biometric switch, **Harmony XB5S** ..... 1/11
- Control stations  
**Harmony XAL** ..... 1/13
- Monolithic pushbuttons, switches and pilot lights Ø 22 with plastic bezel, **Harmony XB7** ..... 1/14 and 1/15
- Pushbuttons, switches and pilot lights Ø 30 with metal or plastic bezel, **Harmony 9001** ..... 1/16 to 1/19
- Cam switches  
**Harmony Series K** ..... 1/20 and 1/21

## Signalling solutions

- Ø 40, 60, 100 mm monolithic tower lights  
**Harmony XVC** ..... 1/22
- Ø 45 mm beacons and tower lights, accessories  
**Harmony XVDLS / XVC** ..... 1/23
- Ø 70 mm modular tower lights (IP 66)  
**Harmony XVB** ..... 1/24
- Ø 70 mm modular tower lights (up to IP 54)  
**Harmony XVE** ..... 1/25
- Ø 45, 50 mm modular tower lights (up to IP 54)  
**Harmony XVP** ..... 1/26
- Modular tower lights accessories  
**Harmony XV** ..... 1/27
- Ø 84, 106, 120, 130 mm rotating mirrors  
**Harmony XVR** ..... 1/28
- Accessories for rotating mirror beacons  
**Harmony XVR** ..... 1/29
- Electronic alarms and multisound sirens  
**Harmony XVS** ..... 1/29

## Components for hoisting applications

- Pendant control stations  
**Harmony XAC** ..... 1/30 and 1/31
- Joystick controllers and controller stations & desks  
**Harmony XK / XJ** (consult Customer Care Centre at 1-800-565-6699)

## Human/Machine Interfaces

- Contents ..... 1/35

(1):

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



### Illuminated pushbuttons

<b>Type of head</b>		<b>Flush push</b>
<b>Shape of head</b>		rectangular (2)
<b>Degree of protection</b>		IP 65 / Nema 4, 4X, 13 / Class II
<b>Mounting (mm)</b>	panel cut-out mounting centres	$\varnothing 16.2^{+0.2}_0$ 24 x 18 with rectangular head, 18 x 18 with square or circular head
<b>Dimensions (mm)</b>	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
<b>Connection (3)</b>		Tags for 2.8 x 0.5 Faston connectors or for soldering
<b>Type of push</b>		<b>Spring return</b>

		Complete products	Products for user assembly			
		12 ... 24 V AC/DC				
<b>References</b>	white ●	NO	<b>XB6DW1B1B</b>	<b>ZB6E●1B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DW1</b>
		NO + NC	<b>XB6DW1B5B</b>	<b>ZB6E●1B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DW1</b>
	green ●	NO	<b>XB6DW3B1B</b>	<b>ZB6E●3B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DW3</b>
		NO + NC	<b>XB6DW3B5B</b>	<b>ZB6E●3B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DW3</b>
	red ●	NC	<b>XB6DW4B2B</b>	<b>ZB6E●4B (1)</b>	<b>ZB6Z2B</b>	<b>ZB6DW4</b>
		NO + NC	<b>XB6DW4B5B</b>	<b>ZB6E●4B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DW4</b>
yellow ●	NO	–	<b>ZB6E●5B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DW5</b>	
	NO + NC	<b>XB6DW5B5B</b>	<b>ZB6E●5B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DW5</b>	

		<b>Latching</b>				
<b>References</b>	white ●	NO	–	<b>ZB6E●1B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DF1</b>
		NO + NC	<b>XB6DF1B5B</b>	<b>ZB6E●1B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DF1</b>
	green ●	NO	<b>XB6DF3B1B</b>	<b>ZB6E●3B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DF3</b>
		NO + NC	<b>XB6DF3B5B</b>	<b>ZB6E●3B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DF3</b>
	red ●	NC	<b>XB6DF4B2B</b>	<b>ZB6E●4B (1)</b>	<b>ZB6Z2B</b>	<b>ZB6DF4</b>
		NO + NC	<b>XB6DF4B5B</b>	<b>ZB6E●4B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DF4</b>
yellow ●	NO	–	<b>ZB6E●5B (1)</b>	<b>ZB6Z1B</b>	<b>ZB6DF5</b>	
	NO + NC	–	<b>ZB6E●5B (1)</b>	<b>ZB6Z5B</b>	<b>ZB6DF5</b>	



### Pilot lights

<b>Type of head</b>		<b>Smooth lens cap</b>		
<b>Shape of head</b>		rectangular (2)		
		<b>Complete products</b>		
		12 ... 24 V AC/DC		
		<b>Products for user assembly</b>		
<b>References</b>	white ●	<b>XB6DV1BB</b>	<b>ZB6E●1B (1)</b>	<b>ZB6DV1</b>
	green ●	<b>XB6DV3BB</b>	<b>ZB6E●3B (1)</b>	<b>ZB6DV3</b>
	red ●	<b>XB6DV4BB</b>	<b>ZB6E●4B (1)</b>	<b>ZB6DV4</b>
	yellow ●	<b>XB6DV5BB</b>	<b>ZB6E●5B (1)</b>	<b>ZB6DV5</b>
	blue ●	–	<b>ZB6E●6B (1)</b>	<b>ZB6DV6</b>

(1) Basic reference, 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 reference by the letter **C** (XB6DW1B1B becomes XB6CW1B1B).

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

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



# Contact functions

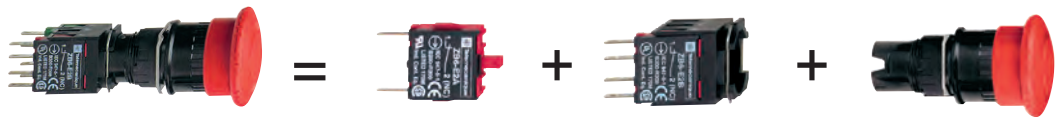


Pushbuttons						
Type of head			<b>Flush push</b>			
Shape of head			rectangular (1)			
Degree of protection			IP 65 / Nema 4, 4X, 13 / Class II			
Mounting (mm)	panel cut-out		$\varnothing 16.2^{+0.2}_0$			
	mounting centres		24 x 18 with rectangular head, 18 x 18 with square or circular head			
Dimensions (mm)	W x H x D (below head)		24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head			
Connection (2)			Tags for 2.8 x 0.5 Faston connectors or for soldering			
Type of push			Spring return			
			Complete products	Products for user assembly		
References	white		NO	<b>XB6DA11B</b>	<b>ZB6Z1B</b>	<b>ZB6DA1</b>
			NO + NC	<b>XB6DA15B</b>	<b>ZB6Z5B</b>	<b>ZB6DA1</b>
	black		NO	–	<b>ZB6Z1B</b>	<b>ZB6DA2</b>
			NO + NC	<b>XB6DA25B</b>	<b>ZB6Z5B</b>	<b>ZB6DA2</b>
	green		NO	<b>XB6DA31B</b>	<b>ZB6Z2B</b>	<b>ZB6DA3</b>
			NO + NC	<b>XB6DA35B</b>	<b>ZB6Z5B</b>	<b>ZB6DA3</b>
	red		NO	–	<b>ZB6Z1B</b>	<b>ZB6DA4</b>
			NO + NC	<b>XB6DA45B</b>	<b>ZB6Z5B</b>	<b>ZB6DA4</b>

(1) For products with a square head, replace the letter **D** in the reference by the letter **C** (XB6DA11B becomes XB6CA11B).

For products with a circular head, replace the letter **D** in the reference by the letter **A** (XB6DA11B becomes XB6AA11B).

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



Ø 30 mushroom head Emergency stop pushbuttons (3)							
Type of head			<b>Trigger action (EN/ISO 13850)</b>				
Shape of head			cylindrical				
Type of push			Turn to release				
			Complete products	Products for user assembly			
References	red		2 NC + 1 NO	<b>XB6AS8349B</b>	<b>ZB6E2B</b>	<b>ZB6Z5B</b>	<b>ZB6AS834</b>
Type of push			Key release, Ronis 200				
References	red		2 NC + 1 NO	<b>XB6AS9349B</b>	<b>ZB6E2B</b>	<b>ZB6Z5B</b>	<b>ZB6AS934</b>

(3) Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850: to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5. Please consult your Regional Sales Office for a full explanation of these standards and directives.

1



#### Selector switches and key switches

Type of head		Black handle
Shape of head		rectangular (2)
Degree of protection		IP 66 / Nema 4, 4X, 13 / Class II
Mounting (mm)	panel cut-out mounting centres	Ø 16.2 <sup>+0.2</sup> <sub>0</sub>
Dimensions (mm)	W x H x D (below head)	24 x 18 with rectangular head, 18 x 18 with square or circular head
Connection (3)		Tags for 2.8 x 0.5 Faston connectors or for soldering
Type of operator		Black handle

		Complete products	Products for user assembly			
Number and type of positions		2 positions stay put				
References	NO	XB6DD221B	ZB6Z1B	ZB6DD22	ZB6Z1B	ZB6DD24
	NO + NC	XB6DD225B	ZB6Z5B	ZB6DD22	ZB6Z5B	ZB6DD24
Number and type of positions		3 positions stay put				
References	NO	XB6DD235B	ZB6Z5B	ZB6DD23	ZB6Z5B	ZB6DD25



#### Type of operator

		Complete products	Products for user assembly			
Number and type of positions		2 positions stay put				
References	NO + NC	XB6DGC5B	ZB6Z5B	ZB6DGC	ZB6Z5B	ZB6DGB
Number and type of positions		3 positions stay put				
References	NO + NC	XB6DGH5B	ZB6Z5B	ZB6DGH	ZB6Z5B	ZB6DGS

(1):

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



#### Illuminated selector switches

		Coloured handle			
Type of operator		Products for user assembly			
Number and type of positions			2 positions stay put	3 positions stay put	
References	white ● NO + NC	ZB6E●1B (1)	ZB6Z5B	ZB6DD02	ZB6YK1
	green ● NO + NC	ZB6E●3B (1)	ZB6Z5B	ZB6DD02	ZB6YK3
	red ● NO + NC	ZB6E●4B (1)	ZB6Z5B	ZB6DD02	ZB6YK4

(1) Basic reference, 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 reference by the letter C (XB6DD221B becomes XB6CD221B).

For products with a circular head, replace the letter D in the reference by the letter A (XB6DD221B becomes XB6AD221B).

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

# LED pilot lights Ø 8 and 12

(1):

Voltage	Number (●)
5 V (25 mA)	1
12 V (18 mA)	2
24 V (18 mA)	3
48 V (10 mA)	4



1

LED pilot lights		With black bezel		With integral lens cap	
Type of head		Protruding LED, Ø 8 mm		Covered LED, Ø 8 mm	
Degree of protection		IP 40, IP 65 with seal (2)			
Mounting (mm)	panel cut-out	Ø 8.2 mm		Ø 8.2 mm	
	mounting centres	12.5 x 12.5 mm		10.5 x 10.5 mm	
Dimensions (mm)	Ø x Depth (below head)	Ø 12 x 32		Ø 10 x 34	
Connection		Tags (3)		Threaded connectors	
References (1)	green ●	XVLA1●3		XVLA2●3	
	red ●	XVLA1●4		XVLA2●4	
	yellow ●	XVLA1●5		XVLA2●5	
Tightening key		For Ø 8 mm pilot lights		For Ø 12 mm pilot lights	
References		XVLX08		XVLX12	

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

(2) For an IP 65 degree of protection, include the seals: XVLZ911 for pilot lights XVLA1●● and XVLA2●●; XVLZ912 for pilot lights XVLA3●●.

(3) Tags for 2.8 x 0.5 Faston connectors or for soldering.

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



Sub-assemblies		Bodies for pushbuttons and selector switches			Bodies for pilot lights				
Rated operational characteristics, AC-15: U <sub>e</sub> = 240 V and I <sub>e</sub> = 1.5 A or U <sub>e</sub> = 120 V and I <sub>e</sub> = 3 A					Consumption				
Positive operation of contacts conforming to IEC/EN 60947-5-1: NC contacts with positive opening operation, positive opening force 20 N					15 mA	12...24 V AC/DC			
					25 mA	48...120 V AC			
					25 mA	230...240 V AC			
		Type of contact	Fixing collar + contacts	Contacts	Pilot light bodies	12 ... 24 V	48 ... 120 V	230 ... 240 V	
References		NO	ZB6Z1B	ZB6E1B	White ●	ZB6EB1B	ZB6EG1B	ZB6EM1B	
		NC	ZB6Z2B	ZB6E2B	Green ●	ZB6EB3B	ZB6EG3B	ZB6EM3B	
		2 NO	ZB6Z3B	–	Red ●	ZB6EB4B	ZB6EG4B	ZB6EM4B	
		2 NC	ZB6Z4B	–	Yellow ●	ZB6EB5B	ZB6EG5B	ZB6EM5B	
		NO + NC	ZB6Z5B	–	Blue ●	ZB6EB6B	ZB6EG6B	ZB6EM6B	
<b>Accessories</b>									
Legend holders		24 x 28 mm (8 x 21 mm legend)			24 x 36 mm (16 x 21 mm legend)				
Blank legend	Background colour	without legend	yellow or white	black or red	without legend	yellow or white	black or red		
References (10)*		ZB6YD20	ZB6YD21	ZB6YD22	ZB6YD30	ZB6YD31	ZB6YD32		
Blank legends for legend holders		8 x 21 mm (24 x 28 mm legend holder)			16 x 21 mm (24 x 36 mm legend holder)				
	Background colour	–	yellow or white	black or red	–	yellow or white	black or red		
References (20)*		–	ZB6Y1001	ZB6Y2001	–	ZB6Y4001	ZB6Y3001		
Ø 45 mm yellow legend for mushroom head Emergency stop pushbutton									
	Marking	Blank, for engraving		EMERGENCY STOP	ARRET D'URGENCE				
References		ZB6Y7001		ZB6Y7330	ZB6Y7130				
	Body/fixing collar	Plate		Tightening tool	Dismantling tool				
		anti-rotation		and slackening, for fixing nut	for removal of contact blocks				
References	ZB6Y009 (Sold in lots of 10)*	ZB6Y003 (Sold in lots of 10)		ZB6Y905 (Sold in lots of 2)	ZB6Y018 (Sold in lots of 5)				
	Protective shutter for pushbuttons and switches	Connector			Blanking plug				
	for rectangular heads	for circular and square heads		Faston, female	IP 65				
References	ZB6YD001	ZB6YA001		ZB6Y004 (Sold in lots of 100)	ZB6Y005 (Sold in lots of 10)				

1



### Pushbuttons, spring return

<b>Type of head</b>		<b>Chromium plated circular bezel</b>							
<b>Degree of protection</b>		IP 66 / Nema 4X, 13 / Class I							
<b>Mounting (mm)</b>		Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended)							
panel cut-out mounting centres		30 (horizontal) x 40 (vertical)							
<b>Depth (mm)</b>		43							
<b>Connection (1)</b>		Screw clamp terminals							
<b>Type of push</b>		Flush			Flush, booted				
<b>Unmarked</b>		<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>		<b>Complete</b>	<b>For user assembly</b>	
<b>References</b>	black ● NO	XB4BA21	ZB4BZ101	ZB4BA2	XB4BP21	ZB4BZ101	ZB4BPA2		
	green ● NO	XB4BA31	ZB4BZ101	ZB4BA3	XB4BP31	ZB4BZ101	ZB4BPA3		
	red ● NC	XB4BA42	ZB4BZ102	ZB4BA4	XB4BP42	ZB4BZ102	ZB4BPA4		
	yellow ● NO	XB4BA51	ZB4BZ101	ZB4BA5	XB4BP51	ZB4BZ101	ZB4BPA5		
	blue ● NO	XB4BA61	ZB4BZ101	ZB4BA6	XB4BP61	ZB4BZ101	ZB4BPA6		

<b>Type of push</b>		Flush							
<b>With international marking</b>		<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>				
<b>References</b>	green ⓘ NO	XB4BA3311	ZB4BZ101	ZB4BA331	–	–	–		
	red ⓘ NC	XB4BA4322	ZB4BZ102	ZB4BA432	–	–	–		
	white ⓘ NO	XB4BA3341	ZB4BZ101	ZB4BA334	–	–	–		
	black ⓘ NO	XB4BA3351	ZB4BZ101	ZB4BA335	–	–	–		

<b>Type of push</b>		Projecting			Mushroom head, Ø 40 mm				
<b>Unmarked</b>		<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>		<b>Complete</b>	<b>For user assembly</b>	
<b>References</b>	black ● NO	–	–	–	–	–	XB4BC21	ZB4BZ101	ZB4BC2
	red ● NC	XB4BL42	ZB4BZ102	ZB4BL4	–	–	–	–	–

<b>Type of push</b>		Double-headed pushbuttons			Triple-headed pushbuttons				
<b>Degree of protection</b>		IP 66 - IP 69K			IP 66 - IP 69K				
<b>With international marking</b>		<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>		<b>Complete</b>	<b>For user assembly</b>	
				(A)			(B)		
<b>References</b>	(A) NO + NC	XB4BL73415	ZB4BZ105	ZB4BL7341	–	–	–		
	(B) NO + NC + NO	–	–	–	XB4BA711237	ZB4BZ103 + ZBE102	ZB4BA71123		

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



### Ø 40 mm mushroom head Emergency stop pushbuttons (2)

<b>Type of push</b>		<b>Trigger action (EN/ISO 13850)</b>						
<b>Unmarked</b>		Push-pull NO + NC						
		<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>			
<b>References</b>	red ● NO + NC	XB4BT845	ZB4BZ105	ZB4BT84				
<b>Type of push</b>		Turn to release NO + NC						
<b>References</b>	red ● NO + NC	XB4BS8445	ZB4BZ105	ZB4BS844				
<b>Type of push</b>		Key release NO + NC						
<b>References</b>	red ● NO + NC	XB4BS9445	ZB4BZ105	ZB4BS944				

(2) Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5. Please consult your Regional Sales Office for a full explanation of these standards and directives.

## Contact functions



1

### Selector switches and key switches

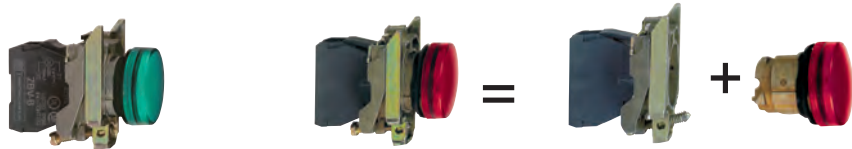
<b>Type of head</b>		<b>Chromium plated circular bezel</b>					
<b>Degree of protection</b>		IP 66 / Nema 4X, 13 / Class I					
<b>Mounting (mm)</b>	panel cut-out	Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended)					
	mounting centres	30 (horizontal) x 40 (vertical)					
<b>Depth (mm)</b>	below head	43					
<b>Connection (1)</b>		Screw clamp terminals					
<b>Type of operator</b>		<b>Handle</b>					
<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>		<b>Complete</b>	<b>For user assembly</b>	
<b>Number and type of positions</b>		<b>2 positions</b> stay put	<b>2 positions</b> stay put	<b>2 positions</b> spring return to left	<b>2 positions</b> spring return to left		
<b>References</b>	black ● NO	<b>XB4BD21</b>	<b>ZB4BZ101</b>   <b>ZB4BD2</b>	<b>XB4BD41</b>	<b>ZB4BZ101</b>   <b>ZB4BD4</b>		
<b>Number and type of positions</b>		<b>3 positions</b> stay put	<b>3 positions</b> stay put	<b>3 positions</b> spring return to centre	<b>3 positions</b> spring return to centre		
<b>References</b>	black ● NO + NO	<b>XB4BD33</b>	<b>ZB4BZ103</b>   <b>ZB4BD3</b>	<b>XB4BD53</b>	<b>ZB4BZ103</b>   <b>ZB4BD5</b>		



<b>Type of operator</b>		<b>Key, n° 455</b>					
<b>Products</b>		<b>Complete</b>	<b>For user assembly</b>		<b>Complete</b>	<b>For user assembly</b>	
<b>Number and type of positions (2)</b>		<b>2 positions</b> stay put	<b>2 positions</b> stay put	<b>2 positions</b> stay put	<b>2 positions</b> stay put		
<b>References</b>	black ● NO	<b>XB4BG21</b>	<b>ZB4BZ101</b>   <b>ZB4BG2</b>	<b>XB4BG41</b>	<b>ZB4BZ101</b>   <b>ZB4BG4</b>		
<b>Number and type of positions</b>		<b>2 positions</b> spring return to left	<b>2 positions</b> spring return to left	<b>3 positions</b> stay put	<b>3 positions</b> stay put		
<b>References</b>	black ● NO black ● NO + NO	<b>XB4BG61</b> -	<b>ZB4BZ101</b>   <b>ZB4BG6</b> -   -	<b>XB4BG33</b>	-	<b>ZB4BZ103</b>   <b>ZB4BG3</b>	-

## Light functions

1



### Pilot lights

Type of head		<b>Circular bezel</b>					
Degree of protection		<b>Smooth lens cap</b>					
Mounting (mm)	panel cut-out mounting centres	IP 66 / Nema 4X, 13 / Class I Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended)					
Depth	below head	30 (horizontal) x 40 (vertical)					
Connection (1)		43					
Light source		Screw clamp terminals			Integral LED		
	<b>Products</b>	<b>Complete</b>			Direct supply for BA 9s bulb (not included)		
					<b>Complete</b>	<b>For user assembly</b>	
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white	<b>XB4BVB1</b>	<b>XB4BVG1</b>	<b>XB4BVM1</b>	<b>XB4BV61</b>	<b>ZB4BV6</b>	<b>ZB4BV01</b>
	green	<b>XB4BVB3</b>	<b>XB4BVG3</b>	<b>XB4BVM3</b>	<b>XB4BV63</b>	<b>ZB4BV6</b>	<b>ZB4BV03</b>
	red	<b>XB4BVB4</b>	<b>XB4BVG4</b>	<b>XB4BVM4</b>	<b>XB4BV64</b>	<b>ZB4BV6</b>	<b>ZB4BV04</b>
	yellow	<b>XB4BVB5</b>	<b>XB4BVG5</b>	<b>XB4BVM5</b>	<b>XB4BV65</b>	<b>ZB4BV6</b>	<b>ZB4BV05</b>
	blue	<b>XB4BVB6</b>	<b>XB4BVG6</b>	<b>XB4BVM6</b>	–	–	–



### Illuminated pushbuttons and selector switches

Type	Flush push, spring return, illuminated pushbuttons						
Light source		Integral LED			Direct supply for BA 9s bulb (not included)		
	<b>Products</b>	<b>Complete</b>			<b>Complete</b>	<b>For user assembly</b>	
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white  NO + NC	<b>XB4BW31B5</b>	<b>XB4BW31G5</b>	<b>XB4BW31M5</b>	<b>XB4BW3165</b>	<b>ZB4BW065</b>	<b>ZB4BW31</b>
	green  NO + NC	<b>XB4BW33B5</b>	<b>XB4BW33G5</b>	<b>XB4BW33M5</b>	<b>XB4BW3365</b>	<b>ZB4BW065</b>	<b>ZB4BW33</b>
	red  NO + NC	<b>XB4BW34B5</b>	<b>XB4BW34G5</b>	<b>XB4BW34M5</b>	<b>XB4BW3465</b>	<b>ZB4BW065</b>	<b>ZB4BW34</b>
	orange  NO + NC	<b>XB4BW35B5</b>	<b>XB4BW35G5</b>	<b>XB4BW35M5</b>	<b>XB4BW3565</b>	<b>ZB4BW065</b>	<b>ZB4BW35</b>
	blue  NO + NC	<b>XB4BW36B5</b>	<b>XB4BW36G5</b>	<b>XB4BW36M5</b>	–	–	–



Type	Double-headed pushbuttons with LED pilot light (1 flush green push, 1 projecting red push)			Illuminated selector switches (2 position stay put)			
Degree of protection	IP 66 - IP 69K			IP 66			
Light source	Integral LED			Integral LED			
	<b>Products</b>	<b>Complete</b>			<b>Complete</b>		
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	24 V AC/DC	110...120 V AC	230...240 V AC
References	green  NO + NC	–	–	–	<b>XB4BK123B5</b>	<b>XB4BK123G5</b>	<b>XB4BK123M5</b>
	red  NO + NC	–	–	–	<b>XB4BK124B5</b>	<b>XB4BK124G5</b>	<b>XB4BK124M5</b>
	orange  NO + NC	–	–	–	<b>XB4BK125B5</b>	<b>XB4BK125G5</b>	<b>XB4BK125M5</b>
	White  NO + NC	<b>XB4BW73731B5</b>	<b>XB4BW73731G5</b>	<b>XB4BW73731M5</b>	–	–	–

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

## Separate components and accessories



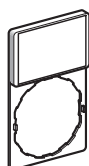
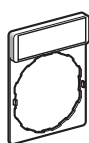
1

### Electrical blocks (1) (2)

	Single contact blocks		Light blocks with integral LED				Light block, direct supply	
<b>Rated operational characteristics</b>	AC-15, 240 V - 3 A		Consumption					
<b>Positive operation of contacts conforming to IEC/EN 60947-5-1</b>	NC contacts with positive opening operation		18 mA	24 V AC/DC				
			14 mA	120 V AC				
			14 mA	240 V AC				
	Screw clamp terminal	Spring clamp terminal	To combine with heads for integral LED				For BA 9s bulb (not included)	
			24 V AC/DC	110...120 V AC	230...240 V AC		250 V max., 2.4 W max.	
<b>References (Sold in lots of 5)</b>	NO	<b>ZBE101</b>	<b>ZBE1015</b>	white	<b>ZBVB1</b>	<b>ZBVG1</b>	<b>ZBVM1</b>	<b>ZBV6</b>
	NC	<b>ZBE102</b>	<b>ZBE1025</b>	green	<b>ZBVB3</b>	<b>ZBVG3</b>	<b>ZBVM3</b>	Colour provided by lens
				red	<b>ZBVB4</b>	<b>ZBVG4</b>	<b>ZBVM4</b>	
				orange	<b>ZBVB5</b>	<b>ZBVG5</b>	<b>ZBVM5</b>	
				blue	<b>ZBVB6</b>	<b>ZBVG6</b>	<b>ZBVM6</b>	



Diecast metal enclosures (Zinc alloy, usable depth 49 mm)		1 vertical row				2 vertical rows		
<b>Number of cut-outs</b>	Front face dimensions	1	2	3	4	2	4	6
<b>References</b>	80 x 80 mm	XAPM1201H2	-	-	-	XAPM1202H2	-	-
	80 x 130 mm	-	XAPM2202H2	XAPM2203H2	-	-	XAPM2204H2	-
	80 x 175 mm	-	-	XAPM3203H2	XAPM3204H2	-	-	XAPM3206H2



### Accessories (2)

#### Legend holders, 30 x 40 mm, for 8 x 27 mm legends

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

#### Legend holders, 30 x 50 mm, for 18 x 27 mm legends

Background colour	black or red	white or yellow
References (Sold in lots of 10)	Blank	<b>ZBY6101</b>

#### Ø 60 mm legend for mushroom head Emergency stop pushbutton

Background colour	yellow				
Marking	Blank	EMERGENCY STOP	ARRET D'URGENCE	NOT HALT	PARADA DE EMERGENCIA
References	<b>ZBY9140</b>	<b>ZBY9330</b>	<b>ZBY9130</b>	<b>ZBY9230</b>	<b>ZBY9430</b>

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

(2) Electrical blocks and accessories also for use with Harmony XB5plastic range

1



### Pushbuttons, spring return

Type of head		Circular bezel
Degree of protection		IP 66 / Nema 4X, 13 / Class II
Mounting (mm)	panel cut-out mounting centres	Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended) 30 (horizontal) x 40 (vertical)
Depth (mm)	below head	43
Connection (1)		Screw clamp terminals

Type of push		Flush			Flush, booted		
Unmarked	Products	Complete	For user assembly		Complete	For user assembly	
References	black ● NO	XB5AA21	ZB5AZ101	ZB5AA2	XB5AP21	ZB5AZ101	ZB5APA2
	green ● NO	XB5AA31	ZB5AZ101	ZB5AA3	XB5AP31	ZB5AZ101	ZB5APA3
	red ● NC	XB5AA42	ZB5AZ102	ZB5AA4	XB5AP42	ZB5AZ102	ZB5APA4
	yellow ● NO	XB5AA51	ZB5AZ101	ZB5AA5	XB5AP51	ZB5AZ101	ZB5APA5
	blue ● NO	XB5AA61	ZB5AZ101	ZB5AA6	XB5AP61	ZB5AZ101	ZB5APA6

Type of push		Flush			Mushroom head, Ø 40 mm		
With international marking	Products	Complete	For user assembly		Complete	For user assembly	
References	green ⓘ NO	XB5AA3311	ZB5AZ101	ZB5AA331	–	–	–
	red ⓘ NC	XB5AA4322	ZB5AZ102	ZB5AA432	–	–	–
	white ⓘ NO	XB5AA3341	ZB5AZ101	ZB5AA334	–	–	–
	black ⓘ NO	XB5AA3351	ZB5AZ101	ZB5AA335	–	–	–

Type of push		Projecting			Mushroom head, Ø 40 mm		
Unmarked	Products	Complete	For user assembly		Complete	For user assembly	
References	black ● NO	–	–	–	XB5AC21	ZB5AZ101	ZB5AC2
	red ● NC	XB5AL42	ZB5AZ102	ZB5AL4	–	–	–

Type of push		Double-headed pushbuttons			Triple-headed pushbuttons		
Degree of protection	Products	Complete	For user assembly		Complete	For user assembly	
With international marking		(A)			(B)		
References	(A) NO + NC	XB5AL73415	ZB5AZ105	ZB5AL7341	–	–	–
	(B) NO + NC + NO	–	–	–	XB5AA711237	ZB5AZ103 + ZBE102	ZB5AA71123

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



### Ø 40 mm mushroom head Emergency stop pushbuttons (2)

Type of push		Trigger action (EN/ISO 13850)		
Unmarked	Products	Complete	For user assembly	
References	red ● NO + NC	XB5AT845	ZB5AZ105	ZB5AT84
Type of push		Turn to release NO + NC		
References	red ● NO + NC	XB5AS8445	ZB5AZ105	ZB5AS844
Type of push		Key release NO + NC		
References	red ● NO + NC	XB5AS9445	ZB5AZ105	ZB5AS944

(2) Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850: to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5. Please consult your Regional Sales Office for a full explanation of these standards and directives.




















## Contact functions



1

### Selector switches and key switches

Type of head		Circular bezel			
Degree of protection		IP 66 / Nema 4X, 13 / Class II			
Mounting (mm)	panel cut-out mounting centres	Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended)			
Depth (mm)	below head	30 (horizontal) x 40 (vertical)			
Connection (1)		Screw clamp terminals			
Type of operator		Handle			
	Products	Complete	For user assembly	Complete	For user assembly
					
Number and type of positions		2 positions stay put 	2 positions stay put 	2 positions spring return to left 	2 positions spring return to left 
References	black ● NO	<b>XB5AD21</b>	<b>ZB5AZ101</b>   <b>ZB5AD2</b>	<b>XB5AD41</b>	<b>ZB5AZ101</b>   <b>ZB5AD4</b>
Number and type of positions		3 positions stay put 	3 positions stay put 	3 positions spring return to centre 	3 positions spring return to centre 
References	black ● NO + NO	<b>XB5AD33</b>	<b>ZB5AZ103</b>   <b>ZB5AD3</b>	<b>XB5AD53</b>	<b>ZB5AZ103</b>   <b>ZB5AD5</b>
Type of operator		Key, n° 455			
Number and type of positions		2 positions stay put 	2 positions stay put 	2 positions stay put 	2 positions stay put 
References	black ● NO	<b>XB5AG21</b>	<b>ZB5AZ101</b>   <b>ZB5AG2</b>	<b>XB5AG41</b>	<b>ZB5AZ101</b>   <b>ZB5AG4</b>

(1) The symbol  indicates key withdrawal position.



### Biometric switch

Degree of protection	IP65			
Dimension WxHxD (mm)	69,3 x 54 x 78,5 (total depth : front + rear)			
Mounting (mm)	Ø 22.5			
Depth (mm)	39,7			
Supply voltage	24 VDC			
Output	PNP - monostable		PNP - bistable	
Connection	2m cable	M12 connector	2m cable	M12 connector
References	<b>XB5S1B2L2</b>	<b>XB5S1B2M12</b>	<b>XB5S2B2L2</b>	<b>XB5S2B2M12</b>

	Body/fixing collar	Fixing nut	Bezel tool	Plate
	for electrical block (contact or light)	for head	for tightening fixing nut ZB5AZ901	anti-rotation
References	<b>ZB5AZ009</b> (Sold in lots of 10)	<b>ZB5AZ901</b> (Sold in lots of 10)	<b>ZB5AZ905</b>	<b>ZB5AZ902</b>

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

(2) Refer to page 9 for Electrical blocks and accessories used with Harmony XB5plastic range

1



### Pilot lights

Type of head		Circular bezel Smooth lens cap					
Degree of protection		IP 66 / Nema 4X, 13 / Class II					
Mounting (mm)	panel cut-out mounting centres	Ø 22.5 (22.4 <sup>+0.4</sup> <sub>0</sub> recommended)					
Depth	below head	30 (horizontal) x 40 (vertical)					
Connection (1)		Screw clamp terminals					
Light source		Integral LED			Direct supply for BA 9s bulb (not included)		
	Products	Complete			Complete	For user assembly	
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white	XB5AVB1	XB5AVG1	XB5AVM1	XB5AV61	ZB5AV6	ZB5AV01
	green	XB5AVB3	XB5AVG3	XB5AVM3	XB5AV63	ZB5AV6	ZB5AV03
	red	XB5AVB4	XB5AVG4	XB5AVM4	XB5AV64	ZB5AV6	ZB5AV04
	orange	XB5AVB5	XB5AVG5	XB5AVM5	XB5AV65	ZB5AV6	ZB5AV05
	blue	XB5AVB6	XB5AVG6	XB5AVM6	–	–	–



### Illuminated pushbuttons and selector switches

Type		Flush push, spring return, illuminated pushbuttons					
Light source		Integral LED			Direct supply for BA 9s bulb (not included)		
	Products	Complete			Complete	For user assembly	
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white  NO + NC	XB5AW31B5	XB5AW31G5	XB5AW31M5	XB5AW3165	ZB5AW065	ZB5AW31
	green  NO + NC	XB5AW33B5	XB5AW33G5	XB5AW33M5	XB5AW3365	ZB5AW065	ZB5AW33
	red  NO + NC	XB5AW34B5	XB5AW34G5	XB5AW34M5	XB5AW3465	ZB5AW065	ZB5AW34
	orange  NO + NC	XB5AW35B5	XB5AW35G5	XB5AW35M5	XB5AW3565	ZB5AW065	ZB5AW35
	blue  NO + NC	XB5AW36B5	XB5AW36G5	XB5AW36M5	–	–	–



Type		Double-headed pushbuttons with LED pilot light (1 flush green push, 1 projecting red push)			Illuminated selector switches (2 position stay put)		
Degree of protection		IP 66 - IP 69K			IP 66		
Light source		Integral LED			Integral LED		
	Products	Complete			Complete		
Supply voltage		24 V AC/DC	110...120 V AC	230...240 V AC	24 V AC/DC	110...120 V AC	230...240 V AC
References	green  NO + NC	–	–	–	XB5AK123B5	XB5AK123G5	XB5AK123M5
	red  NO + NC	–	–	–	XB5AK124B5	XB5AK124G5	XB5AK124M5
	orange  NO + NC	–	–	–	XB5AK125B5	XB5AK125G5	XB5AK125M5
	white  NO + NC	XB5AW73731B5	XB5AW73731G5	XB5AW73731M5	–	–	–

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

Separate components and accessories: see previous page.

(1):

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



### Complete stations with 1 pushbutton, selector switch or key switch

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

<b>Degree of protection</b>	IP 65 / Nema 4X and 13 / Class II				
<b>Dimensions (mm)</b>	W x H x D 68 x 68 x 113 max. (with key release Ø 40 mushroom head pushbutton)				
<b>Fixing (mm)</b>	2 x Ø 4.3 on 54 mm centres				
<b>Function</b>			<b>1 Start or Stop function</b>		<b>1 Start-Stop function</b>
	<b>Marking</b>		On spring return push		On legend holder and legend below head
<b>Number and type of pushbutton/selector switch/key switch</b>			1 flush green p/b	1 projecting red p/b	1 2 position stay put selector switch or key switch
					Black handle
					Key n° 455 (key withdrawal LH pos.)
<b>References</b>	NO	I	XALD102H7	–	–
		O - I	–	–	XALD134H7
		O	–	XALD115H7	–
					XALD144H7

(1) Empty enclosures:

Basic reference: XALK0●H7, replace the ● by the number of cut-outs required (see cut-out table above)



<b>Function</b>	<b>Emergency stop (2)</b> (light grey RAL 7035 base with yellow RAL 1012 lid)			
<b>Number and type of mushroom head pushbutton</b>	1 red Ø 40 head, turn to release		1 red Ø 40 head, key release	
<b>Latching mechanism</b>	Trigger action (EN/ISO 13850)		Trigger action (EN/ISO 13850)	
<b>References</b>	NC	XALK178H7	XALK188H7	
	NC + NC	XALK178FH7	XALK188FH7	
	NO + NC	XALK178EH7	XALK188EH7	
	NC + NC + NO	XALK178GH7	XALK188GH7	

(2) Emergency stop trigger action and mechanical latching pushbuttons conform to standards EN/IEC 60204-1 and EN/ISO 13850, to Machinery Directive 2006/42/EC and to standard EN/IEC 60947-5-5. Please consult your Regional Sales Office for a full explanation of these standards and directives.



(1) Empty enclosures:

Basic reference: XALD0●H7, replace the ● by the number of cut-outs required (see cut-out table above)

### Complete stations with 2 and 3 pushbuttons or 2 pushbuttons + 1 pilot light

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











<b>Dimensions (mm)</b>	W x H x D 2-way control stations: 68 x 106 x 62; 3-way control stations: 68 x 136 x 87				
<b>Fixing (mm)</b>	2-way control stations: 2 x Ø 4.3 on 54 x 68 centres; 3-way control stations: 2 x Ø 4.3 on 54 x 98 centres				
<b>Function</b>			<b>Start-Stop functions</b>		<b>2 functions</b>
	<b>Marking</b>		On spring return push		<b>3 functions</b>
<b>Number and type of pushbutton/pilot light</b>			1 flush green p/b	1 flush green pushbutton	1 flush white p/b
			1 flush red p/b	1 flush red pushbutton	1 flush red p/b
				1 red pilot light with integral LED	1 Ø 30 red mushroom head p/b
				24 V AC/DC	1 flush black p/b
<b>References</b>	NO + NC	I - O	XALD213H7	XALD363BH7	–
		Start - Stop	XALD215H7	–	–
	NO + NO	⇕	–	–	XALD222H7
	NO + NC + NO	⇕	–	–	–
		⇕			XALD324H7
		⇕			XALD328H7

<b>Accessories</b>	<b>Standard contact blocks</b>		<b>Light blocks with integral LED, colour red</b>	
<b>Description</b>	NO contact	NC contact	24 V AC/DC	230 V AC
<b>References</b>	ZENL1111	ZENL1121	ZALVB4	ZALVM4

1







### Pushbuttons

<b>Type of head</b>		<b>Flush or projecting push</b>	circular	
<b>Degree of protection</b>			IP 65, class II	
<b>Mounting (mm)</b>	panel cut-out mounting centres		Ø 22.4 (0 +0.1) 30 (horizontal) x 40 (vertical)	
<b>Dimensions (mm)</b>	Ø x Depth (below head)		Ø 29 x 41.5 (Ø 40 x 41.5 for Emergency stop)	
<b>Connection</b>			Screw clamp terminals, 1 x 0.34 mm <sup>2</sup> to 1 x 1.5 mm <sup>2</sup>	
<b>Type of push</b>		<b>Flush, spring return</b>	<b>Flush, push and latching</b>	
<b>References (Sold in lots of 10)</b>	white 	NO	<b>XB7NA11</b>	–
		NO + NC	<b>XB7NA15</b>	–
	black 	NO	<b>XB7NA21</b>	<b>XB7NH21</b>
		NO + NC	<b>XB7NA25</b>	<b>XB7NH25</b>
	green 	NO	<b>XB7NA31</b>	<b>XB7NH31</b>
		NO + NC	<b>XB7NA35</b>	<b>XB7NH35</b>
	red 	NC	<b>XB7NA42</b>	–
		NO + NC	<b>XB7NA45</b>	–
	yellow 	NO	<b>XB7NA81</b>	–
	<b>Type of push</b>		<b>Flush, spring return</b>	<b>Projecting, spring return</b>
<b>References</b>	green 	NO	<b>XB7NA3131</b>	–
	red 	NC	–	<b>XB7EL4232</b>
	white 	NO	<b>XB7NA11341</b>	–
	black 	NO	<b>XB7NA21341</b>	–
		NO + NC	<b>XB7NA25341</b>	–



### Selector switches and key switches

<b>Type of operator</b>		<b>Black handle</b>		<b>Ronis key, n° 455</b>	
<b>Number and type of positions</b>		<b>2 positions</b> stay put 	<b>3 positions</b> stay put 	<b>2 positions</b> stay put 	<b>3 positions</b> stay put 
<b>References (Sold in lots of 10)</b>	NO	<b>XB7ND21</b>	–	<b>XB7NG21</b>	–
	NO + NC	<b>XB7ND25</b>	–	–	–
	2 NO	–	<b>XB7ND33</b>	–	<b>XB7NG33</b>



### Ø 40 mushroom head pushbuttons (1)

<b>Type of push</b>		<b>Turn to release</b>	<b>Key release, Ronis 455</b>	
<b>References (Sold in lots of 10)</b>	red 	NC	<b>XB7ES542P</b>	<b>XB7ES142P</b>
	red 	NO + NC	<b>XB7ES545P</b>	<b>XB7ES145P</b>

(1) Mushroom head switching off mechanical latching pushbuttons conform to standard IEC 60364-5-53 and EN/IEC 60947-5-5. For mushroom trigger action and mechanical latching head Emergency stop pushbuttons conforming to standard EN/IEC 60204-1 and EN/ISO 13850, to Machinery directive 2006/42/EC and standard EN/IEC 60947-5-5, use an Emergency stop type XB5A●●●●● or XB5AS●●●●● from the Harmony® range. See page 2/10.


## Contact functions and light functions

(1):

Supply voltage for integral LED light source only	Letter (●)
24 V AC/DC	B
120 V AC	G
230 V AC	M



### Illuminated pushbuttons

<b>Type of head</b>		<b>Projecting push</b>	circular
<b>Degree of protection</b>			IP 65, class II
<b>Mounting (mm)</b>	<b>panel cut-out</b>		Ø 22.4 (0 +0.1)
	mounting centres		30 (horizontal) x 40 (vertical)
<b>Dimensions (mm)</b>	Ø x Depth (below head)		Ø 29 x 41.5, (Ø 40 x 41.5 for Emergency stop)
<b>Connection</b>			Screw clamp terminals, 1 x 0.34 mm <sup>2</sup> to 1 x 1.5 mm <sup>2</sup>
<b>Light source</b>		Integral LED	Ba 9s base fitting Incandescent bulb direct supply (bulb not included)
<b>Type of push</b>		<b>Spring return</b>	
<b>References (Sold in lots of 10)</b>	green ● NO	<b>XB7NW33●1 (1)</b>	<b>XB7NW3361</b>
	red ● NO	<b>XB7NW34●1 (1)</b>	<b>XB7NW3461</b>
	● NC	<b>XB7NW34●2 (1)</b>	–
	orange ● NO	<b>XB7NW35●1 (1)</b>	–
	blue ● NO	<b>XB7NW36●1 (1)</b>	–
	clear ● NO	<b>XB7NW37●1 (1)</b>	–
	yellow ● NO	<b>XB7NW38●1 (1)</b>	<b>XB7NW3561</b>
<b>Type of push</b>		<b>Push and latching</b>	
<b>References (Sold in lots of 10)</b>	green ● NO	<b>XB7NH03●1 (1)</b>	<b>XB7NH0361</b>
	red ● NO	<b>XB7NH04●1 (1)</b>	<b>XB7NH0461</b>
	● NC	<b>XB7NH04●2 (1)</b>	–
	yellow ● NO	<b>XB7NH08●1 (1)</b>	<b>XB7NH0861</b>



### Pilot lights (2)

<b>Light source</b>		Integral LED	Ba 9s base fitting incandescent bulb direct supply (bulb not included)	Incandescent bulb direct through resistor (bulb included)
<b>Supply voltage</b>		24VAC/DC or 120VAC or 230...240VAC	6 or 24 V DC, or 130 V AC	230 V AC
<b>References (Sold in lots of 10)</b>	clear ●	<b>XB7EV07● (1)</b>	<b>XB7EV67</b>	<b>XB7EV77</b>
	green ●	<b>XB7EV03● (1)</b>	<b>XB7EV63</b>	<b>XB7EV73</b>
	red ●	<b>XB7EV04● (1)</b>	<b>XB7EV64</b>	<b>XB7EV74</b>
	yellow ●	<b>XB7EV05● (1)</b>	<b>XB7EV65</b>	<b>XB7EV75</b>
	blue ●	<b>XB7EV06● (1)</b>	<b>XB7EV66</b>	<b>XB7EV76</b>
	orange ●	<b>XB7EV08● (1)</b>	<b>XB7EV68</b>	<b>XB7EV78</b>

### Incandescent bulbs, long life

**BA 9s base fitting, Ø 11 mm max., length 28 mm max.**

<b>References</b>	6 V (1.2 W)	24 V (2 W)	130 V (2.4 W)
	<b>DL1CB006</b>	<b>DL1CE024</b>	<b>DL1CE130</b>

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

(2) Alternative connection: 1 x 6.35 and 2 x 2.8 mm Faston connectors.

1



#### Pushbuttons, spring return

Type of push		Flush	Projecting	Projecting (high guard)
Colour of push		Multi-colour (set of 7 clip-in coloured caps)		
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II		
Mounting (mm)	panel cut-out mounting centres	Ø 31		
Depth below head (mm)		57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)		
Connection		Screw clamp terminals		
References	CO	9001KR1UH13	9001KR3UH13	9001KR2UH13
	NO	9001KR1UH5	9001KR3UH5	9001KR2UH5



Mushroom head pushbuttons, latching (1)	Emergency switching off	Emergency stop
Type of push	Push-pull Ø 41 mushroom head   Ø 35 mushroom head	Turn-to-Release, trigger action Ø 40 red mushroom head
Degree of protection	IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II	
Mounting (mm)	panel cut-out mounting centres	57,2 x 44,5 (without legend plate), 100 x 100 ((with legend plate 9001KN8330) (2))
Depth below head (mm)	42	60
Connection	Screw clamp terminals	
References		9001KR16
	–	–
	CO	9001KR9R94H13   9001KR9R20H13
	NC	9001KR9RH6   9001KR9R20H6
	2NO + 2NC	–   9001KR16H2
	NO	–   9001KR16H13

(1) Mushroom head switching off mechanical latching pushbuttons conform to standard IEC 60364-5-53 and EN/IEC 60947-5-5. Mushroom trigger action and mechanical latching head Emergency stop pushbuttons conforming to standard EN/IEC 60204-1 and EN/ISO 13850, to Machinery directive 2006/42/EC and standard EN/IEC 60947-5-5.  
 (2) For yellow circular Emergency Stop legend plates: see page 2/19



#### Selector switches and key switches

Type of operator	positions (2)	Long black handle	3 - spring return	2 - stay put	2 - spring return	3 - stay put	Key, n° 455
Number and type of positions							
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II					
Mounting (mm)	panel cut-out mounting centres	Ø 31					
Depth below head (mm)		57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)					
Connection		Screw clamp terminals					
References	NO	–	9001KS11FBH5	9001KS34FBH5	–	–	–
	CO	9001KS53FBH1	–	–	9001KS43FBH1	9001KS11K1RH1	–

(2) The symbol indicates key withdrawal position.

## Light functions



1

### Pilot lights

<b>Type of head</b>		Smooth lens cap			
<b>Degree of protection</b>		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
<b>Mounting (mm)</b>	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
<b>Depth below head (mm)</b>		42			
<b>Connection</b>		Screw clamp terminals			
<b>Type of light block</b>		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
<b>References</b>		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
	green ●	<b>9001KP35LGG9</b>	<b>9001KP36LGG9</b>	<b>9001KP38LGG9</b>	<b>9001KP7G9</b>
	red ●	<b>9001KP35LRR9</b>	<b>9001KP36LRR9</b>	<b>9001KP38LRR9</b>	<b>9001KP7R9</b>
	yellow ●	<b>9001KP35LYA9</b>	<b>9001KP36LYA9</b>	<b>9001KP38LYA9</b>	<b>9001KP7A9</b>



### Illuminated pushbuttons, spring return

<b>Type of head</b>		Spring return flush push			
<b>Degree of protection</b>		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
<b>Mounting (mm)</b>	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
<b>Depth below head (mm)</b>		42			
<b>Connection</b>		Screw clamp terminals			
<b>Type of light block</b>		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
<b>References</b>		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
	green ●	CO <b>9001K3L35LGGH13</b>	<b>9001K3L36LGGH13</b>	<b>9001K3L38LGGH13</b>	<b>9001K2L7RH13</b>
	red ●	CO <b>9001K3L35LRRH13</b>	<b>9001K3L36LRRH13</b>	<b>9001K3L38LRRH13</b>	<b>9001K2L7GH13</b>
	yellow ●	CO <b>9001K3L35LYAH13</b>	<b>9001K3L36LYAH13</b>	<b>9001K3L38LYAH13</b>	<b>9001K2L7AH13</b>



### Illuminated Ø 41 mushroom head pushbuttons, latching, high luminosity LED

<b>Degree of protection</b>		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
<b>Mounting (mm)</b>	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
<b>Depth below head (mm)</b>		42			
<b>Connection</b>		Screw clamp terminals			
<b>Type of light block</b>		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC/DC
<b>Type of head</b>		2 position, push-pull			
<b>References</b>	red ●	CO <b>9001KR9P35RH13</b>	<b>9001KR9P36RH13</b>	<b>9001KR9P38RH13</b>	<b>9001KR9P7RH13</b>
<b>Type of head</b>		3 position, push-pull (pull: spring return, centre: stay put, push: spring return)			
<b>References</b>	red ●	NC + NC late break <b>9001KR8P35RH25</b>	<b>9001KR8P36RH25</b>	<b>9001KR8P38RH25</b>	<b>9001KR8P7RH25</b>

1



#### Pushbuttons, spring return

Type of push		Flush	Projecting	Projecting (high guard)
Colour of push		Multi-colour (set of 7 clip-in coloured caps)		
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II		
Mounting (mm)	panel cut-out mounting centres	Ø 31		
Depth below head (mm)		57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)		
Connection		Screw clamp terminals		
References	CO	9001SKR1UH13	9001SKR3UH13	9001SKR2UH13
	NO	9001SKR1UH5	9001SKR3UH5	9001SKR2UH5



Type	Selector switches			Mushroom head pushbuttons (1) Emergency stop	
Type of operator	positions	Long black handle 2 - stay put	2 - spring return	3 - stay put	Turn-to-Release, trigger action Ø 40 red mushroom head
Number and type of positions					
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II			IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 6, 12 and 13 / Class III
Mounting (mm)	panel cut-out mounting centres	Ø 31			
Depth below head (mm)		57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			57,2 x 44,5 (without legend plate), 100 x 100 ((with legend plate 9001KN8330) (2)
Connection		Screw clamp terminals			60
References	-	-	-	-	9001SKR16
	NO	9001SKS11FBH5	9001SKS34FBH5	-	9001SKR16H13
	CO	-	-	9001SKS43FBH1	-
	2NO + 2NC	-	-	-	9001SKR16H2

(1) Mushroom trigger action and mechanical latching head Emergency stop pushbuttons conforming to standard EN/IEC 60204-1 and EN/ISO 13850, to Machinery directive 2006/42/EC and standard EN/IEC 60947-5-5.

(2) For yellow circular Emergency Stop legend plates: see page 2/19



#### Pilot lights

Type of head		Smooth lens cap			
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II			
Mounting (mm)	panel cut-out mounting centres	Ø 31			
Depth below head (mm)		57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Connection		Screw clamp terminals			
Type of light block		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
References	green	24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
	red	9001SKP35LGG9	9001SKP36LGG9	9001SKP38LGG9	9001SKP7G9
	yellow	9001SKP35LRR9	9001SKP36LRR9	9001SKP38LRR9	9001SKP7R9
		9001SKP35LYA9	9001SKP36LYA9	9001SKP38LYA9	9001SKP7A9



## Accessories



1

### Contact blocks with protected terminals

<b>Type of contact</b>		Single contact blocks
<b>Connection</b>		Screw clamp terminals
<b>References</b>	CO	<b>9001KA1</b>
	NO	<b>9001KA2</b>
	NC	<b>9001KA3</b>
	CO, late break	<b>9001KA4</b>
	NC, late break	<b>9001KA5</b>
	NO, early make	<b>9001KA6</b>



### Enclosures

Type	Number of Ø 30 mm cut-outs	NEMA ratings	Reference
Aluminium	1	1, 3, 4, 6, 12, 13	<b>9001KY1</b>
	2	1, 3, 4, 6, 12, 13	<b>9001KY2</b>
	3	1, 3, 4, 6, 12, 13	<b>9001KY3</b>
	4	1, 3, 4, 6, 12, 13	<b>9001KY4</b>
Stainless steel	1	1, 3, 4, 4X, 13	<b>9001KYSS1</b>
	2	1, 3, 4, 4X, 13	<b>9001KYSS2</b>
	3	1, 3, 4, 4X, 13	<b>9001KYSS3</b>

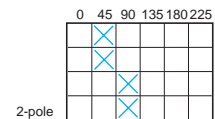
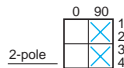
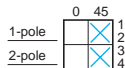


### Legends

Legends		44 x 43 mm	57 x 57 mm	Ø 60	Ø 90
<b>Type</b>	Colour of legend	Aluminium black background	Plastic white background	Plastic Yellow background	
<b>Marking</b>	Blank	<b>9001KN200</b>	<b>9001KN100WP</b>	<b>9001KN9100</b>	<b>9001KN8100</b>
	START	<b>9001KN201</b>	<b>9001KN101WP</b>	–	–
	STOP (red background)	<b>9001KN202</b>	<b>9001KN102RP</b>	–	–
	FORWARD	<b>9001KN206</b>	<b>9001KN106WP</b>	–	–
	REVERSE	<b>9001KN207</b>	<b>9001KN107WP</b>	–	–
	RESET	<b>9001KN223</b>	<b>9001KN123WP</b>	–	–
	PULL TO START/ PUSH TO STOP	<b>9001KN379</b>	<b>9001KN179WP</b>	–	–
	EMERGENCY STOP	–	–	<b>9001KN9330</b>	<b>9001KN8330</b>
	ARRET D'URGENCE	–	–	<b>9001KN9330F</b>	<b>9001KN8330F</b>
	PARADA DE EMERGENCIA	–	–	<b>9001KN9330S</b>	<b>9001KN8330S</b>



positions (°)

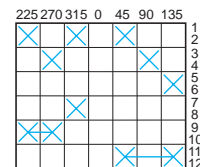
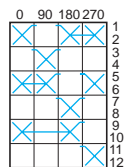
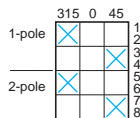


### Cam switches, K1 / K2 series

Function	Switches	ON-OFF switches	Stepping switches
	45° switching angle	90° switching angle	with "0" position
Degree of protection front face	IP 65 (1)	IP 65 (1)	IP 65 (1)
Conventional thermal current (Ith)	12 A   20 A	12 A   20 A	12 A   20 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2	2	2 + "0" position
Number of poles	2	2	2
Dimensions of front plate (mm)	45 x 45	45 x 45	45 x 45
Front mounting method	Multifixing plate, 45 x 45 mm	<b>K1B002ALH</b>   <b>K2B 002ALH</b>	<b>K1B1002HLH</b>   <b>K2B 1002HLH</b>   <b>K1D012QLH</b>   <b>K2D012QLH</b>
	Plastic mounting plate for Ø 22 mm hole	<b>K1B002ACH</b>   <b>K2B 002ACH</b>	<b>K1B1002HCH</b>   <b>K2B 1002HCH</b>   <b>K1D012QCH</b>   <b>K2D012QCH</b>



positions (°)



### Cam switches, K1 / K2 series

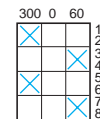
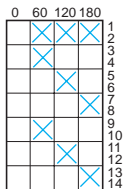
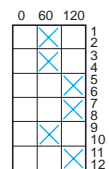
Function	Changeover switches	Ammeter switches	Voltmeter switches
Degree of protection front face	IP 65 (1)	IP 65 (1)	IP 65 (1)
Conventional thermal current (Ith)	12 A   20 A	12 A   20 A	12 A   20 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2 + "0" position	3 + "0" position (3 circuits + "0" position)	6 + "0" position (measurements between 3 phases & N + "0" pos.)
Number of poles	2	4	7
Dimensions of front plate (mm)	45 x 45	45 x 45	45 x 45
Front mounting method	Multifixing plate, 45 x 45 mm	<b>K1D002ULH</b>   <b>K2D002ULH</b>	<b>K1F003MLH</b>   to be compiled *
	Plastic mounting plate for Ø 22 mm hole	<b>K1D002UCH</b>   <b>K2D002UCH</b>	<b>K1F003MCH</b>   to be compiled *
			<b>K1F027MLH</b>   to be compiled *
			<b>K1F027MCH</b>   to be compiled *

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

(\*) Please consult your Schneider Electric agency.



positions (°)



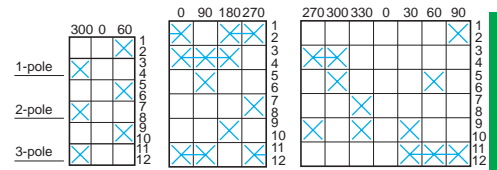
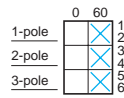
### Cam switches with key operated lock, K1 series

Function	Stepping switches	Run switches	Changeover switches + "0" pos.
Degree of protection front face	IP 65	IP 65	IP 65
Conventional thermal current (Ith)	12 A	12 A	12 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2 + "0" position	3 + "0" position	2 + "0" position
Number of poles	3	2	2
Dimensions of front plate (mm)	55 x 100	55 x 100	55 x 100
Colour of handle	red   black	red   black	red   black
Front mounting method	Ø 22 mm hole + Ø 43.5 mm hole		
	<b>K1F022QZ2</b>   <b>K1F022QZ4</b>	<b>K1G043RZ2</b>   <b>K1G043RZ4</b>	<b>K1D002UZ2</b>   <b>K1D002UZ4</b>

## 10 to 150 A ratings



positions (°)



### Cam switches, K10series

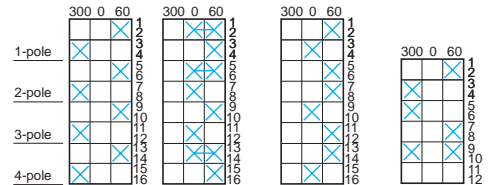
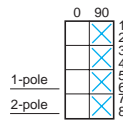
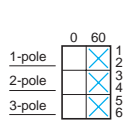
Function	Switches			Changeover switches		Ammeter switches	Voltmeter switches
Degree of protection front face	IP 65			with "0" position		IP 65	IP 65
Conventional thermal current (Ith)	10 A			10 A		10 A	10 A
Rated insulation voltage (Ui) conforming to IEC60947-1	440 V			440 V		440 V	440 V
Number of positions	2			2 + "0" position		3 + "0" pos. (1)	6 + "0" pos. (2)
Number of poles	1	2	3	2	3	3	3
Dimensions of front plate (mm)	30 x 30			30 x 30		30 x 30	30 x 30
Front mounting method By Ø 16 mm or 22 mm hole	K10A001ACH	K10B002ACH	K10C003ACH	K10D002UCH	K10F003UCH	K10F003MCH	K10F027MCH

(1) (3 circuits + "0" position).

(2) (Measurements between 3 phases and N + "0" position).



positions (°)



### Cam switches, K30series

Function	Switches	Switches	Changeover	Starting	Starting	Reversing
Degree of protection front face	IP 40	ON-OFF	with "0" position	star-delta	2-speed	IP 40
Conventional thermal current (Ith)	32 A	IP 40	IP 40	IP 40	IP 40	IP 40
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	32 A	690 V	690 V	690 V	690 V
Number of positions	2	IP 40	3	3	3	3
Number of poles	3	2	4	3	3	3
Dimensions of front plate (mm)	64 x 64	3	64 x 64	64 x 64	64 x 64	64 x 64
Front mounting method Multifixing	K30C003AP (3)	4	K30D004HP (3)	K30H004UP (3)	K30H001YP (3)	K30H004PP (3)
						K30E003WP (3)

(3) To order switches with other thermal current ratings (50, 63, 115, 150 A): replace the number 30 in the reference by 50, 63, 115 or 150 respectively.

Example: a switch with a 32 A current rating, for example K30C003AP, becomes K50 C003AP for a current rating of 50 A.

## Accessories for cam switches K1/K2

### Rubber seals

For IP 65 degree of protection	For use with heads	with 45 x 45 mm front plate Ø 22 mm hole or 4 hole front mtg.	with 60 x 60 mm front plate Ø 22 mm hole or 4 hole front mtg.	with 45 x 45 mm front plate multifixing
References (Sold in lots of 5)		KZ65	KZ66	KZ73

1



### Ø 40 mm / Up to IP54

Complete, pre-wired tower lights		Steady light			Steady / Flashing light <sup>(1)</sup>	
Light source (included)		LEDs			LEDs	
Base mount		Base mounting	Support tube mounting, 17 mm		Support tube mounting, 17 mm	
Buzzer		Without buzzer			With buzzer + flashing light	
Degree of protection		up to IP54			up to IP54	
Voltage		24V AC/DC	24V AC/DC	100-240V AC	24V AC/DC	100 - 240V AC
References (2)	Red	XVC4B1K	XVC4B1	XVC4M1	XVC4B15S	XVC4M15S
	Red / orange	XVC4B2K	XVC4B2	XVC4M2	XVC4B25S	XVC4M25S
	Red / Orange / green	XVC4B3K	XVC4B3	XVC4M3	XVC4B35S	XVC4M35S
	red / orange / green / blue	XVC4B4K	XVC4B4	XVC4M4	XVC4B45S	XVC4M45S
	red / orange / green / blue / Clear	XVC4B5K	XVC4B5	XVC4M5	XVC4B55S	XVC4M55S



### Ø 60 mm / Up to IP54

Complete, pre-wired tower lights		Steady light			Steady / Flashing light <sup>(1)</sup>		
Light source (included)		LEDs			LEDs		
Base mount		Base mounting	Support tube mounting, 22 mm		Support tube mounting, 22 mm	Base mounting	
Buzzer		Without buzzer			With buzzer + flashing light		
Degree of protection		up to IP54			up to IP54		
Voltage		24V AC/DC	24V AC/DC	100-240V AC	24V AC/DC	100 - 240V AC	
References (2)	Red	XVC6B1K	XVC6B1	XVC6M1 <sup>(3)</sup>	XVC6B15S <sup>(3)</sup>	XVC6M15S	XVC6M15SK
	Red / orange	XVC6B2K	XVC6B2	XVC6M2 <sup>(3)</sup>	XVC6B25S <sup>(3)</sup>	XVC6M25S	XVC6M25SK
	Red / Orange / green	XVC6B3K	XVC6B3	XVC6M3 <sup>(3)</sup>	XVC6B35S <sup>(3)</sup>	XVC6M35S	XVC6M35SK
	red / orange / green / blue	XVC6B4K	XVC6B4	XVC6M4 <sup>(3)</sup>	XVC6B45S <sup>(3)</sup>	XVC6M45S	XVC6M45SK
	red / orange / green / blue / Clear	XVC6B5K	XVC6B5	XVC6M5 <sup>(3)</sup>	XVC6B55S <sup>(3)</sup>	XVC6M55S	XVC6M55SK

(3) To order products for base mounting, add the letter **K** to the end of the reference (ex. XVC6M1K)



### Ø 100 mm / Up to IP54

Complete, pre-wired tower lights		Steady / Flashing light <sup>(1)</sup>					
Light source (included)		LEDs					
Base mount		Base mounting					
Buzzer		Without buzzer		With buzzer + flashing light			
Degree of protection		up to IP54		up to IP54			
Voltage		24V DC	100-240V AC	24V DC	100-240V AC	24V DC	100 - 240V AC
References (2)	Red	XVC1B1K	XVC1M1K	XVC1B1SK	XVC1M1SK	XVC1B1HK	XVC1M1HK
	Red / orange	XVC1B2K	XVC1M2K	XVC1B2SK	XVC1M2SK	XVC1B2HK	XVC1M2HK
	Red / Orange / green	XVC1B3K	XVC1M3K	XVC1B3SK	XVC1M3SK	XVC1B3HK	XVC1M3HK
	red / orange / green / blue	XVC1B4K	XVC1M4K	XVC1B4SK	XVC1M4SK	-	-
	red / orange / green / blue / Clear	XVC1B5K	XVC1M5K	XVC1B5SK	XVC1M5SK	-	-

(1) Flashing function can be simply selected/programmed by wiring

(2) The colours are listed in the same order as the mounting order of the illuminated units (from top to bottom)



Ø 45 mm / IP40

Illuminated beacons XVDLS		Steady light	Flashing light
Light source		Incandescent BA 15d bulb, 5 W max. (not included)	"Flash" discharge tube, 0.5 J
Degree of protection		IP 40	
References (1)	24...230 V AC/DC	XVDLS3●	–
	24 V AC/DC	–	XVDLS6B●
	120 V AC	–	XVDLS6G●
	230 V AC	–	XVDLS6M●

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

Accessories

XVDLS

Incandescent bulbs, with BA 15d base	Beacons XVDLS		
Description	24 V, 4 W	120 V, 5 W	230 V, 5 W
References	DL1BEBS	DL1BEGS	DL1BEMS



XVC4 / XVC6

Mounting accessories	Tower lights Ø 40 mm, XVC4			Tower lights Ø 60 mm, XVC6		
	Support tube mounting			Support tube mounting	Base mounting	Support tube mounting
Diameter (mm)	Ø 90	Ø 84	–	Ø 100	Ø 84	–
For use with	–	–	–	XVC6●●and XVC6●●5S	XVC6●●K and XVC6●●5SK	XVC6B●●and XVC6B●●5S, XVC6M●●and XVC6M●●5S
Height to be added (mm)	32	24,5	82	30	21,6	82
References	Metal fixing plate	XVCZ11	–	XVCZ02	XVCZ12	–
	Plastic fixing plate	–	XVCZ01	–	–	–
	Wall mounting bracket	–	–	XVCZ31	–	XVCZ32



XVC1

Mounting accessories	Tower lights Ø 100 mm, XVC1			
Description	Vertical support			
Diameter (mm)	Ø 140	Ø 140	–	–
For use with	XVC1●●K and XVC1●●SK	XVC1●●HK (with siren)	XVC1●●K and XVC1●●SK	XVC1●●HK (with siren)
Height to be added (mm)	300	306	–	–
References	Metal fixing plate (2)	XVCZ13	XVCZ14	–
	Metal fixing bracket	–	–	XVCZ23
				XVCZ24

(2) Chromium plated-steel extension tube

1



Ø 70 mm / Up to IP66

Illuminated beacons XVBL		Steady light		Flashing light	
<b>Light source</b>		Incandescent BA 15d bulb, 10 W max. (not included)	Protected BA 15d LED (included)	Protected BA 15d LED (included)	"Flash" discharge tube 5 J (2)
<b>Degree of protection</b>		IP 66			
<b>References (1)</b>	12...250 V AC/DC	<b>XVBL3●</b>	–	–	–
	24 V AC/DC	–	<b>XVBL0B●</b>	<b>XVBL1B●</b>	<b>XVBL6B●</b>
	120 V AC	–	<b>XVBL0G●</b>	<b>XVBL1G●</b>	<b>XVBL6G●</b>
	230 V AC	–	<b>XVBL0M●</b>	<b>XVBL1M●</b>	<b>XVBL6M●</b>



Ø 70 mm / Up to IP66

Tower lights XVBC comprising 2 to 5 signalling units (3)		Base units	Steady light		Flashing light	"Flash" light	Audible units (90 db at 1 m)
<b>Light source</b>		–	Incandescent BA 15d bulb, 10 W max. (not included)	Integral protected LED	Integral protected LED	"Flash" discharge tube 5 J (2)	–
<b>Degree of protection</b>		IP 66					
<b>Base unit references</b>	with cover	<b>XVBC21 (4)</b>	–	–	–	–	–
	without cover	<b>XVBC07 (5)</b>	–	–	–	–	–
<b>References (2)</b>	12... 230 V AC/DC	–	<b>XVBC3●</b>	–	–	–	–
	24 V AC/DC	–	–	<b>XVBC2B●</b>	<b>XVBC5B●</b>	<b>XVBC6B●</b>	–
	120 V AC	–	–	<b>XVBC2G●</b>	<b>XVBC5G●</b>	<b>XVBC6G●</b>	–
	230 V AC	–	–	<b>XVBC2M●</b>	<b>XVBC5M●</b>	<b>XVBC6M●</b>	–
<b>Audible unit references</b>	12...48 V AC/DC	–	–	–	–	–	<b>XVBC9B</b>
unidirectional	120...230 V AC	–	–	–	–	–	<b>XVBC9M</b>

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

(2) To order a lens unit with a 10 J discharge tube, replace the number 6 by 8 in the reference (example: XVBL6B● becomes XVBL8B●).

(3) A tower light comprises: 1 base unit + 1 to 5 signalling units maximum.

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

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



### Ø 70 mm / Up to IP54

Illuminated beacons XVEL		Steady light		Flashing light
<b>Light source</b>		Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	"Flash" discharge tube, 1 J
<b>Degree of protection</b>		IP 42/IP 54 (with sealing kit)		
<b>References (1)</b>	24... 240 V AC/DC	XVEL3●	–	
	24 V AC/DC	–	XVEL2B●	XVEL6B●
	120 V AC	–	XVEL2G●	XVEL6G●
	230 V AC	–	XVEL2M●	XVEL6M●



### Ø 70 mm / Up to IP54

Indicator banks XVEC comprising 2 to 5 signalling units (2)		Base units	Steady light		Flashing light	"Flash" light	Audible units (85 db at 1 m)
<b>Light source</b>		–	Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	Integral LED	"Flash" discharge tube 1 J	–
<b>Degree of protection</b>		IP 42/IP 54 (with sealing kit)					
<b>Base unit references</b>	IP 42	XVEC21	–	–	–	–	–
	IP 54	XVEC21P	–	–	–	–	–
<b>Lens unit references (1)</b>	24...230 V AC/DC	–	XVEC3●	–	–	–	–
	24 V AC/DC	–	–	XVEC2B●	XVEC5B●	XVEC6B●	XVEC9B
	120 V AC	–	–	XVEC2G●	XVEC5G●	XVEC6G●	XVEC9G
	230 V AC	–	–	XVEC2M●	XVEC5M●	XVEC6M●	XVEC9M

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

(2) A tower light comprises: 1 base unit + 1 to 5 signalling units maximum.

1

Ø 50 mm / IP65



Tower lights XVP comprising 2 to 5 signalling units (4), black clamping ring (5)		Base unit	Steady or flashing light signalling	"Flash" light signalling		Audible units (55...85 dB at 1 m)
Light source		–	Incandescent BA 15d bulb, 7 W max. (not included)	"Flash" discharge tube 0.3 J	"Flash" discharge tube 0.6 J	–
Degree of protection		IP 65				
Base unit	with cover	<b>XVPC21</b>	–	–	–	–
References (6)	250 V max.	–	<b>XVPC3●</b>	–	–	–
	24 V AC/DC (flash) - 24 V DC (buzzer)	–	–	<b>XVPC6B●</b>	–	<b>XVPC09B</b>
	120 V AC	–	–	–	<b>XVPC6G●</b>	<b>XVPC09G</b>
	230 V AC	–	–	–	<b>XVPC6M●</b>	<b>XVPC09M</b>

(4) A tower light comprises: 1 base unit + 1 to 5 signalling units maximum.

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

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





Bulbs		Beacons and tower lights XVB / XVP (1)			
Type of light source		Incandescent BA 15d base 7 W	Incandescent BA 15d base 10 W (not XVP)	LED (2) BA 15d base	Flashing LED (2) BA 15d base
References	12 V	DL1BEJ	DL1BLJ	–	–
	24 V	DL1BEB	DL1BLB	DL1BDB●	DL1BKB●
	48 V	DL1BEE	DL1BLE	–	–
	120 V	DL1BEG	DL1BLG	DL1BDG●	DL1BKG●
	230 V	DL1BEM	DL1BLM	DL1BDM●	DL1BKM●

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

(2) To obtain the complete reference, replace the ● by the number designating the colour as follow: 1 = white, 3 = green, 4 = red, 5 = orange, 6 = blue, 8 = yellow.



Bulbs		Tower lights XVM / XVE			
Type of light source		Incandescent BA 15d base 5 W	LED (3) BA 15d base	Flashing LED (3) BA 15d base	"Flash" discharge tube, 0.8 Joule BA 15d base
References	24 V	DL1EDBS	DL2EDB●	DL1EKB●	DL6BB
	120 V	DL1EDGS	DL2EDG●	DL1EKG●	DL6BG
	230 V	DL1EDMS	DL2EDM●	DL1EKM●	DL6BM

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



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

(4) To order an aluminium support tube with integral cream fixing base, add the letter **W** to the end of the reference (example: XVPC02W).

1



### Ø 84 / 106 mm

Complete, pre-wired rotating mirror beacons		Ø 84 mm		Ø 106 mm	
Light source (included)		" Super bright " LEDs			
Base mount		3 x Ø 05			
Buzzer		Without buzzer			
Degree of protection		IP23 (IP 65 with accessories)		IP23 (IP 65 with accessories)	
Voltage		12V AC/DC	12V AC/DC	12V AC/DC	12V AC/DC
References	Red	XVR08J04	XVR08B04	XVR10J04	XVR10B04
	Orange	XVR08J05	XVR08B05	XVR10J05	XVR10B05
	Green	XVR08J03	XVR08B03	XVR10J03	XVR10B03
	Blue	XVR08J06	XVR08B06	XVR10J06	XVR10B06



### Ø 120 mm

Complete, pre-wired rotating mirror beacons		Ø 120 mm			
Light source (included)		" Super bright " LEDs			
Base mount		3 x M5			
Buzzer		Without buzzer		With buzzer	
Degree of protection		IP23			
Voltage		12V AC/DC	24V AC/DC	12V AC/DC	24V AC/DC
References	Red	XVR12J04	XVR12B04	XVR12J04S	XVR12B04S
	Orange	XVR12J05	XVR12B05	XVR12J05S	XVR12B05S
	Green	XVR12J03	XVR12B03	XVR12J03S	XVR12B03S
	Blue	XVR12J06	XVR12B06	XVR12J06S	XVR12B06S



### Ø 130 mm

Complete, pre-wired rotating mirror beacons		Ø 130 mm			
Light source (included)		" Super bright " LEDs			
Base mount		3 x Ø 09			
Buzzer		Without buzzer			
Degree of protection		IP66 - Resistant to vibration		IP66 and IP67	
Voltage		12V DC	24V DC	24V AC/DC	120V AC   230V AC
References	Red	XVR13J04	XVR13B04	XVR13B04L	XVR13M04L
	Orange	XVR13J05	XVR13B05	XVR13B05L	XVR13G05L   XVR13M05L



Accessories for rotating mirrors		Reflecting prism	Rubber base	Metal angle bracket	Metal fixing plate
To be used for/with		–	Increasing the IP	Horizontal support	Horizontal support
Height (mm)		–	–	–	300
References	Ø 84 mm	XVRZR1	XVRZ081	XVCZ23	–
	Ø 106 mm	XVRZR2	XVRZ082	XVCZ23	XVCZ13
	Ø 120 mm	XVRZR3	–	XVCZ23	XVCZ13
	Ø 130 mm	XVRZR3	–	XVR012L	–

## Electronic alarms and multisound sirens



Sirens and electronic alarms		Sirens	Multisound sirens pre-wired	Electronic alarms Panel Mount DIN72		Electronic alarms Panel Mount DIN96	
Sound level		106 dB	105 dB	90 dB		96 dB	
Tones		2	43	16		16	
Channels		–	8	4		4	
Degree of protection		IP 65	IP53	IP 54		IP 54	
Colors		White	White	Black	White	Black	White
References	12/24V AC/DC	XVS10BMW	–	XVS72BMB●	XVS72BMW●	XVS96BMB●	XVS96BMW●
	12/24V DC	–	XVS14BMW	–	–	–	–
	120V AC	XVS10GMW	XVS14GMW	–	–	–	–
	230V AC	XVS10MMW	XVS14MMW	–	–	–	–

(1) To obtain a complete reference, replace the ● by the letter as follow: P = PNP, N = NPN (ex. XVS72BMBP)

1



Type XACA "Pistol grip"			
Degree of protection	IP 65 / Nema 4, 4X / Class II		
Rated operational characteristics	AC 15 (240 V 3 A), DC 13		
Conventional thermal current	lthe	10 A	
Connection	Screw clamp terminals, 1 x 2.5 mm <sup>2</sup> or 2 x 1.5 mm <sup>2</sup>		
For control of	single-speed motors 		2-speed motors 
Dimensions (mm)	W x H x D	52 x 295 x 71 (x 85 with ZA2BS834)	52 x 295 x 71 (x 85 with ZA2BS834)
Number of operators	mechanically interlocked	2	
	Emergency stop	without	ZA2BS834
References		XACA201	XACA2014
			XACA207
			XACA2074



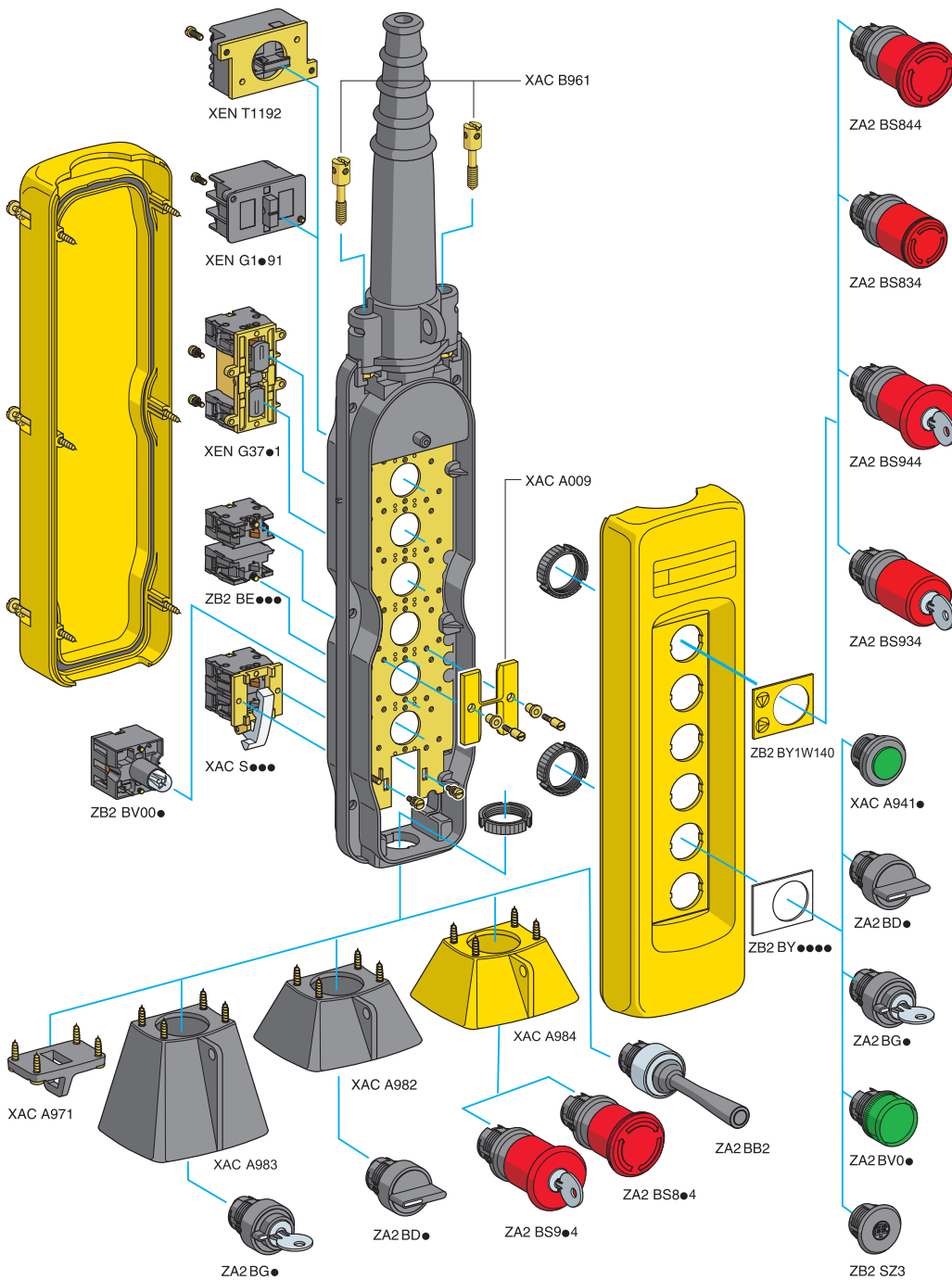
Type XACA			
For control of single-speed motors			
Dimensions (mm)	W x H x D	80 x 314 x 70 (x 90 with ZA2BS834)	80 x 440 x 70 (x 90 with ZA2BS844)
Number of operators	mechanically interlocked between pairs	2	
	Emergency stop	without	ZA2BS834
References		XACA271H7	XACA2714H7
			XACA471H7
			XACA4714H7



For control of single-speed motors			
Dimensions (mm)	W x H x D	80 x 500 x 70 (x 90 with ZA2BS844)	80 x 560 x 70
Number of operators	mechanically interlocked between pairs	6	
	Emergency stop	without	ZA2BS844
References		XACA671H7	XACA6714H7
			XACA871H7

Empty enclosures type XACA							
Number of ways	2	3	4	5	6	8	12
References	XACA02H7	XACA03H7	XACA04H7	XACA05H7	XACA06H7	XACA08H7	XACA12H7

## Separate components (for mounting in enclosures XACA)



1

<b>Mushroom head, latching, trigger action (1)</b>		
turn to release	Ø 40	<b>ZA2BS844</b>
	Ø 30	<b>ZA2BS834</b>

<b>Mushroom head, latching, trigger action (1)</b>		
key release	Ø 40	<b>ZA2BS944</b>
	Ø 30	<b>ZA2BS934</b>

<b>Booted operators</b>		
white	●	<b>XACA9411</b>
black	●	<b>XACA9412</b>

<b>Selector switch</b>		
2 pos. stay put		<b>ZA2BD2</b>
3 pos. stay put		<b>ZA2BD3</b>

<b>Key switch</b>		
key n° 455	2 pos. stay put	<b>ZA2BG4</b>
	3 pos. stay put	<b>ZA2BG5</b>

<b>Pilot light heads</b>		
white	●	<b>ZA2BV01</b>
green	●	<b>ZA2BV03</b>
red	●	<b>ZA2BV04</b>
yellow	●	<b>ZA2BV05</b>

<b>Pilot light bodies</b>		
direct supply		<b>ZB2BV006</b>
direct supply, through resistor		<b>ZB2BV007</b>

<b>Blanking plug</b>		
with seal and		<b>ZB2SZ3</b>
fixing nut		

<b>Isolating switch, slow break, for front mounting</b>	
Emergency stop NC+NC+NC with positive opening operation	<b>XENT1192</b>

<b>Contacts blocks for XACA941●</b>	
Single-speed NC+NO	<b>XENG1491</b>
2-speed NC+NO+NO	<b>XENG1191</b>

<b>Double blocks latching, slow break</b>	
Single-speed NO+NO	<b>XENG3781</b>
Single-speed NO+NC	<b>XENG3791</b>

<b>Contact blocks</b>	
Single-speed NO	<b>ZB2BE101</b>
Single-speed NC	<b>ZB2BE102</b>

<b>Contact blocks (for mounting in enclosure base)</b>	
NO	<b>XACS101</b>
NC+NO	<b>XACS105</b>

<b>Protective guard (for base mounted units)</b>	
For selector switch	<b>XACA982/983</b>
For emergency stop pushbutton	<b>XACA984</b>

Legends, 30 x 40 mm	With symbols conforming to NF E 52-124	With text
<b>References</b>	<b>ZB2BY4901</b> <b>ZB2BY4903</b> <b>ZB2BY4907</b> <b>ZB2BY4909</b> <b>ZB2BY4913</b> <b>ZB2BY4915</b> <b>ZB2BY4930</b> <b>ZB2BY2303</b> <b>ZB2BY2304</b>	
<b>References</b>	<b>ZB2BY2904</b> <b>ZB2BY2906</b> <b>ZB2BY2910</b> <b>ZB2BY2912</b> <b>ZB2BY2916</b> <b>ZB2BY2918</b> <b>ZB2BY2931</b> <b>ZB2BY1W140</b>	

(1) Trigger action mechanically latching Emergency stop pushbuttons conform to standards EN/IEC 60204-32, EN/ISO 13850, Machinery directive 2006/42/EC and standard EN/IEC 60947-5-5.

ZOOM



Vijeo Designer

Thanks to its intuitive design, Vijeo Designer - the single configuration software tool for Schneider Electric's entire HMI range - can process all your operator dialogue projects quickly and easily.

# Magelis STO small graphic terminal configured by Vijeo Designer

## The smallest-ever touch screen terminal

Magelis STO range is enlarged **with the support of Zelio and Ethernet protocols.**

### Tool-free installation

- Terminals are mounted easily onto your enclosure using spring clips.

### Exceptionally clear display

- Two monochrome versions are available in three colours - green/orange/red or white/pink/red - for enhanced readability. Several levels of grey, numerous character fonts and Vijeo Designer's extensive object library all help to provide exceedingly high-quality graphic animations.

### One international software tool

- Available in more than 15 languages, all Vijeo Designer elements are available directly from the demonstration software via a simple download.

### Ease of maintenance

- No batteries required, backlit by LEDs
- Removable power connector
- USB memory stick for application downloads

### Communication capability

- Standard RJ45 serial port with Modbus, Zelio link, Ethernet protocols and other commercially-available third-party protocols
- 2 USB ports: 1 mini B port for downloading and 1 standard A port for USB memory stick and USB peripherals

*For further informations, see page 1/36*



# Industrial PC new generation : Magelis Box PC , Magelis Panel PC

## Modular Design

- Box and Panel based on latest components, software bundles, scalable and consistent range, on demand configured iPC service

## Certified for automation

- UL508, Haz. Loc, ATEX, Marine. Rugged, long term availability

## Ready for integration in IT structure

- Main microsoft OS including Windows 7, Large data storage & connectivity, Multi-tasking capabilities

## Optimized

- Optimum 10" and 15" Panel PC certified for automation

## The new offer of Magelis iPC consists of :

- 4x Box PC (+ 1x 15" DC Display)
  - 1, 2, 5 slots and 2 performance levels
- 12x Panel PC
  - 10", 15" (same cut-out as legacy), and 19"
  - 0, 2 slots and 3 performance levels

*For further information, see page 1/44 to 1/47*

# Human/Machine Interfaces

**Magelis**, a complete offer of Human Machine Interfaces to meet your needs in a wide range of applications.

All in One

Small Panels

Magelis STO/STU, XBT N

Advanced Panels

Magelis XBT GT/GK/GTW/GH

HMI Controllers

Magelis XBTGC

PC Panels

Magelis Panel PC

BOX

PC BOX

Magelis Box PC

Display

Industrial Display

Magelis iDisplay

Configuration Softwares

Vijeo Designer Lite

Vijeo Designer



# Contents

## Human/Machine Interfaces

### **Display units, terminals, Industrial PCs**

Small Panels,	
with graphic screen, <b>Magelis STO/STU</b> .....	1/36
with matrix, semi-graphic screen, <b>Magelis XBT N</b> .....	1/37
with matrix, semi-graphic screen, dedicated, <b>Magelis XBT N</b> .....	1/37
Advanced Panels,	
with touchscreen, <b>Magelis XBT GT</b> .....	1/38 and 1/39
with touchscreen and keypad, <b>Magelis XBT GK, GTW</b> .....	1/40
with touchscreen, <b>Magelis XBT GH</b> .....	1/41
HMI Controllers,	
Compact, <b>Magelis XBT GC</b> .....	1/42
Modular, <b>Magelis XBT GT/GK</b> .....	1/42
PC Box,	
<b>Magelis BOX PC</b> .....	1/44
Industrial Display,	
with touchscreen, <b>Magelis iDisplay</b> .....	1/45
PC Panels,	
<b>Magelis Panel PC</b> .....	1/46 to 1/47

### **Configuration software**

For Magelis XBT N	
<b>Vijeo Designer Lite</b> .....	1/48
For Magelis STO/STU, XBT GT, GK, GTW, GH, Panel PC, BOX PC	
<b>Vijeo Designer</b> .....	1/49



Type		Characteristics				
Display	LCD screen size / Resolution	3.4" / monochrome (200 X 80 pixels)				
	Type	Green, orange, red	White, pink, red	Green, orange, red		
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad				
	Curves / Alarm logs	Yes, with log / Yes, incorporated				
Communication	Serial link	1 RJ45 (RS 232 - RS 485)		1 Terminal Block RS232		
	Networks	–	–	–	Ethernet	Ethernet
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic), Uni-TE, Modbus, Modbus TCP		Zelio		
Development software		Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7) or Vijeo Designer Limited Edition				
Dimensions W x D x H (mm)		116,5 x 38,5 x 77,5				
Compatibility with PLCs		«Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340»		Zelio		
«Compact Flash» card slot		No				
USB port		1 Host type A + 1 Device type miniB				
Built-in Ethernet TCP/IP		No			Yes	
Supply voltage		24 VDC				
References		HMISTO511	HMISTO512	HMISTO501	HMISTO531	HMISTO532



Type		Characteristics	
Display	LCD screen size / Resolution	3.5" / QVGA (320 X 240 pixels)	5.7" / QVGA (320 X 240 pixels)
	Type	TFT 65 536 colours	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad	
	Curves / Alarm logs	Yes, with log / Yes, incorporated	
Communication	Serial link	1 RJ45 (RS 232 - RS 485)	
	Networks	Ethernet, IEEE 802.3, 10/100 BASE-T, RJ45	
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic), Uni-TE, Modbus, Modbus TCP	
Development software		Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7) or Vijeo Designer Limited Edition	
Dimensions W x D x H (mm)		Front: 98 x 16 x 81	Front: 163 x 17.5 x 129.5
		Rear : 118 x 30 x 98	
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340	
«Compact Flash» card slot		No	
USB port		1 Host type A + 1 Device type miniB	
Built-in Ethernet TCP/IP		Yes	Yes
Supply voltage		24 VDC	
References		HMISTU655	HMISTU855

## Small Panel Magelis XBT N with matrix, semi-graphic screen (1)



Type		Characteristics			
Display	Capacity	2 lines, 20 characters	1 to 4 lines, 5 to 20 characters		
	Type	Back-lit LCD green			Back-lit LCD 3 colours green, orange, red
Data entry		Via keypad with 8 keys (4 customizable keys)			
Function	Representation of variables	Alphanumeric	Alphanumeric, bargraph, curves, button and light		
	Alarm log	No	Yes	Yes	Yes
Communication	Serial link	1 RJ45 (RS 232 - RS 485)		1 Sub-D25 (RS 232 - RS 485) + 1 miniDin RS232 (2)	
Downloadable protocols		Uni-TE, Modbus Master		Uni-TE, Modbus Master, Siemens, Rockwell, Omron, Mitsubishi, Zelio (2)	
Development software		Vijeo Designer Lite (on Windows XP and Vista)			
Dimensions W x D x H (mm)		132 x 37 x 74			
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon M340		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon Momentum, Modicon M340, Zelio (2)	
Supply voltages		5 VDC or PLC power supply		24 VDC	
References		<b>XBTN200</b>	<b>XBTN400</b>	<b>XBTN410</b>	<b>XBTN401</b>

(1) Except XBTN200: alphanumeric screen.

(2) For XBTN401 only

## Magelis XBT N with matrix, semi-graphic screen, dedicated



Type		Characteristics
Display	Capacity	1 to 4 lines, 5 to 20 characters
	Type	Back-lit LCD green
Data entry		Via keypad with 8 keys
Function	Representation of variables	Alphanumeric, bargraph, curves, button and light
	Alarm log	Yes
Communication	Serial link	1 Sub-D25
Downloadable protocols		Modbus
Development software		Vijeo Designer Lite (on Windows XP and Vista)
Dimensions W x D x H (mm)		132 x 37 x 74
Compatibility with PLCs		Motor starter Tesy Model U
Supply voltages		24 VDC
References		<b>XBTNU400</b>

1



Type		Characteristics		
Display	LCD screen size / Resolution	3.8" / QVGA		
	Type	STN monochrome, amber or red	TFT 256 colour	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad		
	Curves / Alarm logs	Yes, with log / Yes, incorporated		
Communication	Serial link	1 RJ45 (RS 232 - RS 485)		
	Networks	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	
Downloadable protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP			
Development software	Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)			
Dimensions W x D x H (mm)	118 x 30 x 98			
Compatibility with PLCs	Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340			
«Compact Flash» card slot	No			
USB port Host type A	1	1	1	
Built-in Ethernet TCP/IP	No	Yes		
Supply voltage	24 VDC			
References	XBTGT1105	XBTGT1135	XBTGT1335	

## Magelis XBT GT with 5.7" touchscreen



Type		Characteristics						
Display	LCD screen size / Resolution	5.7" / QVGA					5.7" / VGA	
	Type	STN Monochrome Blue backlighting	Black and White backlighting	STN, colour 4096 colours	TFT, colour 65536 colours	High brightness backlighting		
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad						
	Curves / Alarm logs	Yes, with log / Yes, incorporated						
Communication	Serial link	1 Sub-D9 (RS 232/RS 422 - RS 485) + 1 RJ45 (RS 485)						
	Networks	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	Ethernet 10/100 BASE-T	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	
Downloadable protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP/IP							
Development software	Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)							
Dimensions W x D x H (mm)	167.5 x 60 x 135							
Compatibility with PLCs	Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340, Modicon Momentum							
«Compact Flash» card slot	No	Yes						
USB port Host type A	1						2	
Video in	No							
Built-in Ethernet TCP/IP	No	No	Yes	No	Yes	Yes	Yes	
Supply voltage	24 VDC							
References	XBTGT2110	XBTGT2120	XBTGT2130	XBTGT2220	XBTGT2330	XBTGT2930	XBTGT2430	



Type		Characteristics							
Display	LCD screen size / Resolution	7.5" / VGA			10.4" / VGA			10.4" / SVGA	
	Type (colour)	STN	TFT	TFT	STN	TFT	TFT	TFT	
	Number of colours	4096	65536	65536	4096	65536	65536	65536	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad							
	Curves / Alarm logs	Yes, with log / Yes, incorporated							
Communication	Serial link	1 Sub-D9 (RS 232/RS 422 - RS 485) + 1 RJ45 (RS 485)							
	Networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ 45							
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP/IP							
Development software		Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)							
Dimensions W x D x H (mm)		215 x 60 x 170			313 x 56 x 239			271 x 57 x 213	
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340							
«Compact Flash» card slot		Yes							
USB port Host type A		1	1	1	2	2	2	2	
Video in		No	No	Yes	No	No	Yes	No	
Built-in Ethernet TCP/IP		Yes							
Supply voltage		24 VDC							
References		XBTGT4230	XBTGT4330	XBTGT4340	XBTGT5230	XBTGT5330	XBTGT5340	XBTGT5430	

## Magelis XBT GT with 12.1" and 15" touchscreen



Type		Characteristics			
Display	LCD screen size / Resolution	12,1" / SVGA		15" / XGA	
	Type (colour)	TFT		TFT	
	Number of colours	65536		65536	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad			
	Curves / Alarm logs	Yes, with log / Yes, incorporated			
Communication	Serial link	1 Sub-D9 (RS 232/RS 422 - RS 485) + 1 RJ45 (RS 485)			
	Networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ 45BASE-T, RJ 45			
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP/IP			
Development software		Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)			
Dimensions W x D x H (mm)		313 x 56 x 239		395 x 60 x 294	
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340			
«Compact Flash» card slot		Yes			
USB port Host type A		2			
Video in		No		Yes	
Built-in Ethernet TCP/IP		Yes			
Supply voltage		24 VDC			
References		XBTGT6330		XBTGT6340	
				XBTGT7340	

1



Type		Characteristics		
Display	Screen size / Resolution	5.7" / QVGA		10.4" / VGA
	Type	STN monochrome black and white	TFT Colour 65536 colours	
Data entry	Soft function keys with LED	14		18
	Static function keys with LED	10 + legends		12 + legends
	Service keys / Alphanumeric keys	8 / 12		
	Touchscreen and industrial pointer	Yes		
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad		
	Curves	Yes, with log		
	Alarm logs	Yes		
Communication	Serial link	1 Sub-D9 (RS 232/RS 422 - RS 485) + 1 RJ45 (RS 485)		
	Networks	– Ethernet, IEEE 802.3 10/100 BASE-T, RJ 45		
Downloadable protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP/IP			
Development software	Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)			
«Compact Flash» card slot	Yes			
Dimensions W x D x H (mm)	220.3 x 88 x 265	296 x 91 x 332	197 x 92.6 x 147	
Compatibility with PLCs	Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340			
USB port	1	1	2	
Video in	No	No	No	
Built-in Ethernet TCP/IP	No	Yes		
Supply voltage	24 VDC			
References	XBTGK2120	XBTGK2330	XBTGK5330	

## Magelis XBT GTW with 8.4", 12", 15" touchscreen



Type		Characteristics		
Pre-installed Software	OS: Windows XP Embedded, Internet Explorer, Office & Acrobat Reader, .NET, Vijeo Designer Run Time unlimited			
	–	Vijeo Citect Web Client		
Touchscreen	8.4" LCD TFT	12" LCD TFT	15" LCD TFT	
Resolution	SVGA 800 x 600	SVGA 800 x 600	XGA 1024 x 768	
Front panel ports	–	1 x USB	1 x USB	
Processor	Celeron M @ 600 MHz	Celeron M @ 1GHz	Celeron M@1GHz	
RAM	512MB ► 1024MB	512MB ► 1024MB	1024MB	
Storage	CF 2GB expandable to 4GB	CF 2GB expandable to 4GB	CF 4GB	
Extension	–	1 x PCMCIA slot (for 1 type II card)	1 PCMCIA slot (for 1 type III card or 2 type I cards)	
Ethernet ports	2 (10/100/1G + 10/100)	2 (10/100/1G + 10/100)	2 (10/100/1G + 10/100)	
Ports I/O	4 x USB, 2 x RS232	4 x USB, 1 x RS232	4 x USB, 2 x RS232	
Power supply	24 VDC			
Dimension	230 x 65 x 177	313 x 60 x 239	395 x 65 x 294	
References	XBTGTW450	XBTGTW652	HMIGTW7353	



Type		Characteristics	
<b>+ Screen</b>			
Display	screen size / Resolution	5,7" / VGA	
	Type (colour)	TFT	
	Number of colours	65 536	
Data entry	Function keys	11 + label	
	Operaton key	1 with LED (validation touchscreen)	
Safety components	Key Switch	Yes for ON/OFF	
	3 positions Enable switch	Yes, OK signal in intermediate position only	
	Emergency stop	Yes, red with 2 safe contacts and one auxiliary contact	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad	
	Curves / Alarm historic	Yes, with log / Yes, incorporated	
Connection	32-pins connector (communication, alimentation, I/O)		
Downloadable protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP/IP		
Development software	Vijeo Designer VJD●●●TG●V●●M (on Windows XP, Vista and 7)		
«Compact Flash» card slot	Yes		
Dimensions W x D x H (mm)	224 x 174 x 87.1		
USB port	1		
Supply voltage	24 VDC		
Reference	<b>XBT GH2460</b>		
<b>+ Cable interface</b>		<b>connection with junction box</b>	
Type of connector	2 x 32-pins speed connectors		
Length	3 m	5 m	10 m
Reference	<b>XBTZGHL3</b>	<b>XBTZGHL5</b>	<b>XBTZGHL10</b>
<b>+ Junction box</b>		<b>connection with PLCs</b>	
Communcation	Serial link	1 SubD9 (RS232 / RS422 - RS 425)	
	Network	1 Ethernet RJ45 IEEE 802.3 10/100 T-BASE,	
Connection	32 pins connector	Interface cable 3 or 10 m	
	24 pins screw terminals blocks	For alimentation 24 VDC, state of I/O safety components	
Reference	<b>XBTZGJBOX</b>		

A large number of accessories (cables, memory cards, protective sheets, etc ...) is available for the Advanced panels range.



1



Type		Characteristics		
Display	LCD screen size / Resolution	3,8" / QVGA	5,7" / QVGA	
	Type	STN monochrome, amber or red	STN monochrome, gray	STN 4096 colours
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad		
	Curves / Alarm logs	Yes, with log / Yes, incorporated		
	Control	5 languages IEC		
Communication	Serial link	–	1 Sub9 (RS 232/RS 422 - RS 485)	
	Networks	–	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Sematic) Uni-TE, Modbus, Modbus TCP		
Development software		SoMachine (on Windows XP and Vista)		
Dimensions W x D x H (mm)		130 x 76 x 104	207 x 76 x 157	
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340		
«Compact Flash» card slot		No		
USB port Host type A		1	1	1
Built-in Ethernet TCP/IP		No	No	Yes
Integrated I/O		12I/6O 24 VDC	16I/16O 24 VDC	
Extensions		2 modules TM2 or CANopen module	3 modules TM2 or CANopen module	
Supply voltage		24 VDC		
References	Source Output	<b>XBTGC1100T</b>	<b>XBTGC2120T</b>	<b>XBTGC2230T</b>
	Sink Output	<b>XBTGC1100U</b>	<b>XBTGC2120U</b>	<b>XBTGC2230U</b>

## Extensions

Type of module	CANopen Master						
Characteristics	Class M10 limited 16 slaves, Standard DS301 V4.O2						
References	<b>XBTZGCCAN</b>						

Type of module	Digitals Inputs / Outputs						
Characteristics	8I 24 VDC Screw terminal	16I 24 VDC Screw terminal	16I 24 VDC HE10	32I 24 VDC HE10	8I 120 VAC Screw terminal	4I 24 VDC 4O Relays Screw terminal	16I 24 VDC 8O Relays Screw terminal
References	<b>TM2DDI8DT</b>	<b>TM2DDI16DT</b>	<b>TM2DDI16DK</b>	<b>TM2DDI32DK</b>	<b>TM2DAI8DT</b>	<b>TM2DMM8DRT</b>	<b>TM2DMM24DRF</b>

Type of module	Digitals Inputs / Outputs					
Characteristics	8O Transistor 24 VDC Screw terminal	16O Transistor 24 VDC HE10	32O Transistor 24 VDC HE10	8O Relays 230 VAC 30 VDC Screw terminal	16O Relays 230 VAC 30 VDC Screw terminal	–
References	Source Output <b>TM2DD08TT</b>	<b>TM2DD016TK</b>	<b>TM2DD032TK</b>	<b>TM2DRA8RT</b>	<b>TM2DRA16RT</b>	–
	Sink Output <b>TM2DD08UT</b>	<b>TM2DD016UK</b>	<b>TM2DD032UK</b>	–	–	–

Type of module	Analog Inputs / Outputs					
Characteristics	2I Current/Voltage	2I Thermocouple	4I Current/Voltage Temperature	8I Current/Voltage	8I Temperature	8I PTC
References	<b>TM2AMI2HT</b>	<b>TM2AMI2LT</b>	<b>TM2AMI4LT</b>	<b>TM2AMI8HT</b>	<b>TM2ARI8LRJ</b> <b>TM2ARI8LT</b>	<b>TM2ARI8HT</b>

Type of module	Analog Inputs / Outputs				
Characteristics	1O Current/Voltage	2O Voltage	2I Current/Voltage 1O Current/Voltage	2I Temperature 1O Current/Voltage	4I Current/Voltage 2O Current/Voltage
References	<b>TM2AMO1HT</b>	<b>TM2AVO2HT</b>	<b>TM2AMM3HT</b>	<b>TM2ALM3LT</b>	<b>TM2AMM6HT</b>





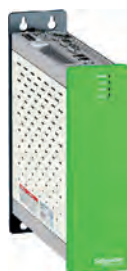
Type		Characteristics	
Display	LCD screen size / Resolution	5.7" / QVGA to 10,4" / VGA	«5.7" (QVGA/VGA), 7.5" (VGA), 10.4" (VGA/SVGA), 12.1" (SVGA), 15" (XGA)»
	Type	STN monochrome or TFT color	STN monochrome, STN 4096 colors, TFT 65000 colors
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad	
	Curves / Alarm logs	Yes, with log / Yes, incorporated	
	Control	5 languages IEC	
Communication	Serial link	1 RJ45 (RS 485) + 1 Sub9 (RS 232/RS 422 - RS 485)	
	Networks	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45 depending on model	
Downloadable protocols	Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic), Uni-TE, Modbus, Modbus TCP		
Development software	SoMachine (under Windows XP and Vista)		
Dimensions W x D x H (mm)	Depending on model		
Compatibility with PLCs	Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340		
«Compact Flash» card slot	Yes		
USB port	1 or 2		
Built-in Ethernet TCP/IP	Depending on model		
Built-in I/O	No		
Extensions	CANopen module mandatory		
Supply voltage	24 VDC		
References	XBTGK2●/53 (1)		XBTGT2●/4●/5●/63/73 (2)

(1) for detailed references, see p37

(2) for detailed references, see p35-36

## Control extension

Type of module	CANopen Master
Characteristics	Class M10 limited 16 slaves, Standard DS301 V4.02
Reference	XBTZGCANM



Box PC Universal	
CPU & RAM types	Atom N270 1,6 Ghz Fanless with DDR2 RAM
PCI Slots	1 PCI   2 (1 PCI + 1 PCIe)
Operating System	WES 2009   XP PRO SP3
Storage	CF =< 4Gb (SLC)   Flash Disk =<32Go (SSD SLC)   HDD =<250Go   Flash Disk =<32Go (SSD SLC)   HDD =<250Go
Integrated DVD-RW	–   1
Slide-in	1 for storage   1 for storage + 1 for DVD-RW (or for storage with adapter)
Power supply	24V DC
Integrated ports	2 Ethernet Gigabit, 5 USB, 2 RS232, 1 DVI
Optional	Battery-backup*, additional RS232/485 port, additional DVI for Box PC 2 slots, redundant RAID HDD by PCI
Overall dimensions (WxHxD in mm)	82x270x251   121x270x251
Industrial Certifications	CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick
Marine certification	Germany Loyd with power filter   –   Germany Loyd with power filter   –
Vijeo Designer	Vijeo Designer Run Time demo. Unlimited licence to be ordered separately (VJDSNRTMPC)
1GB RAM	<b>HMIBUCND1E01</b>   <b>HMIBUFND1P01</b>   <b>HMIBUHND1P01</b>   <b>HMIBUFND2P01</b>   <b>HMIBUHDD2P01</b>
Vijeo Citect Full 500 I/O, 2Gb RAM	–   <b>HMIBUFND17F1</b>   –   <b>HMIBUFND2PF1</b>   –

Configured iPC service

\*Other configurations on request. Please consult our Customer Care Center.



Box PC Performance	
CPU & RAM types	Core 2 Duo 2,26 Ghz Fan, with DDR3 RAM
PCI Slots	2 (1 PCI + 1 PCIe)   5 (2 PCI + 3 PCIe)
Operating System	Windows 7 64 bits Ultimate
Storage	Flash Disk =<32Go (SSD SLC)   HDD =<250Go   Flash Disk =<32Go (SSD SLC)   HDD =<250Go
Integrated DVD-RW	1
Slide-in	1 for storage + 1 for DVD-RW (or for storage with adapter)
Power supply	24V DC
Integrated ports	2 Ethernet Gigabit, 5 USB, 2 RS232, 1 DVI
Optional	Battery-backup*, additional RS232/485 port, additional DVI, redundant RAID HDD by PCI
Overall dimensions (WxHxD in mm)	121x270x251   217x270x251
Industrial Certifications	CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick
Marine certification	–
Vijeo Designer	Vijeo Designer Run Time demo. Unlimited licence to be ordered separately (VJDSNRTMPC)
2Gb RAM	<b>HMIBPFDD2701</b>   <b>HMIBPHDD2701</b>   <b>HMIBPFDD5701</b>   <b>HMIBPHDD5701</b>
Vijeo Citect Full 500 I/O, 4Gb RAM	<b>HMIBPFDD27F1</b>   –   <b>HMIBPFDD57F1</b>   –

Configured iPC service

\*Other configurations on request. Please consult our Customer Care Center.



		15" touch & keypad	15" touch	15" Touch DC	19" touch
Touchscreen		15" LCD TFT	15" LCD TFT	15" LCD TFT	19" LCD TFT
Resolution		XGA 1024x768	XGA 1024x768	XGA 1024x768	SXGA 1280x1024
Front side port		1 x USB	1 x USB	2 x USB	1 x USB
Video ports		1 x VGA & 1 x DVI	1 x VGA & 1 x DVI	2 x VGA & 1 x DVI	1 x VGA & 1 x DVI
Touchscreen ports		1 x USB & 1 x RS 232	1 x USB & 1 x RS 232	2 x USB & 1 x RS 232	1 x USB & 1 x RS 232
Certification		UL508, CSA	UL508, CSA	UL508, CSA	UL508, CSA
Dimensions W x D x H (mm)		483 x 65 x 365	395 x 60 x 294	395 x 60 x 294	460 x 65 x 390
References	AC	<b>MPCNB50NAN00N</b>	<b>MPCYT50NAN00N</b>	–	<b>MPCYT90NAN00N</b>
	DC	–	–	<b>HMIDID7DT0</b>	–

## PC Panel Magelis Panel PC 10", 15"



	Optimum Panel PC 10"	Optimum Panel PC 15"
Touch screen	10" LCD TFT with LED, IP65	15" LCD TFT with LED, IP65
Resolution	SVGA 800x600, 16 Million colors	XGA 1024x768, 16 Million colors
CPU	Atom Z510 1,1 Ghz Fanless	
Operating System	WES 2009	
RAM	1 GB DDR2	
OS storage	CF 2Gb (SLC)	
User storage	SD card	
Power supply	24V DC	
Intergated ports	2 x Ethernet Gibabit, 1 USB front + 2, 1 RS232	
Overall dimensions (WxHxD in mm)	323x260x72	402x301x72
Industrial Certifications	CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick,	
Marine certification	Germany Loyd with power filter	
Software	Office & PDF readers, Internet browser, .Net 3.5, Vijeo Designer RT demo (Unlimited licence to be ordered separatly VJDSNRTMPC), Vijeo Citect web client	
Part number	<b>HMIPWC 5D0E01</b>	<b>HMIPWC 7D0E01</b>
Part Number GTW	<b>HMIGTW 5354</b>	<b>HMIGTW 7354</b>



#### Panel PC Universal 15"

Touch screen	15" LCD TFT with LED backlight, IP65, same cut-out than legacy				
Resolution	XGA 1024x768, 16 Million colors				
CPU & RAM types	Atom N270 1,6 Ghz Fanless with DDR2 RAM				
PCI Slots	-				2 (1 PCI + 1 PCIe)
Operating System	WES 2009	XP PRO SP3			
Storage	CF =< 4Gb (SLC)	Flash Disk =<32Go (SSD SLC)	HDD =<250Go	Flash Disk =<32Go (SSD SLC)	HDD =<250Go
Integrated DVD-RW	-				1
Slide-in	1 for storage			1 for storage + 1 for DVD-RW (or for storage with adapter)	
Integrated ports	2 Ethernet Gigabit, 1 front USB + 4 USB, 2 RS232, 1 DVI				
Optional	Battery-backup*, additional RS232/485 port*			+ redundant RAID HDD by PCI	
Overall dimensions (WxHxD in mm)	402x301x104			402x301x153	
Industrial Certifications	CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick,				
Marine certification	Germany Loyd with power filter		-		
Vijeo Designer	Vijeo Designer Run Time demo. Unlimited licence to be ordered separatly (VJDSNRTMPC)				
1GB RAM - DC power supply	HMIPUC7D0E01	HMIPUF7D0P01	HMIPUH7D0P01	-	HMIPUH7D2P01
Vijeo Citect Lite 1200 I/O, 2Gb RAM - DC	-	HMIPUF7D0PL1	-	-	-
1Gb RAM - AC power supply	-	HMIPUF7A0P01	HMIPUH7A0P01	HMIPUF7A2P01	HMIPUH7A2P01
Vijeo Citect Full 500 I/O, 2Gb RAM - AC	-	-	-	HMIPUF7A2PF1	-

Configured iPC service \*Other configurations on request. Please consult our Customer Care Center.



#### Panel PC Performance 15"

Touch screen	15" LCD TFT with LED backlight, IP65, same cut-out than legacy				
Resolution	XGA 1024x768, 16 Million colors				
CPU & RAM types	Core 2 Duo 2,26 Ghz Fan, with DDR3 RAM				
PCI Slots	-				2 (1 PCI + 1 PCIe)
Operating System	Windows 7 64 bits Ultimate				
Storage	Flash Disk =<32Go (SSD SLC)	HDD =<250Go	Flash Disk =<32Go (SSD SLC)	HDD =<250Go	
Integrated DVD-RW	-				1
Slide-in	1 for storage			1 for storage + 1 for DVD-RW (or for storage with adapter)	
Integrated ports	2 Ethernet Gigabit, 1 front USB + 4 USB, 2 RS232, 1 DVI				
Optional	Battery-backup*, add. RS232/485 port*			+ redundant RAID HDD by PCI	
Overall dimensions (WxHxD in mm)	402x301x118			402x301x168	
Industrial Certifications	CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick,				
Vijeo Designer	Vijeo Designer Run Time demo. Unlimited licence to be ordered separatly (VJDSNRTMPC)				
2Gb RAM - DC power supply	HMIPPF7D0701	HMIPPH7D0701	-	HMIPPH7D2701	
2Gb RAM - Battery back-up interface - DC	-	-	-	HMIPPH7B2701	
Vijeo Citect Full 500 I/O, 4Gb RAM - DC	HMIPPF7D07F1	-	-	-	
2Gb RAM - AC power supply	-	HMIPPH7D0701	HMIPPF7A2701	HMIPPH7A2701	
Vijeo Citect Full 500 I/O, 4Gb RAM - AC	-	-	HMIPPF7A27F1	-	

Configured iPC service \*Other configurations on request. Please consult our Customer Care Center.



### Panel PC Universal 19"

19" LCD TFT with LED backlight, IP65				
SXGA 1280x1024, 16 Million colors				
Atom N270 1,6 Ghz Fanless with DDR2 RAM				
–				2 (1 PCI + 1 PCIe)
WES 2009	XP PRO SP3			
CF =< 4Gb (SLC)	Flash Disk =<32Go (SSD SLC)	HDD =<250Go	Flash Disk =<32Go (SSD SLC)	HDD =<250Go
–			1	
1 for storage			1 for storage + 1 for DVD-RW (or for storage with adapter)	
2 Ethernet Gibabit, 1 front USB + 4 USB, 2 RS232, 1 DVI				
Battery-backup*, additional RS232/485 port*			+ redundant RAID HDD by PCI	
480x380x114			480x380x153	
CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick, Germany Loyd with power filter				
Vijeo Designer Run Time demo. Unlimited licence to be ordered separatly (VJDSNRTMPC)				
<b>HMIPUC9D0E01</b>	<b>HMIPUF9D0P01</b>	<b>HMIPUH9D0P01</b>	–	<b>HMIPUH9D2P01</b>
–	<b>HMIPUF9D0PL1</b>	–	–	–
–	–	<b>HMIPUH9A0P01</b>	<b>HMIPUF9A2P01</b>	<b>HMIPUH9A2P01</b>
–	–	–	<b>HMIPUF9A2PF1</b>	–

\*Other configurations on request. Please consult our Customer Care Center.



### Panel PC Performance 19"

19" LCD TFT with LED backlight, IP65				
SXGA 1280x1024, 16 Million colors				
Core 2 Duo 2,26 Ghz Fan, with DDR3 RAM				
–				2 (1 PCI + 1 PCIe)
Windows 7 64 bits Ultimate				
Flash Disk =<32Go (SSD SLC)	HDD =<250Go	Flash Disk =<32Go (SSD SLC)	HDD =<250Go	
–			1	
1 for storage			1 for storage + 1 for DVD-RW (or for storage with adapter)	
2 Ethernet Gibabit, 1 front USB + 4 USB, 2 RS232, 1 DVI				
Battery-backup*, add. RS232/485 port*			+ redundant RAID HDD by PCI	
480x380x129			480x380x168	
CE, UL508 industrial control, cUL, ANSI/ISA 12.12.01 for hazardous locations, Gost, C-Tick, Vijeo Designer Run Time demo. Unlimited licence to be ordered separatly (VJDSNRTMPC)				
<b>HMIPPF9D0701</b>	<b>HMIPPH9D0701</b>	–	<b>HMIPPH9D2701</b>	
–	–	–	–	
<b>HMIPPF9D07F1</b>	–	–	–	
–	<b>HMIPPH9A0701</b>	<b>HMIPPF9A2701</b>	<b>HMIPPH9A2701</b>	
–	–	<b>HMIPPF9A27F1</b>	–	

\*Other configurations on request. Please consult our Customer Care Center.



Vijeo Designer configuration software enables creation of automated system control operator dialogue applications for Magelis STO/STU, XBT GT, GK, GTW, GH terminals, Box PC and Panel PC. It also enables management of the multimedia functions of XBT GTW and Smart & Compact iPC (video and audio) and offers users of Ethernet terminals and iPC remote access via a Web browser (WEB Gate function).

#### Configuration

Vijeo Designer configuration software enables fast, simple processing of operator dialogue projects thanks to its ergonomics, developed around 6 configurable windows.

It also offers comprehensive application management tools:

- . Project creation; projects comprising one or several targets (terminal or iPC).
- . Recipe editor (32 groups of 256 recipes of max. 1024 ingredients).
- . User action list (eg. script) for application adaptability.
- . Application variable cross-referencing.
- . Vectorial graphic library for more attractive graphic screens.
- . Application block diagram documentation.
- . Simulation mode for simple design office application testing.
- . High-performance graphic editor for simple block diagram creation (over 30 animated preconfigured generic objects).
- . Support of layers and masks for faster development.
- . Data sharing (up to 300 variables on 8 terminals).
- . Management of 40 alphabets (including simplified Chinese, Korean, Arabic and Hebrew) with the opportunity to have 15 languages per application and dynamic change.
- . Programmable controller database sharing (Unity Pro, PL7, Concept, TwidoSoft, ProWORX, ModSoft), process variables or operators actions
- . Advanced traceability function (periodic, at event or on request).
- . Project backup on terminal for simple maintenance.
- . User-friendly data recovery tool.
- . Support of standard USB peripherals (USB key up to 4 GB).
- . Support of external USB keyboards and mice.
- . Integration with Schneider Electric equipment (buffer diag., variables access, Unity DDT and unlocated variables.)
- . Event-triggered e-mail function
- . Over 35 third party protocols
- . Multilingual software : English, French, German, Italian, Spanish, Portuguese and Simplified Chinese.
- . Printing function

The Vijeo Designer Limited Edition, free access allows you to configure the Magelis STO/STU.

#### Industrial intelligence option: Intelligent Data Service

Intelligent Data Service (IDS) is an extension of Vijeo Designer for the PC (Magelis or standard PC) which supports the implementation of control solutions for one or a number of terminals (up to 8). This extension offers total traceability. Both process variables and operator actions are tracked so that the right decisions can be made at the right time (Industrial Business Intelligence).

Powerful Data can be collected from multiple terminals via Ethernet without impairing HMI reaction times.

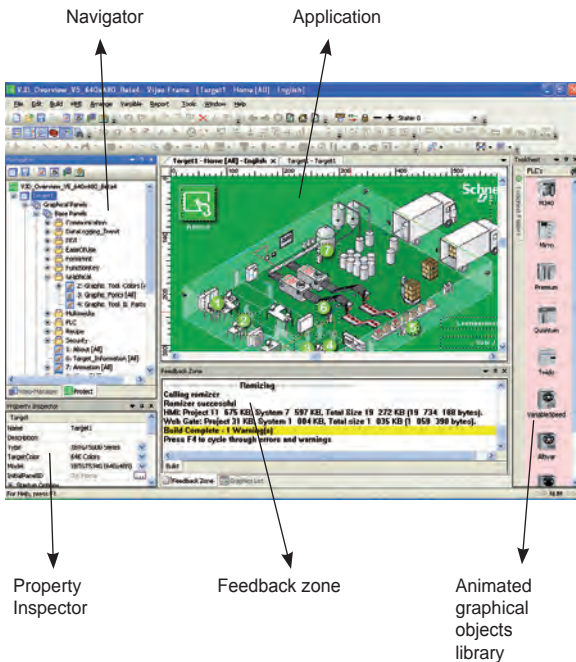
Flexible Various storage methods are supported, CSV file can be read directly in MS Excel, recording in user-defined format in an SQL database or secure IDV (Intelligent Data Vault) files to ensure compatibility with the requirements of 21 CFR Part 11.

#### Intelligent Data Service Report Printing option

Intelligent Data Service (IDS) Report Printing is an extension of Intelligent Data Service for the PC (Magelis or Standard PC).

This extension allows you to create new reports "from scratch" and link them to IDS data.

In addition to editing functions, IDS Report Printing allows you to preview the report before printing, print it or save it to file on disk.



# Vijeo Designer Lite \_\_\_\_\_ Configuration software Magelis XBT N



Vijeo Designer Lite configuration software enables the creation of simple operator dialogue applications on Magelis XBT N, Small Panel ranges.

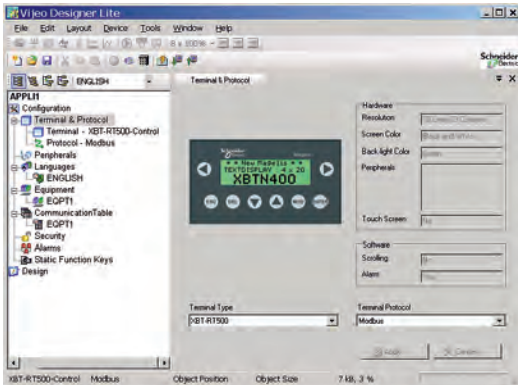
It also enables transparent recovery of all applications produced using its predecessor: XBT L1000. For simplified installation and improved consistency, Vijeo Designer Lite retains the main characteristics of Vijeo Designer software (ergonomics, interface ...) which has become the reference in the HMI field.

### Configuration

Vijeo Designer Lite software enables fast and easy creation of different types of pages (application page, alarm pages, help pages...) and the installation of navigation between pages.

It offers:

- Character fonts Byzantine, simplified Chinese, Cyrillic, Japanese
- Project reports
- Application simulation on PC
- Six languages : English, French, German, Italian, Spanish and Chinese.



## Selection guide for Vijeo Designer Lite

Number of licenses	Composition	References
Single (1)	Without cable With USB cable	VJDSNDTMSV●●M VJDSUDTMSV●●M

Software is delivered on CD-ROM and can be executed under Windows 2000, XP and Vista.  
●● represents version number.

## Selection guide for Vijeo Designer

Number of licences	Composition	References
Single (1)	No cable With USB cable	VJDSNDTGSV●●M VJDSUDTGSV●●M
Group (3)	No cable	VJDGNDTGSV●●M
Team (10)	No cable	VJDTNDTGSV●●M
Facility (Unlimited)	No cable	VJDFNDTGSV●●M

The software is supplied on DVD and runs under Windows® XP and Windows 7.  
●● represent the version number.

## Run Time on Magelis IPC

Single (1)	VJDSNRTMPC
------------	------------

## Run Time Intelligent Data Service

Single (1)*	VJDSNTRCKV●●M
-------------	---------------

\* Need a registered Run Time for Magelis IPC

## Run Time Intelligent Data Service Report Printing

Single (1)*	VJDSNTRPR●●M
-------------	--------------

\* Need a registered Run Time for Intelligent Data Service

# Zelio

Designed for hard-wired logic control applications to complement PLCs when performing simple functions such as counting, measurement and control, the single-function products in the Zelio range of relays offer optimum results.

Designed for the management of simple automation systems, Zelio Logic smart relays provide a real alternative to solutions based on cabled logic or specific cards.



# 2

The challenges of industrial competitiveness mean that control systems are now present in all fields of application. To meet your requirements, Schneider Electric has a very comprehensive offer of automation products, for all sectors of activity. Benefit from high performance, efficient and environmentally friendly products that are designed to reduce your energy costs and increase the safety of personnel and equipment.



# Modicon

From the simplest machine to the smartest industrial process, Modicon automation platforms improve performance, quality and profitability for your installations. Conforming to international standards and simple to set up, the Modicon range integrates seamlessly into any control system.



# 2 | Automation



## Relays

Electromechanical plug-in relays, <b>Zelio Relay</b> .....	2/2 to 2/4
Solid-state relays, <b>Zelio Relay</b> .....	2/5
Control and measurement relays, <b>Zelio Control</b> .....	2/6 to 2/10
Counters, <b>Zelio Count</b> .....	2/11
Timing relays, <b>Zelio Time</b> .....	2/12 to 2/13
Analog interface, <b>Zelio Analog</b> .....	2/14 to 2/15

## Controllers (PLC) for commercial machines

Smart relays, <b>Zelio Logic</b> : 10 to 40 I/O .....	2/16 to 2/17
Programmable controllers, <b>Twido</b> : 10 to 100 I/O 1µs per Instruction .....	2/18 to 2/19

## Controllers (PLC & PAC) for industrial machines

Logic controllers, <b>Modicon M238</b> : 20 to 248 I/O, 0.3 µs per Instruction .....	2/20 to 2/21
Logic controllers, <b>Modicon M258</b> : 42 to 2400 I/O, 0.022 µs per Instruction .....	2/22 to 2/23
Motion controllers, <b>Modicon LMC058</b> : 42 to 2400 I/O, 4 synchronized Axis in 2ms .....	2/24
HMI controllers, <b>Magelis XBTGC</b> : 18 to 96 I/O .....	2/25
Drive controller, <b>Altivar IMC</b> : 1000 instructions in 942 µs Web Server, CANopen, PLCopen .....	2/26

## Programmable Automation Controllers (PACs)

Mid range PLC <b>Modicon M340</b> : for industrial process and infrastructure .....	2/28 to 2/37
Large PLC <b>Modicon Premium</b> : for discrete or process applications and high availability solutions .....	2/38 to 2/45
Large PLC <b>Modicon Quantum</b> : for process applications & high availability solutions .....	2/46 to 2/53

## Software

Programming software, <b>Zelio Soft 2</b> .....	2/17
Programming software, <b>Twido Suite</b> .....	2/19
Machine programming software, <b>SoMachine</b> .....	2/27
Configuration software, <b>Unity Pro</b> .....	2/54 to 2/55
Programming software, <b>PL7, Concept, ProWORX32</b> .....	2/56 to 2/57
SCADA software, <b>Vijeo Citect</b> .....	2/58
Reporting software, <b>Vijeo Historian</b> .....	2/59



Type of relay	Interface relays RSB			Miniature relays RXM			
<b>Contact characteristics</b>							
Thermal current I <sub>th</sub> in A (temperature ≤ 55°C)	8	12	16	12	10	6	3
Number of contacts	2 "C/O"	1 "C/O"	1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	4 "C/O"
Contact material	AgNi	AgNi	AgNi	AgNi	AgNi	AgNi	AgAu
Switching voltage, min. / max.	5 / 250 VAC/DC			12 / 250 VAC/DC			
Switching capacity, min. / max. (mA / VA)	5 / 2000	5 / 3000	5 / 4000	10 / 3000	10 / 2500	10 / 1500	2 / 1500
<b>Coil characteristics</b>							
Average consumption, inrush,	0.75 VA / 0.45 W			1.2 VA / 0.9 W			
Permissible voltage variation	0.8/0.85...1.1 Un (50/ 60Hz or =)			0.8...1.1 Un (50 / 60Hz or =)			
References	(1)	(1)	(1)	(2)	(2)	(2)	
Coil supply voltage on DC	6 VDC	RSB2A080RD	RSB1A120RD	RSB1A160RD	–	–	–
	12 VDC	RSB2A080JD	RSB1A120JD	RSB1A160JD	RXM2AB2JD	RXM3AB2JD	RXM4AB2JD
	24 VDC	RSB2A080BD	RSB1A120BD	RSB1A160BD	RXM2AB2BD	RXM3AB2BD	RXM4AB2BD
	48 VDC	RSB2A080ED	RSB1A120ED	RSB1A160ED	RXM2AB2ED	RXM3AB2ED	RXM4AB2ED
	60 VDC	RSB2A080ND	RSB1A120ND	RSB1A160ND	–	–	–
110 VDC	RSB2A080FD	RSB1A120FD	RSB1A160FD	RXM2AB2FD	RXM3AB2ED	RXM4AB2ED	
Coil supply voltage on AC	24 VAC	RSB2A080B7	RSB1A120B7	RSB1A160B7	RXM2AB2B7	RXM3AB2B7	RXM4AB2B7
	48 VAC	RSB2A080E7	RSB1A120E7	RSB1A160E7	RXM2AB2E7	RXM3AB2E7	RXM4AB2E7
	120 VAC	RSB2A080F7	RSB1A120F7	RSB1A160F7	RXM2AB2F7	RXM3AB2F7	RXM4AB2F7
	220 VAC	RSB2A080M7	RSB1A120M7	RSB1A160M7	–	–	–
	230 VAC	RSB2A080P7	RSB1A120P7	RSB1A160P7	RXM2AB2P7	RXM3AB2P7	RXM4AB2P7
	240 VAC	RSB2A080U7	RSB1A120U7	RSB1A160U7	–	–	RXM4GB2U7

## Sockets for relays

Type of socket	For interface relays RSB			For miniature relays RXM				
<b>Mixed input/output type sockets with location for protection module</b>								
	–	–	–	RXZE2M114(5)	–	RXZE2M114	RXZE2M114	
	–	–	–	RXZE2M114M(5)	–	RXZE2M114M	RXZE2M114M	
<b>Separate input/output type sockets with location for protection module</b>								
	RSZE1S48M	RSZE1S35M	RSZE1S48M(3)	RXZE2S108M	RXZE2S111M	RXZE2S114M	RXZE2S114M	
<b>Protection modules</b>								
Diode	6...230 VDC	RZM040W		RXM040W				
RC circuit	24...60 VAC	RZM041BN7		RXM041BN7				
	110...240 VAC	RZM041FU7		RXM041FU7				
Varistor	6...24 VDC or AC	RZM021RB (6)		RXM021RB				
	24...60 VDC or AC	RZM021BN (6)		RXM021BN				
	110...230 VDC or AC	RZM021FP (6)		RXM021FP				
	24 VDC or AC	–		–				
	240 VDC or AC	–		–				
Multifunction timer module	24...230 VDC or AC	–		–				
<b>Accessories</b>								
Plastic maintaining clamp	RSZR215			RXZR335				
Metal maintaining clamp	–			RXZ400				
Label for socket	RSZL300			RXZL420 (except RXZE2M114)				
Bus jumper	2 poles	–			RXZS2			
DIN rail adapter	–			RXZE2DA				
Panel mounting adapter	–			RXZE2FA				

(1) References for relays without socket, for relays with socket, add the letter **S** to the end of the selected reference. (Example: RSB2A080B7 becomes RSB2A080B7S).

(2) References for relays with LED, for relays without LED, replace the number 1 in the reference by **2**. (Example: RXM2AB2JD becomes RXM2AB1JD)

(3) To use RSB 1A160 ●● relay with socket, terminals must be interconnected

## Universal and power relays



Universal relays RUM					Power relays RPM				RPF	
Cylindrics		Faston								
10	10	3	10	10	15	15	15	15	30 (4)	30 (4)
2 "C/O"	3 "C/O"	3 "C/O"	2 "C/O"	3 "C/O"	1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	2 "N/O"	2 "C/O"
AgNi	AgNi	AgAu	AgNi	AgNi	AgNi	AgNi	AgNi	AgNi	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>
12 / 250 VAC/DC					12 / 250 VAC/DC				12 / 250 VAC/DC	
10 / 2500	10 / 2500	3 / 750	10 / 2500	10 / 2500	100 / 3750	100 / 3750	100 / 3750	100 / 3750	100 / 7200	100 / 7200
2...3 VA / 1.4 W					0.9 VA / 0.7 W	1.2 VA / 0.9 W	1.5 VA / 1.7 W	1.5 VA / 2 W	4 VA / 1.7 W	
(2)	(2)	–	(2)	(2)	(2)	(2)	(2)	(2)	–	–
–	–	–	–	–	–	–	–	–	–	–
RUMC2AB2JD	RUMC3AB2JD	–	RUMF2AB2JD	RUMF3AB2JD	RPM12JD	RPM22JD	RPM32JD	RPM42JD	RPF2AJD	RPF2BJD
RUMC2AB2BD	RUMC3AB2BD	RUMC3GB2BD	RUMF2AB2BD	RUMF3AB2BD	RPM12BD	RPM22BD	RPM32BD	RPM42BD	RPF2ABD	RPF2BBD
RUMC2AB2ED	RUMC3AB2ED	RUMC3GB2ED	RUMF2AB2ED	RUMF3AB2ED	RPM12ED	RPM22ED	RPM32ED	RPM42ED	–	–
–	–	–	–	–	–	–	–	–	–	–
RUMC2AB2FD	RUMC3AB2FD	–	RUMF2AB2FD	RUMF3AB2FD	RPM12FD	RPM22FD	RPM32FD	RPM42FD	RPF2AFD	RPF2BFD
RUMC2AB2B7	RUMC3AB2B7	RUMC3GB2B7	RUMF2AB2B7	RUMF3AB2B7	RPM12B7	RPM22B7	RPM32B7	RPM42B7	RPF2AB7	RPF2BB7
RUMC2AB2E7	RUMC3AB2E7	RUMC3GB2E7	RUMF2AB2E7	RUMF3AB2E7	RPM12E7	RPM22E7	RPM32E7	RPM42E7	–	–
RUMC2AB2F7	RUMC3AB2F7	RUMC3GB2F7	RUMF2AB2F7	RUMF3AB2F7	RPM12F7	RPM22F7	RPM32F7	RPM42F7	RPF2AF7	RPF2BF7
–	–	–	–	–	–	–	–	–	–	–
RUMC2AB2P7	RUMC3AB2P7	RUMC3GB2P7	RUMF2AB2P7	RUMF3AB2P7	RPM12P7	RPM22P7	RPM32P7	RPM42P7	RPF2AP7	RPF2BP7
–	–	–	–	–	–	–	–	–	–	–

For universal relays RUM					For power relays RPM				For power relays RPF	
RUZC2M	RUZC3M	RUZC3M	–	–	RPZF1	RPZF2	RPZF3	RPZF4	–	–
–	–	–	–	–	–	–	–	–	–	–
RUZSC2M	RUZSC3M	RUZSC3M	RUZSF3M	RUZSF3M	–	–	–	–	–	–
RUW240BD	–	–	–	–	1 and 2 poles	–	3 and 4 poles	–	–	–
–	–	–	–	–	RXM040W	–	RUW240BD	–	–	–
RUW241P7	–	–	–	–	RXM041BN7	–	–	–	–	–
–	–	–	–	–	RXM041FU7	–	RUW241P7	–	–	–
–	–	–	–	–	RXM021RB	–	–	–	–	–
–	–	–	–	–	RXM021BN	–	–	–	–	–
–	–	–	–	–	RXM021FP	–	–	–	–	–
RUW242B7	–	–	–	–	RUW242B7	–	–	–	–	–
RUW242P7	–	–	–	–	–	–	RUW242P7	–	–	–
RUW101MW	–	–	–	–	–	–	RUW101MW	–	–	–
–	–	–	–	–	–	–	–	–	–	–
RUZC200	–	–	–	–	RPZF1 (for 1 pole relays)	–	–	–	–	–
RUZL420	–	–	–	–	–	–	–	–	–	–
RUZS2	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	RPZ1DA	RXZE2DA	RPZ3DA	RPZ4DA	–	–
–	–	–	–	–	RPZ1FA	RXZE2FA	RPZ3FA	RPZ4FA	–	–

(4) 30A with 13 mm space between relays; 25 A when relay mounting side by side

(5) Max 10 A operating

(6) With LED



<b>Type of relay</b>		Pre-assembled equipped with LED and protection circuit Sold in lots of 10	
<b>Contact characteristics</b>			
Thermal current I <sub>th</sub> in A	6		
Number of contacts	1 C/O		
Contact material	AgSnO <sub>2</sub>		
Switching voltage, min/max	12 / 300 V AC/DC		
Switching capacity min/max (mA /VA)	100 / 1500		
<b>Coil characteristics</b>			
Average consumption, inrush	0.17 W		
permissible voltage variation	-10% / +15%		
Socket connexion	Screw connector		Spring terminal
	Socket supply voltage	Coil supply voltage	
References	12 V AC/DC	12 V DC	RSL1PVJU
	24 V AC/DC	24 V DC	RSL1PVBU
	48 V AC/DC	48 V DC	RSL1PVEU
	110 V AC/DC	60 V DC	RSL1PVFU
	230 V AC/DC	60 V DC	RSL1PVPU
			RSL1PRJU
			RSL1PRBU
			RSL1PREU
			RSL1PRFU
			RSL1PRPU

### RSL relays



<b>Type of relay</b>		Relay for customer assembly Sold in lots of 10	
Number of contacts	1 C/O		
	Coil supply voltage		
References	12 V DC	RSL1AB4JD	
	24 V DC	RSL1AB4BD	
	48 V DC	RSL1AB4ED	
	60 V DC	RSL1AB4ND	

### Sockets



<b>Type of socket</b>		Sockets for customer assembly with LED and protection circuit Sold in lots of 10	
Socket connection	Screw connector		Spring terminal
	Socket supply voltage		
References	12 and 24 V AC/DC	RSLZVA1	RSLZRA1
	48 and 60 V AC/DC	RSLZVA2	RSLZRA2
	110 V AC/DC	RSLZVA3	RSLZRA3
	230 V AC/DC	RSLZVA4	RSLZRA4

# Solid-state relays

## SSRP relays



Type of relay	Panel mounted without heat sink and thermal interface					
<b>Contact characteristics</b>						
Thermal current I <sub>th</sub> in A	10	25	50	75	90	125
Number of contacts	1 NO					
Type if switching	Zero voltage switching					
Output	SPST contact					
Connection	Screw connector					
Control voltage range	3...32 V DC			4...32 V DC		
Operating voltage	24...280 V AC			48...530 V AC	48...660 V AC	
References	SSRPCDS10A1	SSRPCDS25A1	SSRPCDS50A1	SSRPCDS75A2	SSRPCDS90A3	SSRPCDS125A3
<b>Control voltage range</b>						
Control voltage range	90...280 V AC					
Operating voltage	24...280 V AC			80...530 V AC	48...660 V AC	
References	SSRPP8S10A1	SSRPP8S25A1	SSRPP8S50A1	SSRPP8S75A2	SSRPP8S90A3	SSRPP8S125A3

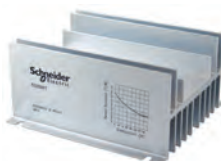
2

## SSRD relays



Type of relay	Rail DIN mounted With integrated heat sink			
<b>Contact characteristics</b>				
Thermal current I <sub>th</sub> in A	10	20	30	45
Number of contacts	1 NO			
Type if switching	Zero voltage switching			
Output	SPST contact			
Connection	Screw connector			
Control voltage range	4...32 V DC			3...32 V DC
Operating voltage	24...280 V AC			
References	SSRD0S10A1	SSRD0S20A1	SSRD0S30A1	SSRD0S45A1
<b>Control voltage range</b>				
Control voltage range	90...280 V AC			90...140 V AC
Operating voltage	24...280 V AC			
References	SSRDP8S10A1	SSRDP8S20A1	SSRDP8S30A1	SSRDP8S45A1

## Accessories



Type of accessory	Heat sink	Thermal interface
For relay	SSRP	
References	SSRAH1	SSRAT1

# Zelio Control Relays

## 3-phase monitoring relays



2

Function	presence of phase +phase sequence		+phase sequence, +regeneration +phase unbalance, +under/over voltage	
Monitoring voltage range	208...480 VAC	208...440 VAC	208...480 VAC	220 ... 440 VAC
Outputs	1 C/O	2 C/O	1 C/O	2 C/O
References	RM17TG00	RM17TG20	RM17TE00	RM35TF30



Function	presence of phase +under/over voltage		+presence of neutral +under/over voltage
Monitoring voltage range	208...480 VAC	220...480 VAC	120...277 VAC (phase-neutral)
Outputs	1 C/O	2 C/O	2 C/O
References	RM17UB310	RM35UB330	RM35UB3N30

## Level / Speed monitoring relays



Function	Conductive liquid level monitoring	Non-conductive material level monitoring	Over/under Speed monitoring
Power supply	24...240 VAC/DC		
Monitoring range	0,25...5 K $\Omega$ 5...100 K $\Omega$ 0,05...1 M $\Omega$	Input of sensor : Contact / PNP / NPN	Interval between pulses: 0.05...0.5 s, 0.1...1 s, 0.5...5 s 1...10 s, 0.1...1 mn, 0.5...5 mn 1...10 mn
Output	2 C/O	1 C/O	1 C/O
Reference	RM35LM33MW	RM35LV14MW	RM35S0MW

## Current / Voltage /Frequency monitoring relays



Function	Voltage Monitoring Under or Over Voltage		
Power Supply	24...240 VAC/DC 50/60Hz		
Monitoring range	0.05...0.5 V 0.3...3 V 0.5...5 V	1...10 V 5...50 V 10...100 V	15...150 V 30...300 V 60...600 V
Outputs	2 C/O		2 C/O
References	RM35UA11MW	RM35UA12MW	RM35UA13MW

2



Function	Voltage Monitoring Under or Over Voltage			Under and Over Voltage	
Power Supply	self powered			self powered	
Monitoring range	9...15 VDC	20...80 VAC/DC	65...260 VAC/DC	20...80 VAC/DC	65...260 VAC/DC
Outputs	1 C/O	1 C/O	1 C/O	1 C/O	1 C/O
References	RM17UAS14	RM17UAS16	RM17UAS15	RM17UBE16	RM17UBE15



Function	Current Monitoring		Frequency Monitoring
	over current	over or under current	Over or under frequency
Power supply	24...240 VAC/DC	24...240 VAC/DC 50/60 Hz	120...277 VAC 50/60 Hz
Monitoring range	2...20 A built-in CT	2...20 mA 10...100 mA 50...500 mA	0.15...1.5 A 0.5...5 A 1.5...15 A
Output	1 C/O	2 C/O	2 C/O
Reference	RM17JC00MW	RM35JA31MW	RM35JA32MW
			RM35HZ21FM

# Zelio Control Relays

## Lift / Pump / Motor monitoring relays



2

Function	Lift motor room temperature monitoring		+phase presence +phase sequence
Power supply	24...240 VAC/DC 50/60Hz		
Monitoring range	input PT100 3 wires Under -1...+11 °C Over +34...+46 °C		208...480 VAC 50/60Hz input PT100 3 wires Under -1...+11 °C Over +34...+46 °C
Output	1 C/O	2 NO	2 C/O
Reference	<b>RM35ATL0MW</b>	<b>RM35ATR5MW</b>	<b>RM35ATW5MW</b>



Function	Pump protection Current monitor +3 phase monitor	Motor Protection Winding Temperature monitor +3 phase monitor	
Power supply	self powered (single phase :230 VAC 50/60 Hz)	24...240 VAC/DC	
Monitoring range	Current: 0.1...10 A Voltage (three phase): 208...480 VAC 50/60Hz	Winding Temperature: PTC sensor Three phase voltage: 208...480 VAC 50/60Hz	
Output	1 C/O	2 NO	2 NO
Reference	<b>RM35BA10</b>	<b>RM35TM50MW</b>	<b>RM35TM250MW</b>



## Control relays for 3-phase supplies



Function	Rotational direction and presence of phases					
		+ Undervoltage	+ Over and undervoltage	+ Asymmetry		
Adjustable time delay	without	without	0.1...10 s	0.1...10 s	fixed, 0.5 s	0.1...10 s
Supply voltage	220...440V	380...440V	400V	380...440V	380...440V	380...440V
Output	2 C/O	2 C/O	2 C/O	2 C/O	1 C/O	2 C/O
References	RM4TG20	RM4TU02	RM4TR34 (1)	RM4TR32 (2)	RM4TA02	RM4TA32

(1) Relay with fixed voltage thresholds.

(2) Relay with adjustable voltage thresholds.

2

## Current and voltage measurement relays

(3) Basic reference. 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 undervoltage					
	over and undercurrent		over and undervoltage			
Measuring range	3...30 mA	0.3...1.5 A	0.05 ...0.5 V	1...10 V	30...300 V	180...270 V
	10...100 mA	1...5 A	0.3 ...3 V	5...50 V	50...500 V	
Adjustable time delay	0.1...1 A	3...15 A	0.5...5 V	10...100 V		
	0.05...30 s	0.05...30 s	0.05...30 s	0.05...30 s	0.05...30 s	0.1...10 s
Output	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O
References	RM4JA31** (3)	RM4JA32** (3)	RM4UA31** (3)	RM4UA32** (3)	RM4UA33** (3)	RM4UB35

(4) Basic reference. 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 C/O	2 C/O
References	RM4LG01• (4)	RM4LA32** (4)

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

# Zelio Control Measurement and control relays

## REG temperature control relays



2

Type of relay			Size 24 x 48 mm - 1/32 DIN				
Input type			Thermocouple PT100 probe			Voltage/Current 1...5 V / 4...20 mA	
Integrated functions			Hysteresis, PID, auto-tuning, fuzzy logic, rampe 8 steps, automatic operating mode				
Alarm output			-		1	-	-
Communication			ModBus		-	ModBus	ModBus
Supply voltage			100...240 VAC			24 V AC/DC	100...240 VAC
References	Number/Output type	1/relay	REG24PTP1RHU	REG24PTP1ARHU	REG24PTP1RLU	REG24PUJ1RHU	REG24PUJ1RLU
		1/solid-state	REG24PTP1LHU	REG24PTP1ALHU	REG24PTP1LLU	REG24PUJ1LHU	REG24PUJ1LLU
		1/4-20 mA	REG24PTP1JHU	-	REG24PTP1JLU	-	-



Type of relay			Format 48 x 48 mm - 1/16 DIN			
Input type			Universal			
Integrated functions			Hysteresis, PID, auto-tuning, fuzzy logic, rampe 16 steps, automatic and manual operating mode			
Alarm output			2			
Communication			ModBus		-	ModBus
Supply voltage			100...240 VAC			24 V AC/DC
References	Number/Output type	1/relay	REG48PUN1RHU	REG48PUN1ARHU	REG48PUN1RLU	
		2/relay	REG48PUN2RHU	-	REG48PUN2RLU	
		1/solid-state	REG48PUN1LHU	REG48PUN1LHU	REG48PUN1LLU	
		1 + 1 solid-state	REG48PUN2RLHU	-	REG48PUN2RLLU	
		1/4-20 mA	REG48PUN1JHU	-	REG48PUN1JLU	
		1/solid-state + 1/4-20 mA	REG48PUN2LJHU	-	REG48PUN2LJLU	



Type of relay			Size 96 x 48 mm - 1/8 DIN			
Input type			Universal			
Integrated functions			Hysteresis, PID, auto-tuning, fuzzy logic, rampe 16 steps, automatic and manual operating mode			
Alarm output			3			
Communication			ModBus		-	ModBus
Supply voltage			100...240 VAC			24 V AC/DC
References	Number/Output type	1/relay	REG96PUN1RHU	REG96PUN1ARHU	REG96PUN1RLU	
		2/relay	REG96PUN2RHU	-	REG96PUN2RLU	
		1/solid-state	REG96PUN1LHU	REG96PUN1LHU	REG96PUN1LLU	
		1 + 1 solid-state	REG96PUN2RLHU	-	REG96PUN2RLLU	
		1/4-20 mA	REG96PUN1JHU	-	REG96PUN1JLU	
		1/solid-state + 1/4-20 mA	REG96PUN2LJHU	-	REG96PUN2LJLU	

# Zelio Count Counters Totalisers



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	41.5 x 31 mm	30 x 20 mm	60 x 50 mm	60 x 50 mm	48 x 24 mm
Certifications	cUR	None	cUR	cUR	None
References	<b>XBKT50000U10M</b>	<b>XBKT60000U00M</b>	<b>XBKT60000U10M</b>	<b>XBKT80000U00M</b>	<b>XBKT81030U33E</b>

(1) With electrical interlocking.

2

## Hours counters



Display	LCD
Supply voltage	Battery
Number of digits / display	8 (999,999.99 h)
Supply frequency	Mode: 1/100 hour
Type of zero reset	Manual (1)
Front face dimensions, W x H	48 x 24 mm
Certifications	None
References	<b>XBKH81000033E</b>

## 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	48 x 48 mm					
Preselection number	1	2	1	2		
Certifications	cURus	cURus	cURus	cURus		
References	Supply voltage	24 VDC	<b>XBKP61130G30E</b>	<b>XBKP61230G30E</b>	<b>XBKP62130G30E</b>	<b>XBKP62230G30E</b>
		115 VAC	<b>XBKP61130G31E</b>	<b>XBKP61230G31E</b>	–	–
		230 VAC	<b>XBKP61130G32E</b>	<b>XBKP61230G32E</b>	<b>XBKP62130G32E</b>	<b>XBKP62230G32E</b>



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

(1) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.

(2) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation.



Type of modular timer width 17.5 mm, relay output	Asymmetrical flashing	Pulse on energisation	Off delay	Timing on impulse
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 C/O	1 C/O	1 C/O	1 C/O
References	RE11RLMU	RE11RHMU	RE11RCMU	RE11RBMU



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

(3) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.



Panel-mounted relays	Timer on-delay	Asymmetrical flasher	Multifunction (4)	Multifunction (5)
Power supply	24...240 VAC/DC			
Time range	0,02 s...300 h			
Output	2 relay 5 A			
Reference	RE48ATM12MW	RE48ACV12MW	RE48AMH13MW (6)	RE48AML12MW
	Back panel mounting socket RUZC2M	RUZC3M	RUZC2M	RUZC3M
	Front panel mounting socket RE48ASOC8SOLD	RE48ASOC11SOLD	RE48ASOC8SOLD	RE48ASOC11SOLD

(4) Timer on-delay / pulse on energization

(5) Timer on-delay / calibrator / timer off-delay / symmetrical flasher

(6) 1 selectable in instantaneous

## Industrial timers



Type of single function relay width 22.5 mm, 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 C/O	2 C/O (1)	1 C/O	2 C/O (1)	1 C/O
References	RE7TL11BU	RE7TP13BU	RE7RB11MW	RE7RL13BU	RE7RM11BU

(1) 1 selectable in instantaneous mode.



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

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

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

(4) 1 selectable in instantaneous mode

## Miniature plug-in relays, relay output



Functions				
Timing ranges	7 switchable ranges	0.1 s...1 s - 1 s...10 s - 0.1 min...1 min - 1 min...10 min - 0.1 h...1 h - 1 h...10 h - 10 h...100 h		
Relay output		4 timed C/O contacts	2 timed C/O contacts	
Rated current		3 AC 5 A	AC 5 A	
Voltages	24 VDC	RE XL4TMBD	RE XL2TMBD	
	24 VAC 50/60 Hz	RE XL4TMB7	RE XL2TMB7	
	120 VAC 50/60 Hz	RE XL4TMF7	RE XL2TMF7	
	230 VAC 50/60 Hz	RE XL4TMP7	RE XL2TMP7	
Socket with mixed contact terminals	With screw clamp	RXZE2M114	RXZE2M114	
	With connector	RXZE2M114M	RXZE2M114M	



2

Type	Thermocouple				
Temperature range	0...150 °C 32...302 °F	0...300 °C 32...572 °F	0...600 °C 32...1112 °F	0...600 °C 32...1112 °F	0...1200 °C 32...2192 °F
Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMTJ40BD	RMTJ60BD	RMTJ80BD	RMTK80BD	RMTK90BD

## Universal PT 100



Type	PT 100				
Temperature range	-40...40 °C -40...104 °F	-100...100 °C -148...212 °F	0...100 °C 32...212 °F	0...250 °C 32...482 °F	0...500 °C 32...932 °F
Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT10BD	RMPT20BD	RMPT30BD	RMPT50BD	RMPT70BD

## Optimum PT 100



Type	PT 100				
Temperature range	-40...40 °C -40...104 °F	-100...100 °C -148...212 °F	0...100 °C 32...212 °F	0...250 °C 32...482 °F	0...500 °C 32...932 °F
Output range	0...10 V				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT13BD	RMPT23BD	RMPT33BD	RMPT53BD	RMPT73BD

2

## Universal Analog Converter



Type	Analog Converter			
Input range	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA	0...50 V / 0...300 V 0...500 V	0...1,5 A / 0...5 A 0...15 A
Output range	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA Switchable	0...10 V 0...20 mA 4...20 mA Switchable	0...10 V or 0...20 mA ou 4...20 mA
Dimensions H x W x D	80 x 22,5 x 80 mm			80 x 45 x 80 mm
Voltage	24 VDC - Non isolated	24 VDC - Isolated	24 VDC - Isolated	24 VDC - Isolated
References	RMCN22BD	RMCL55BD	RMCV60BD	RMCA61BD



### Compact smart relays

### With display, a.c. power supply

Supply voltage	24 VAC		48 VAC	100...240 VAC			
	12	20	20	10	12	20	20
Number of inputs/outputs	12	20	20	10	12	20	20
Number of inputs	Discrete inputs						
	8	12	12	6	8	12	12
Number of outputs	4 relay	8 relay	8 relay	4 relay	4 relay	8 relay	8 relay
Dimensions, W x D x H (mm)	71.2x59.5x107.6		124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6	
Clock	yes	yes	no	no	yes	no	yes
References	SR2B121B	SR2B201B	SR2A201E	SR2A101FU (1)	SR2B121FU	SR2A201FU (1)	SR2B201FU

(1) Programming on smart relay in LADDER language only



### Compact smart relays

### With display, d.c. power supply

Supply voltage	12 VDC		24 VDC			
	12	20	10	12	20	20
Number of inputs/outputs	12	20	10	12	20	20
Number of inputs	Discrete inputs					
	8	12	6	8	12	12
	including 0-10 V analogue inputs					
	4	6	-	4	2	6
Number of outputs	4 relay	8 relay	4 relay	4	8 relay	8
Dimensions, W x D x H (mm)	71.2x59.5x107.6		71.2x59.5x107.6		124.6x59.5x107.6	
Clock	yes	yes	no	yes	no	yes
References	SR2B121JD	SR2B201JD	SR2A101BD (1)	SR2B12●BD (2)	SR2A201BD (1)	SR2B20●BD (2)

(1) Programming on smart relay in LADDER language only

(2) Replace the ● by number 1 to order a smart relay with **relay output** or by 2 for a smart relay with **transistor output** (Example: SR2B121BD)



### Compact smart relays

### Without display and without buttons

Supply voltage	100...240 VAC			24 VDC		
	10	12	20	10	12	20
Number of discrete inputs/outputs	10	12	20	10	12	20
Number of inputs	Discrete inputs					
	6	8	12	6	8	12
	including 0-10 V analogue inputs					
	-	-	-	-	4	6
Number of outputs	4 relay	4 relay	8 relay	4 relay	4 relay	8 relay
Dimensions, W x D x H (mm)	71.2x59.5x107.6		124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6
Clock	no	yes	yes	no	yes	yes
References	SR2D101FU (1)	SR2E121FU	SR2E201FU	SR2D101BD (1)	SR2E121BD (3)	SR2E201BD (3)

(1) Programming on smart relay in LADDER language only

(3) To order a smart relay for a **24 VAC supply** (no analogue inputs), delete the letter **D** from the end of the reference (**SR2E121B** and **SR2E201B**)



## Modular, SR3



Modular smart relays*	With display						
	24 VAC		100...240 VAC		12 VDC	24 VDC	
Supply voltage	24 VAC		100...240 VAC		12 VDC	24 VDC	
Number of inputs/outputs	10	26	10	26	26	10	26
Number of inputs	Discrete inputs		Discrete inputs		Discrete inputs	Discrete inputs	
	6	16	6	16	16	6	16
	including 0-10 V analogue inputs		including 0-10 V analogue inputs		including 0-10 V analogue inputs	including 0-10 V analogue inputs	
Number of outputs	4 relay	10 relay	4 relay	10 relay	6	4	6
Dimensions, W x D x H (mm)	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6
Clock	yes	yes	yes	yes	yes	yes	yes
References	SR3B101B	SR3B261B	SR3B101FU	SR3B261FU	SR3B261JD	SR3B10BD (1)	SR3B26BD (1)

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

(1) Replace the ● by number 1 to order a smart relay with relay output (SR3B101BD) or by 2 for a smart relay with transistor output (SR3B102BD)



Extension modules for Zelio Logic SR3B●●●●● (2)	Communication		Discrete Inputs/Outputs			Analogue Inputs/Outputs
	Modbus	Ethernet				
Network	Modbus	Ethernet	-		-	-
Number of inputs/outputs	-	-	6	10	14	4
Number of inputs	Discrete		4	6	8	-
	Analogue (0...10 V, 0...20 mA, PT100)		-	-	-	2 (1 PT100 max.)
Number of outputs	Relay		2 relay	4 relay	6 relay	-
	Analogue (0...10 V)		-	-	-	2
Dimensions, W x D x H (mm)	35.5x59.5x107.6		35.5x59.5x107.6		72x59.5x107.6	35.5x59.5x107.6
References	24 VAC		SR3XT61B	SR3XT101B	SR3XT141B	-
	100...240 VAC		SR3XT61FU	SR3XT101FU	SR3XT141FU	-
	12 VDC		SR3XT61JD	SR3XT101JD	SR3XT141JD	-
	SR3MBU01BD	SR3NET01BD	SR3XT61BD	SR3XT101BD	SR3XT141BD	SR3XT43BD

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

## Zelio Soft 2 software and programming tools



Zelio Soft 2 software, connecting cables, wireless connecting, memory	Multilingual programming software	Connecting cables				Wireless connection	Back-up memory
Description	CD ROM PC (Windows XP, Vista 32 bits and Windows 7 32 bits) (3)	Serial PC/Smart relay	USB PC/Smart relay	XBT N/R Interface	HMISTO Interface	Bluetooth interface	EEPROM
References	SR2SFT01	SR2CBL01	SR2USB01	SR2CBL08	SR2CBL09	SR2BTC01	SR2MEM02

(3) CD-ROM including Zelio Soft 2 programming software, an application library, a self-training manual, installation instructions and a user's manual

## Communication interface for SR2/SR3

Interface, modems, Zelio Logic Alarm software	Communication interface	Modems (4)		Alarm management software
Supply voltage	12...24 VDC	12...24 VDC	12...24 VDC	-
Description	-	Analogue modem	GSM modem	PC CD-ROM (Windows 98, NT, 2000, XP)
Dimensions, W x D x H (mm)	72x59.5x107.6	120.7x35x80.5	111x 25.5x54.5	-
References	SR2COM01	SR2MOD01	SR2MOD02	SR2SFT02

(4) Must be used in conjunction with communication interface SR2COM01



2

Type de base		Compact			
		Non expandable bases		Expandable bases	
Number of digital I/O		10	16	24	40
Number of digital inputs (24 VDC)		6 sink/source	9 sink/source	14 sink/source	24 sink/source
Number of digital outputs		4 relay (2 A)	7 relay (2 A)	10 relay (2 A)	14 relay (2 A), 2 solid-state (1 A)
Type of connection		Screw terminals (non removable)			
Possible I/O expansion modules		–	–	4	7
Counting		3 x 5 kHz, 1 x 20 kHz			
PWM positioning		–			
Serial ports		1 x RS 485	1 x RS 485; option: 1 x RS 232C or RS 485		
Protocol		Modbus master/slave, ASCII, I/O relocation			
Ethernet port		–	–	–	RJ45 Ethernet
Dimensions, W x D x H		80 x 70 x 90 mm	80 x 70 x 90 mm	95 x 70 x 90 mm	157 x 70 x 90 mm
References	Supply voltage 100...240 VAC	<b>TWDLCAA10DRF</b>	<b>TWDLCAA16DRF</b>	<b>TWDLCAA24DRF</b>	<b>TWDLCAE40DRF (1)</b>
	Supply voltage 19.2...30 VDC	<b>TWDLCAA10DRF</b>	<b>TWDLCAA16DRF</b>	<b>TWDLCAA24DRF</b>	<b>TWDLCAE40DRF (1)</b>
	Real-time clock (option)	<b>TWDXCPRTC</b>			
	Display unit (option)	<b>TWDXCPODC</b>			
	Memory cartridge (option)	<b>TWDXCPMFK32 (3)</b>			<b>TWDXCPMFK64 (4)</b>

(1) 40 I/O version without Ethernet also available: TWDLCAA40DRF and TWDLCAE40DRF

## Modular bases



Type of base		Modular		
Number of digital I/O		20		40
Number of digital inputs (24 VDC)		12 sink/source	12 sink/source	24 sink/source
Number of digital outputs		8 transistor, source (0.3 A)	6 relay (2 A) & 2 trans., source (0.3 A)	16 transistor, source (0.3 A)
Type of connection		HE10 connector	Removable screw terminals	HE10 connector
Possible I/O expansion modules		4	7	7
Supply voltage		24 VDC		
Counting		2 x 5 kHz, 2 x 20 kHz		
PLS/PWM positioning		2 x 7 kHz		
Serial ports		1 x RS 485; option: 1 x RS 232C or RS 485		
Protocol		Modbus master/slave, ASCII, I/O relocation		
Dimensions, W x D x H		35.4 x 70 x 90 mm	47.5 x 70 x 90 mm	47.5 x 70 x 90 mm
References		<b>TWDLMDA20DTK (2)</b>	<b>TWDLMDA20DRT</b>	<b>TWDLMDA40DTK (2)</b>
	Real-time clock (option)	<b>TWDXCPRTC</b>		
	Display unit (option)	<b>TWDXCPODM</b>		
	Memory cartridge (option)	<b>TWDXCPMFK32 (3)</b>	<b>TWDXCPMFK64 (4)</b>	

(2) Sink version transistor outputs also available: TWDLMDA20DUK and TWDLMDA40DUK

(3) Application backup, program transfer

(4) Memory expansion, application backup, program transfer

## I/O expansion modules

For I/O expansion modules, please consult Modicon TM2 page 2/21

## Communication modules



Type of module	Serial interface			Serial interface adaptor		
	Physical layer (non isolated)	RS 232C	RS 485		RS 232C	RS 485
Connection	Mini-DIN connector	Screw terminals		Mini-DIN connector	Screw terminals	
Protocol	Modbus master/slave, ASCII, I/O relocation					
Twido base compatibility	Modular base TWDLMDA			Compact base TWDLCAA16/24DRF Modular base via integrated display module TWDXCPODM		
References	TWDNOZ232D	TWDNOZ485D	TWDNOZ485T	TWDNAC232D	TWDNAC485D	TWDNAC485T

2



Type of module	Modem for Twido	CANopen expansion	Ethernet interface	Modbus isolation module	Modbus junction module
Number of modules	–	1	1	–	–
Connection	–	SUB-D9	RJ45	RJ45	RJ45
Twido base compatibility	–	20, 24 or 40 I/O base	All models	All models	All models
References	SR2MOD03	TWDNCO1M	499TWD01100	TWDXCAISO	TWDXCAT3RJ

(1) 2 modules max., 62 digital slaves max., 7 analogue slaves max., AS-Interface/M3, V 2.11 (profile S.7.4 not supported)

## Programming software



Software, connecting cables, interfaces	TwidoSuite software EN/FR	Connecting cables		Bluetooth® USB adaptor	Bluetooth® gateway
Application	PC with Windows XP or Vista	Twido/PC USB port	Twido/PC serial port	For PC not fitted with Bluetooth®	For Twido controller
References	TWDBTFU10M	TSXUSB485 TSXCRJMD25	TSXPCX1031	VW3A8115	VW3A8114



SoMachine



Type of base	Compact			
Number of digital I/O	24 (removable battery to be ordered separately)			
Supply voltage	24VDC	100-240VAC	24VDC	100-240VAC
Number of digital inputs (24VDC)	14, 8 of which can be assigned as fast inputs			
Number of digital outputs	10 transistor, 4 of which can be configured as fast outputs	4 transistor + 6 relays	10 transistor, 4 of which can be configured as fast outputs	4 transistor + 6 relays
Type of connection	Removable screw terminal blocks (as standard) Removable spring terminal blocks (as option)			
Possible I/O expansion modules	7 modules: digital, analog, high-speed counter (3 max.), master AS-Interface (2 max.)			
High-speed counting (32 bits capacity)	8 x 100kHz simple channels, 4 x 100kHz simple channels + 1 x 100kHz advanced channels, or 2 x 100kHz advanced channels			
Motion or reflex functions	2 advanced channels, PWM:20kHz, PTO: 100kHz		4 advanced channels HSC reflex functions:100kHz	
PID Regulation	Yes			
Serial Ports	1 RS 232/485 (SL1) serial link		1 RS232/485 (SL1) serial link, 1 RS485 (SL2) serial link	
CANopen	-		1 master for 16 slaves max.	
Dimensions, W x D x H	157 x 86 x 118 mm			
References	TM238LDD24DT	TM238LDA24DR	TM238LFDC24DT	TM238LFAC24DR

## High-speed counting modules



Type of module	High-speed counting	
Modularity	2 channels	
Maximum number of modules per base	3	
Number of sensor inputs	6 per channel	
Number of actuator outputs	2 per channel	
Capacity	31 bits + sign	
Frequency on inputs	60kHz	
Connection	1 screw terminal per channel	1 spring terminal per channel
References	TM200HSC206DT	TM200HSC206DF

## Communication module and accessory



Designation	Ethernet interface	Program loader
Description	Ethernet Modbus/TCP	Kit: program loader, cable (USB/mini-B USB), 2 batteries (type AA/LR6)
Maximum number of modules per base	1	-
References	499TWD01100	TM2USBABDEV1

(1) Requires the use of a USB memory stick (not supplied)



Type of module		Analog inputs							
<b>Number of inputs</b>		2 I	2 I	4 I	8 I	8 I	8 I	8 I	
<b>Connection</b>		Removable screw terminals							
<b>Inputs</b>		RJ11							
	Range	Thermocouples type K, J, T	0...10 V (1) 4...20 mA (2)	0...10 V (1) 0...20 mA (2) θ °C	0...10 V (1) 0...20 mA (2)	PTC/NTC	Thermo probe Pt100 / Pt1000 -200...+600 °C		
	Resolution	12 bits (4096 points)			10 bits (1024 points)		12 bits (4096 points)		
<b>Supply voltage</b>		24 VDC							
<b>Dimensions, W x D x H</b>		23.5 x 70 x 90 mm					39.1x70x90 mm		
<b>References</b>		TM2AMI2LT	TM2AMI2HT	TM2AMI4LT	TM2AMI8HT	TM2ARI8HT	TM2ARI8LT	TM2ARI8LRJ	

(1) Non differential

(2) Differential



Type of module		Analog Outputs, Inputs/Outputs (mixed)				
<b>Number of inputs and/or outputs</b>		1 O	2 O	2 I / 1 O	2 I / 1 O	4 I / 2 O
<b>Connection</b>		Removable screw terminals				
<b>Inputs</b>	Range	–	–	0...10 V (1) 4...20 mA (2)	Thermocouple type K, J & T 3-wire Pt 100 thermal probe	0...10 V (1) 4...20 mA (2)
	Resolution	–	–	12 bits (4096 points)	12 bits (4096 points)	12 bits (4096 points)
<b>Outputs</b>	Range	0...10 V (1) 4...20 mA (2)	± 10 V	0...10 V (1) 4...20 mA (2)	0...10 V (1) 4...20 mA (2)	0...10 V (1) 4...20 mA (2)
	Resolution	12 bits	11 bits + sign	12 bits	12 bits	12 bits
<b>Supply voltage</b>		24 VDC				
<b>Dimensions, W X D x H</b>		23.5 x 70 x 90 mm				
<b>References</b>		TM2AMO1HT	TM2AVO2HT	TM2AMM3HT	TM2ALM3LT	TM2AMM6HT

(1) Non differential

(2) Differential



Type of module		Digital Inputs/Outputs						
<b>Number of inputs and/or outputs</b>		8	16	16	32	4 I / 4 O	16 I / 8 O	
<b>Connection</b>		Removable screw terminals			HE10 connectors		Removable screw terminals	Spring terminals (non removable)
<b>References</b>	Inputs	24 VDC sink	TM2DDI8DT	–	–	–	–	
		24 VDC sink/source	–	TM2DDI16DT	TM2DDI16DK	TM2DDI32DK	–	
	Outputs	120 V sink	TM2DAI8DT	–	–	–	–	
		Relay (2 A)	TM2DRA8RT	TM2DRA16RT	–	–	–	
		Transistor, source 0.5 A	TM2DDO8TT	–	–	–	–	
		Transistor, source 0.4 A	–	–	TM2DDO16TK	TM2DDO32TK	–	
		Transistor, sink 0.1 A	TM2DDO8UT	–	TM2DDO16UK	TM2DDO32UK	–	
	Inputs, 24 VDC + Outputs, Relais 2 A		–	–	–	–	TM2DMM8DRT	TM2DMM24DRF



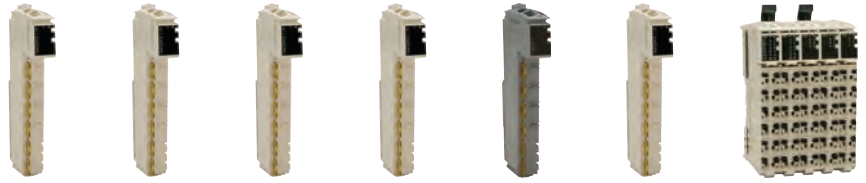
SoMachine















Controller type		42 digital I/O	42 digital I/O & CANopen
Internal memory	RAM	64 MB	
	Flash Eeprom	128 MB	
Typical Boolean instruction time		22 ns	
User program size		128 program K instructions	
Power supply		24 V DC	
Inputs	Digital	26 inputs 24VDC including 8 counter inputs (200 kHz)	
	Analog	-	
Outputs	Transistor	16 outputs (0,5A) including 4 reflex outputs (100 kHz)	
	Relay	-	
Optional communication ports		-	
Communication	USB-B mini-port	Programming port for SoMachine software	
	USB-A port	Connection of a USB memory stick for transferring programs, data files, firmware updates	
	RJ45 port (MBS)	RS232 serial link	
		RS485 serial link (supplies 250 mA, 5 V for HMI power supply)	
		Protocols: Modbus ASCII/RTU Master/Slave, ASCII (character string)	
SUB-D connector (CAN0)	-	CANopen bus master (63 slaves)	
RJ45 port (Ethernet)	Ethernet TCP, Ethernet IP, FTP server, Web server, Ethernet Modbus TCP		
Max. number of expansions		250 modules (local or remote) for digital IO, analog IO or Expert functions	
References		<b>TM258LD42DT</b>	<b>TM258LF42DT</b>



Controller type		42 digital I/O relays & CANopen	66 digital I/O & CANopen & 4 analog inputs
Internal memory	RAM	64 MB	
	Flash Eeprom	128 MB	
Typical Boolean instruction time		22 ns	
User program size		128 program K instructions	
Power supply		24 V DC	
Inputs	Digital	26 inputs 24VDC including 8 counter inputs (200 kHz)	38 inputs 24VDC including 8 counter inputs (200 kHz)
	Analog	-	4 analog inputs +10 V/-10V, 4-20mA/0-20 mA 12 bits resolution
Outputs	Transistor	4 reflex outputs (100 kHz)	28 outputs (0,5A) including 4 reflex outputs (100 kHz)
	Relay	12 relays	-
Optional communication ports		2 PCI slots for optional communication modules	
Communication	USB-B mini-port	Programming port for SoMachine software	
	USB-A port	Connection of a USB memory stick for transferring programs, data files, firmware updates	
	RJ45 port (MBS)	RS232 serial link	
		RS485 serial link (supplies 250 mA, 5 V for HMI power supply)	
		Protocols: Modbus ASCII/RTU Master/Slave, ASCII (character string)	
SUB-D connector (CAN0)	CANopen bus master (63 slaves)		
RJ45 port (Ethernet)	Ethernet TCP, Ethernet IP, FTP server, Web server, Ethernet Modbus TCP		
Max. number of expansions		250 modules (local or remote) for digital IO, analog IO or Expert functions	
References		<b>TM258LF42DR</b>	<b>TM258LF66DT4L</b>



Type of module	Input			Output			Input Output Digital
	Digital	Analog		Digital	Analog		
Number of inputs	12 sink	–	–	–	–	–	24
Number of outputs	–	–	–	12 source	4 relay	–	18
Number of inputs	–	4	4	–	–	–	–
Number of outputs	–	–	–	–	–	4	–
Nominal input current	24 VDC	–	–	–	–	–	24 VDC
Nominal output current	–	–	–	24 VDC	30 VDC/ 230 VAC	–	24 VDC
Type	–	Thermal probe	Voltage / Current	–	–	Voltage / Current	–
Associated bus sub-bases (2)							–
	TM5ACBM11	TM5ACBM11	TM5ACBM11	TM5ACBM11	TM5ACBM12	TM5ACBM11	
Associated terminal block (2)							–
	TM5ACTB12	TM5ACTB12	TM5ACTB12	TM5ACTB12	TM5ACTB32	TM5ACTB12	
References	TM5SDI12D	TM5SAI4PH	TM5SAI4L	TM5SDO12T	TM5SDO4R	TM5SAO4L	TM5C24D18T

(1) Modicon M258 and Modicon LMC058 controllers offer the possibility of creating IP20 or IP67 islands of remote I/O via the TM5 expansion bus. For Modicon TM7 (IP67) and Modicon TM5 (IP20) modular I/O systems, refer to the essential guide DIA3ED2070413EN or consult [www.schneider-electric.com](http://www.schneider-electric.com)

(2) To be ordered separately

# Modicon LMC058 Motion Controllers Bases



SoMachine



Controller type		42 digital I/O	42 digital I/O + 4 analog inputs
CANmotion Drive synchronisation	Up to 4 axes	2 ms	
	Up to 8 axes	4 ms	
Internal memory	RAM	64 MB	
	Flash Eeprom	128 MB	
Typical Boolean instruction time		22 ns	
Expert application	Relative and Absolute positioning	Yes	
	Velocity control	Yes	
	Homing	Yes	
	CNC visual editor	Yes	
	CAM profiles	Yes	
	Electronic gear	Yes	
	Interpolation	Yes	
	Shift Compensation	Yes	
Embedded number of digital inputs		26 including 8 high speed counter	
Embedded number of digital outputs		16 outputs transistor (0.5 A) including 4 reflex outputs	
Embedded number of analog inputs		–	4
Optional communication ports		–	2 PCI slots for optional communication modules
Communication	USB-B mini-port	Programming port for SoMachine software	
	USB-A port	Connection of a USB memory stick for transferring programs, data files, firmware updates	
	RJ45 port (MBS)	RS232 serial link RS485 serial link (supplies 250 mA, 5 V for HMI power supply) Protocols: Modbus ASCII/RTU Master/Slave, ASCII (character string)	
	SUB-D connector (CAN0)	CANopen bus master (63 slaves)	
	SUB-D connector (CAN1)	CANmotion bus master (63 slaves)	
	SUB-D connector (Encoder)	Encoder input (incremental or SSI)	
	RJ45 port (Ethernet)	Ethernet IP device	
		Ethernet TCP Modbus	
SoMachine protocol			
FTP server embedded Web server embedded			
Max. number of expansions		250	
References		LMC058LF42	LMC058LF424

## I/O expansion modules

For I/O expansion modules, please consult Modicon TM5 page 2/23





SoMachine



Type		Characteristics		
Display	LCD screen size / Resolution	3,8" / QVGA	5,7" / QVGA	
	Type	STN monochrome, amber or red	STN monochrome, gray	STN 4096 colours
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad		
	Curves / Alarm logs	Yes, with log / Yes, incorporated		
	Control	5 languages IEC		
Communication	Serial link	–	1 Sub9 (RS 232/RS 422 - RS 485)	
	Networks	–	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45
Downloadable protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic) Uni-TE, Modbus, Modbus TCP		
Development software		SoMachine (on Windows XP and Vista)		
Dimensions W x D x H (mm)		130 x 76 x 104	207 x 76 x 157	
Compatibility with PLCs		Twido, Modicon TSX Micro, Modicon Premium, Modicon Quantum, Modicon M340		
«Compact Flash» card slot		No		
USB port Host type A		1	1	1
Built-in Ethernet TCP/IP		No	No	Yes
Integrated I/O		12I/6O 24 VDC	16I/16O 24 VDC	
Extensions		2 modules TM2 or CANopen module	3 modules TM2 or CANopen module	
Supply voltage		24 VDC		
References	Source Output	XBTGC1100T	XBTGC2120T	XBTGC2230T
	Sink Output	XBTGC1100U	XBTGC2120U	XBTGC2230U

2

## Extensions

Type of module	CANopen Master
Characteristics	Class M10 limited 16 slaves, Standard DS301 V4.O2
References	XBTZGCCAN

Type of module	Digitals Inputs / Outputs						
Characteristics	8I 24 VDC Screw terminal	16I 24 VDC Screw terminal	16I 24 VDC HE10	32I 24 VDC HE10	8I 120 VAC Screw terminal	4I 24 VDC 40 Relays Screw terminal	16I 24 VDC 80 Relays Screw terminal
References	TM2DDI8DT	TM2DDI16DT	TM2DDI16DK	TM2DDI32DK	TM2DAI8DT	TM2DMM8DRT	TM2DMM24DRF

Type of module	Digitals Inputs / Outputs					
Characteristics	8O Transistor 24 VDC Screw terminal	16O Transistor 24 VDC HE10	32O Transistor 24 VDC HE10	8O Relays 230 VAC 30 VDC Screw terminal	16O Relays 230 VAC 30 VDC Screw terminal	–
References	Source Output	TM2DD08TT	TM2DD016TK	TM2DD032TK	TM2DRA8RT	TM2DRA16RT
	Sink Output	TM2DD08UT	TM2DD016UK	TM2DD032UK	–	–

Type of module	Analog Inputs / Outputs					
Characteristics	2I Current/Voltage	2I Thermocouple	4I Current/Voltage Temperature	8I Current/Voltage	8I Temperature	8I PTC
References	TM2AMI2HT	TM2AMI2LT	TM2AMI4LT	TM2AMI8HT	TM2ARI8LRJ TM2ARI8LT	TM2ARI8HT

Type of module	Analog Inputs / Outputs				
Characteristics	1O Current/Voltage	2O Voltage	2I Current/Voltage 1O Current/Voltage	2I Temperature 1O Current/Voltage	4I Current/Voltage 2O Current/Voltage
References	TM2AMO1HT	TM2AVO2HT	TM2AMM3HT	TM2ALM3LT	TM2AMM6HT

For HMI Controllers **Magelis XBTGT/GK** with control function, refer to the Essential guide DIA1ED2040506EN or consult [www.schneider-electric.com](http://www.schneider-electric.com)



SoMachine

2

Type of card		Integrated controller card
Variable speed drive compatibility		Altivar 71 / Altivar 61 (1)
Power supply		24 VDC
Inputs	Digital	10 x 24 V DC inputs, 4 of which can be used for 2 high-speed counter inputs (100 kHz) or 2 incremental encoders (A/B) (100 kHz)
	Analog	2 x 0...20 mA inputs
Outputs	Digital	6 transistor outputs (2 A) - source
	Analog	2 x 0...20 mA outputs
Built-in communication ports	RJ45 port	Ethernet Modbus TCP, Web/FTP Server
	SUB-D connector (male 9-way)	Master CANopen bus (16 slaves)
	USB Mini-B port	SoMachine software programming
Real-time clock		Integrated
Typical time (for 1000 Boolean instructions)		942 µs
Data storage memory FRAM (Ferroelectric RAM)		64 KB
Compiled program size (saved in flash memory)		2 MB
User program size		1 MB
References		VW3A3521

(1) Refer to motion & drives essential guide or consult [www.schneider-electric.com](http://www.schneider-electric.com)



Type of card	I/O expansion cards (2)	
Designation	I/O extension logic	Extended
Description	1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 x 0...20 mA differential current analog input 1 software-configurable voltage (0...10 VDC) or current (0...20 mA) analog input 2 software-configurable voltage (±10V, 0...10 VDC) or current (0...20 mA) analog inputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
References	VW3A3201	VW3A3202

(2) Altivar 71 / 61 variable speed drives can only take one I/O expansion card with the same reference



SoMachine

Type	OEM machine programming software		
<b>Compatibility</b>	Modicon M238 - Logic controller Modicon M258 - Logic controller Modicon LMC058 - Motion controller Magelis XBT GC - HMI controllers XBT GT/GK with control function - HMI controllers Altivar IMC - Drive controller		
<b>IEC 61131-3 Programming languages</b>	IL (Instruction List) LD (Ladder Diagram) SFC (Sequential Function Chart) ST (Structured Text) FBD (Function Block Diagram) CFC (Continuous Function Chart)		
<b>Languages</b>	English French German Italian Spanish Simplified Chinese.		
<b>System Requirements</b>	Processor: Pentium 3 - 1.2 GHz or higher RAM Memory: 2 GByte; recommended: 3 GByte Hard Disk: 3.5 GB, recommended: 4 GB OS: Windows XP Professional, Windows Vista 32 Bit Drive: DVD reader Display: 1024 × 786 pixel resolution or higher Peripherals: a Mouse or compatible pointing device Peripherals: USB interface Web Access: Web registration requires Internet access		
<b>Licence type</b>	Trial (30 days)	1 (Single)	10 (Team)
<b>References DVD</b>	<b>MSDCHNSFN30</b>	<b>MSDCHNLMUA</b>	<b>MSDCHNLMTA</b>

2

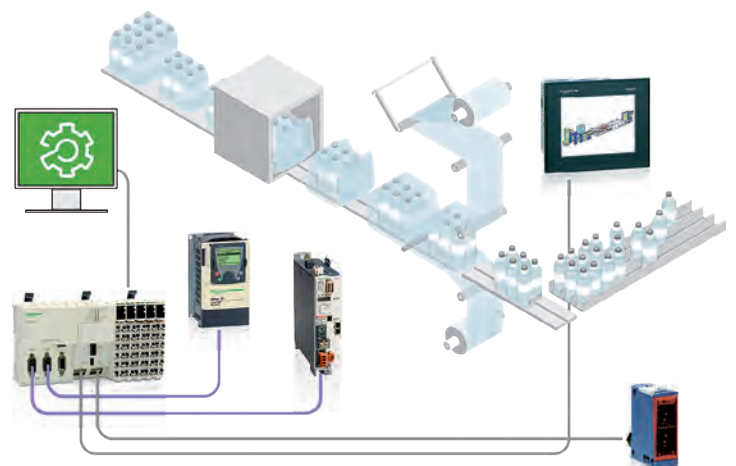
## Simplify machine programming and commissioning

The SoMachine software solution, developed specifically for OEM machine builders, allows you to design, commission and service your machine in a single environment. It helps you get to market faster and gives your machines a competitive advantage.

A single software suite to create and manage your complete automation solution from control and HMI to remote devices.

### Flexible and Scalable Control platforms include:

- Controllers:
    - > HMI controllers: XBT GC, XBT GT/GK CANopen,
    - > Logic controllers: Modicon M238, Modicon M258,
    - > Motion Controller Modicon LMC 058,
    - > Integrated Controller Card Altivar IMC,
    - > Modicon TM2, TM5 and TM7 I/O offers
  - HMI:
    - > HMI Magelis graphic panels: XBT GT, XBT GK, HMI STO, HMI STU, XBT GH
- SoMachine is a professional, efficient, and open software solution integrating Vijeo-Designer. It integrates also the configuring and commissioning tool for motion control devices. It features all IEC 61131-3 languages, integrated field bus configurators, expert diagnostics and debugging, as well as outstanding capabilities for maintenance and visualisation.



1

<b>Software suite</b> for controllers, HMI, and remote devices.	<b>Download</b> to transfer the entire machine program in a single step	<b>Connection</b> to access to all devices	<b>File</b> Create and maintain a single project file
--	--	---	--



Type of processor			Standard		High-performance			
Number of racks			2 (4, 6, 8 or 12 slots)		4 (4, 6, 8 or 12 slots)			
<b>Maximum configuration</b>			Maximum 24 slots for processor and modules (excluding power supply module)		Maximum 48 slots for processor and modules (excluding power supply module)			
<b>Functions</b>	Max. no. (1)	Discrete I/O	512		1024			
		Analog I/O	128		256			
		Control channels	Programmable loops (via CONT-CTL process control EFB library)					
		Counter channels	20		36			
		Motion control	–		Independent axes on CANopen bus (via MFB library)	–	Independent axes on CANopen bus (via MFB library)	
		Integrated connections	Ethernet TCP/IP	–				
			CANopen master bus Integrated port	–		1 (SUB-D9)	–	1 (SUB-D9)
			Serial link	1 RJ45 port, Modbus master/slave RTU/ASCII or character mode (non isolated RS 232C/RS 485), 0.3...19.2 Kb/s				
			USB port	1 port, 12 Mb/s				
		Communication module	Ethernet TCP/IP	1 RJ45 port, 10/100 Mb/s with: - Transparent Ready class B30 standard web server with BMX NOE 0100 module - Transparent Ready class C30 configuration web server with BMX NOE 0110 module				
<b>Internal user</b>	Total capacity	2048 Kb		4096 Kb				
<b>RAM</b>	Program, constants and symbols	1792 Kb		3584 Kb				
	Data	128 Kb		256 Kb				
<b>Execution time for one instruction</b>	Boolean	0.18 µs		0.12 µs				
	On words or fixed point arithmetic	Single-length words	0.38 µs		0.25 µs			
		Double-length words	0.26 µs		0.17 µs			
	On floating points	1.74 µs		1.16 µs				
<b>No. of K instructions executed per ms</b>	100% Boolean	5.4 Kinst/ms		8.1 Kinst/ms				
	65% Boolean and 35% fixed arithmetic	4.2 Kinst/ms		6.4 Kinst/ms				
<b>System overhead</b>	Master task	1.05 ms		0.70 ms				
	Fast task	0.20 ms		0.13 ms				
<b>References</b>			<b>BMXP341000</b>	<b>BMXP342000</b>	<b>BMXP3420102</b>	<b>BMXP342020</b>		
					<b>BMXP3420302</b>			

(1) Only affects in-rack modules. The remote I/O on the CANopen bus are not included in these maximum numbers.

## Memory cards



Type of card	8 MB memory card	8 MB memory card + 8 MB files	8 MB memory card + 128 MB files
Use	Supplied as standard with each processor. Used for:	As replacement for the memory card supplied as standard with each processor, used for:	
	Backup of program, constants, symbols and data		
	–	File storage, 8 MB	File storage, 128 MB
	Activation of class B10 web server		
Compatibility	BMXP341000/20...	BMXP3420...	
References	<b>BMXRMS008MP</b>	<b>BMXRMS008MPF</b>	<b>BMXRMS0128MFP</b>

2



Type of module		Ethernet Network Communication		
<b>Speed</b>		10/100 Mb/s		10/100 Mb/s
<b>Protocols</b>		Modbus TCP	TCP/IP (Uni-TE, Modbus)	EtherNet/IP and Modbus/TCP
<b>Conformity class</b>		Transparent Ready class B30		-
<b>Communication service</b>	I/O Scanning service	Yes		Yes
<b>Transparent Ready</b>	FDR service	Yes (client/server)		Yes (client / server)
	SNMP network management service	Yes		Yes (agent)
	Global Data service	Yes		No
	SOAP/XML Web service	No	Server	-
	Bandwidth management	Yes		Yes
	Qos	-		Yes
	RSTP	-		No SOAP
<b>References</b>		<b>BMXNOE0100</b>	<b>BMXNOE0110</b>	<b>BMXNOC0401</b>
<b>Memory card</b>	Use	Provides services conforming to Transparent Ready: Class B		No
			Class C 32 MB available for user web pages	
<b>References</b>		<b>BMXRWSB000M</b>	<b>BMXRWSFC032M</b>	

Qos: Quality of Service - RSTP: Rapid Spanning Tree Protocol



Type of module		PROFIBUS DP V1		
<b>Designation</b>		PROFIBUS Remote Master (Ethernet Modbus TCP/PROFIBUS DP V1) compatible with all programmable automation under UNITY and supporting the I/O scanning service		
		Standard version 0...65°	Hardened version -25...70°, varnished	
<b>Speed</b>		9.6 Kb...12 Mb		
<b>Interface</b>		RS485 isolated (Sub-D 9 pin female connector)		
<b>PROFIBUS Services</b>		Master Class 1 and 2, support for 125 slaves, Sync & Freeze, Extended diagnostics. Delivered with communication DTM allowing any FDT tool to access the PROFIBUS slaves from the Ethernet network by way of the PROFIBUS Remote Master		
<b>References</b>		<b>TCSEGPA23F14F</b>	<b>TCSEGPA23F14FK</b>	

Type of module	Serial link (1)	AS-Interface (1)
<b>Number of interfaces</b>	2	1
<b>Speed</b>	115 Kbits/s	-
<b>Profile</b>	-	M4 (AS-i V3)
<b>References</b>	<b>BMXNOM0200</b>	<b>BMXEIA0100</b>

(1) For BMXNOC0401 (EtherNet/IP), Profibus DP Gateway TSX EGPA23F14F, Modbus Plus Gateway TCS EGDB23F24FA

## Communication modules



Type of module		RTU communication
<b>Designation</b>		Communication
<b>Protocols</b>		IEC 60870-5-101, DNP3 (subset level 3), Modbus/TCP, IEC 60870-5-104, DNP3 IP, DNP3 (subset level 3), Multi-protocols master slave
<b>Ports</b>	Ethernet port	10BASE-T/100BASE-TX or PPPoE (PPP Protocol over Ethernet) for ADSL external modem
	Serial port	Non-isolated RS 232/485 (Serial link) or RS232 external modem (Radio, PSTN, GSM, GPRS/3G)
<b>Conformity class</b>		Transparent Ready class C30
<b>Transparent Ready communication services</b>	I/O Scanning service	-
	Global Data service	-
	NTP me synchronization	Yes
	FDR service	Yes (client)
	SMTP e-mail notification service	Yes
	SOAP/XML Web service	Server
	SNMP network management service	Yes (agent)
<b>RTU communication services</b>	Master or Slave configuration	Yes, IEC101/104 and DNP3, with Pull through routing of events
	RTU clock synchronization	via RTU protocol or NTP
	Time stamped data and events exchanges	Yes, IEC101/104 and DNP3, polled interrogations, Report by exception (RbE), unsolicited responses
	Time stamped events buffering and date stamped events	up to 100000 events, backup of events on power fail (10000)
	Automatic bacfill of time stamped events to Master/SCADA	Yes, on network disconnection/reconnection
	Data logging service	in CSV files in SD card memory (128 MB)
	Email/SMS service	Alarm and report notification
<b>Memory Card</b>	SD card 128 MB	Web server and Data logging CSV files
<b>Reference</b>		<b>BMXNOR0200H</b>



Type of module	Power supply modules				
<b>Voltage</b>	24 VDC isolated	24...48 VDC isolated	100...240 VAC		
<b>Nominal input current</b>	1A at 24 VDC	1.65 A at 24 VDC 0.83 A at 48 VDC	0.61 A at 115 VAC 0.31 A at 220 VDC	1.04 A at 0.52 A	100...150 VDC
<b>Micro-break duration</b>	≤ 1				
<b>Integrated protection</b>	Via internal fuse (not accessible)				
<b>Max. useful power</b>	17W	32 W	20 W	36 W	
<b>Max. dissipated power</b>	8.5 W				
<b>Removable connectors</b> (set of 2)	supplied as standard	<b>BMXXTSCPS10</b> (cage clamp)			
	to be ordered separately	<b>BMXXTSCPS20</b> (spring-type)			
<b>References</b>	<b>BMXCPS2010</b>	<b>BMXCPS3020</b>	<b>BMXCPS2000</b>	<b>BMXCPS3500</b>	<b>BMXCPS3504</b> (1)

## Racks



Designation	Racks			
<b>Type of modules to be installed</b>	BMX CPS power supply, BMX P34 processor, I/O modules and application-specific modules (counter, communication)			
<b>No. of slots</b>	4	6	8	12
<b>References</b>	<b>BMXXBP0400</b>	<b>BMXXBP0600</b>	<b>BMXXBP0800</b>	<b>BMXXBP1200</b>

## Rack extensions

Designation	Rack extension module	Kit for rack extension
	Standard module to interconnect rack	A complete assembly kit for to racks distant from 0.8 m or less
<b>References</b>	<b>BMXXBE1000</b>	<b>BMXXBE2005</b>





Type of module			DC input modules							
<b>Number of inputs</b>			16	16	32	64	16	16		
<b>Connection</b>			Screw or spring-type 20-way removable terminal block		1 connector 40-way	2 connectors 40-way	Screw or spring-type 20-way removable terminal block			
<b>Nominal input values</b>			Voltage		24 V	48 V	24 V	125 VDC		
			Current		3.5 mA	2.5 mA	1 mA	3 mA		
			Logic		Positive ( <i>sink</i> )			Negative ( <i>source</i> )		
<b>Input limit values</b>			At state 1		Voltage	$\geq 11$ V	$\geq 34$ V	$\geq 11$ V	$\geq 15$ V	$\geq 14$ V
					Current	$> 2$ mA (for $U \geq 11$ V)	$> 2$ mA (for $U \geq 34$ V)	$> 2$ mA (for $U \geq 11$ V)	$> 1$ mA (for $U \geq 5$ V)	$> 2$ mA (for $U \geq 15$ V)
			At state 0		Voltage	$< 5$ V	$< 10$ V	$< 5$ V		
					Current	$\geq 1.5$ mA	$\geq 0.5$ mA	$\geq 1.5$ mA	$\geq 0.5$ mA	
<b>References</b>			<b>BMXDDI1602</b>	<b>BMXDDI1603</b>	<b>BMXDDI3202K</b>	<b>BMXDDI6402K</b>	<b>BMXDAl1602</b>	<b>BMXDDI1604 (1)</b>		

2



Type of module			AC input modules						
<b>Number of inputs</b>			16			8			
<b>Connection</b>			Screw or spring-type 20-way removable terminal block						
<b>Nominal input values</b>			Voltage		24 VAC	48 AC	100...120 VAC	200...240 VAC	
			Current		3 mA			10.4 mA	
			Frequency		50/60 Hz				
<b>Input limit values</b>			At state 1		Voltage	$\geq 15$ V	$\geq 34$ V	$\geq 74$ V	$\geq 159$ V
					Current	$\geq 2$ mA		$\geq 2.5$ mA	$\geq 6$ mA
			At state 0		Voltage	$\leq 5$ V	$\leq 10$ V	$\leq 20$ V	$\leq 40$ V
					Current	$\leq 1$ mA			$\leq 4$ mA
<b>References</b>			<b>BMXDAl1602</b>	<b>BMXDAl1603</b>	<b>BMXDAl1604</b>	<b>BMXDAl0805 (2)</b>			



Type of module			DC solid state output modules				
<b>Number of inputs</b>			16	16	32	64	
<b>Connection</b>			Screw or spring-type 20-way removable terminal block		One 40-way connector	Two 40-way connectors	
<b>Nominal output values</b>			Voltage		24 VDC		
			Current		0.5 V	0.1 V	
			Logic		Positive ( <i>source</i> )	Negative ( <i>sink</i> )	Positive ( <i>source</i> )
<b>Output limit values</b>			Voltage (ripple included)		19...30 (possible up to 34 V, limited to 1 hour in every 24 hours)		
			Current per channel		0.625 A		0.125 A
			Current per module				
<b>Maximum dissipated power</b>			4	2.26	3.6	6.85	
<b>References</b>			<b>BMXDDO1602</b>	<b>BMXDDO1612</b>	<b>BMXDDO3202K</b>	<b>BMXDDO6402K</b>	



Type of module		Triac output modules
Number of inputs		16
Connection		Screw or spring-type 20-way removable terminal block
Operating voltage	Nominal	100...240 VAC
	Limit	85...288 VAC
Currents	Maximum	0.6 per channel, 2.4 per common, 4.8 for all 4 commons.
	Minimum	25 mA at 100 V a, 25 mA at 240 V a.
Maximum inrush current		≤ 20/cycle
Reference		<b>BMXDAO1605</b>



Type of module		Relay output modules		
Number of inputs		8	16	8
Connection		Screw or spring-type 20-way removable terminal block		
Max. operating voltage	DC	10...34 VDC	24...125 VDC (resistive load)	
	AC	10...264 VAC	200...264 VAC (Cosφ = 1)	100...150 VDC
Response time	Activation	< 10 ms		
	Deactivation	< 8 ms	< 12 ms	
Dissipated power		2.7 W max	3 W	
References		<b>BMXDRA0805</b>	<b>BMXDRA1605</b>	<b>BMXDRA0804 (1)</b>



Type of module		24 VDC mixed I/O modules			
		Inputs	Solid state outputs	Inputs	Solid state outputs
Number of I/O		8	8	16	16
Connection		Screw or spring-type 20-way removable terminal block		One 40-way connector	
Input limit values	At state 1	Voltage	≥11V	≥11V	
		Current	≥3 mA (for U ≥11)	≥2 mA (for U ≥11)	
	At state 0	Voltage	5 V	5 V	
		Current	≤1.5 mA	≤1.5 mA	
Sensor power supply (ripple included)		19...30 V (possible up to 30 V, limited to 1 hour in every 24 hours)			
Output limit values	Voltage (ripple included)		19...30 (possible up to 30 V, limited to 1 hour in every 24 hours)		
	Current	per channel	0.625 A	0.125 A	
		per module	5 A	3.2 A	
Maximum dissipated power		3.7 W		4 W	
References		<b>BMXDDM16022</b>		<b>BMXDDM3202K</b>	

## Discrete I/O modules



Type of module		Mixed input/relay output modules	
		24 VDC inputs	24 VDC or 24...240 VAC relay outputs
<b>Number of I/O</b>		8	8
<b>Connection</b>		Screw or spring-type 20-way removable terminal block	
<b>Nominal values</b>	Inputs	Voltage	24 VDC (positive logic)
		Current	3.5 mA
	Outputs	DC voltage	24 VDC
		DC	2 (resistive load)
		AC voltage	220 VAC, Cosφ = 1
AC	2 A		
<b>Input limit values</b>	At state 1	Voltage	≥11V
		Current	≥2 mA (for U ≥ 11 V)
	At state 0	Voltage	5 V
		Current	≤1.5 mA
	Sensor power supply (ripple included)		19...30 V (possible up to 30 V, limited to 1 hour in every 24 hours)
<b>Maximum dissipated power</b>		3.1 W	
<b>Reference</b>		BMXDDM16025	

2



2

Type of module	Analog input module				
Input type	Isolated high-level inputs	Isolated high-level inputs	Non isolated high-level inputs	Isolated inputs, low-level voltage, resistors, temperature probes, thermocouples	
Number of channels	4	8	8	4	8
Nature of inputs	± 10 V, ± 5 V, 0...5 V, 0...10 V, 1...5 V 0...20 mA, 4...20 mA, ± 20 mA			±40 mV, ±80 mV, ±160 mV, ±320 mV, ±640 mV, ±1.28 V	
Resolution	0.35 mV/0.92 µA			15 mV + sign	
References	<b>BMXAMI0410</b>	<b>BMXAMI0810 (1)</b>	<b>BMXAMI0800 (1)</b>	<b>BMXART0414</b>	<b>BMXART0814</b>

Type of module	Analog output module		
Output type	Isolated high-level outputs		Non isolated high-level outputs
Number of channels	2	4	8
Range	Voltage	± 10 V	–
	Current	0...20 mA and 4...20 mA	–
Resolution	15 bits + sign		
References	<b>BMXAMO0210</b>	<b>BMXAMO0410 (1)</b>	<b>BMXAMO0802 (1)</b>

Type of module	Mixed analog I/O module	
Channel type	Non-isolated high-level inputs	Non-isolated high-level outputs
Number of channels	4	2
Ranges	±10 V, 0...5 V, 0...10 V, 1...5 V, 0...20 mA, 4...20 mA	
Maximum conversion value	Voltage	± 11.25 V
	Current	0...30
Resolution	14 bits, 12 bits, 13 bits, 12 bits	12 bits, 11 bits
Reference	<b>BMXAMM0600</b>	

## Counter and motion control modules

Type of module	Counter module			Motion Control Module
	32 bits	16 bits	32 bits	
Modularity	2 channels	8 channels	4 channels	4 channels
No. of sensor inputs	6 per channel	2 per channel	3 per channel	4 auxiliary inputs
No. of actuator outputs	2 per channel			2 auxiliary outputs
Module cycle time	1 ms	5 ms		–
Applications	Upcounting, downcounting, measurement, frequency meter, frequency generator, axis following	Upcounting, downcounting, measurement		Frequency generator, Move, set position
References	<b>BMXEHC0200</b>	<b>BMXEHC0800</b>		<b>BMXMSP0200</b>



Type of module	SSI encoder interface
Number of channels	3
Encoder support	8 to 31 bits, 24V
Auxiliary input	2
Reflex output	3
Baud rate	100K to 1MHz
Module cycle time	1 ms
Functions	Capture, compare and event, modulo, reduction, offset
Reference	<b>BMXEAE0300</b>

### Connection accessories



Removable terminal blocks	20-way			28-way	
	For use with modules	BMX AMI 0410 - BMX AM0 0210 - BMX AMM 0600 - BMX EHC 0800			BMX MSP 200, BMX AMI 0800 / AMI 0810
For use with TOR modules	All 8 and 16 channel modules				
Composition	Cage clamp	Screw clamp	Spring-type	–	–
Type of connection	–	–	–	Spring-type	Screw clamp
References	<b>BMXFTB2000</b>	<b>BMXFTB2010</b>	<b>BMXFTB2020</b>	<b>BMXFTB2820</b>	<b>BMXFTB2800</b>

Some racks, power supply, communication modules and specific modules, plus all the analog modules are now available in «ruggedized version». The references of these products end by a H.

# Modicon Premium Programmable Automation Controller Processors under Unity Pro software



Type of processor		TSX 5710 4 racks max.	TSX 5720 16 racks max.	TSX 5730 16 racks max.
Number of I/O in racks	Discrete	512	1024	1024
	Analog	24	80	128
Integrated process control		No / Yes	30 loops / Yes	45 loops / Yes
Application-specific channels (counter, position control, weighing)		8	24	32
Bus	AS-Interface cabling system	2	4	8
	CANopen machine bus	1	1	1
	INTERBUS, Profibus DP fieldbus	–	1	3
Networks (Ethernet, Modbus Plus, Fipway)		1	2	3
Memory capacity	Without PCMCIA extension	96 Kb data/prog.	160/192 Kb data/prog. (1)	192/208 Kb data/prog. (1)
	With PCMCIA extension	96 Kb data/224 Kb prog.	160/192 Kb data (1)/768 Kb prog.	192/208 Kb data (1)/1,75 MB prog.
Execution time for one instruction without ext. PCMCIA	Boolean	0.19 µs	0.19 µs	0.12 µs
	On word or arithmetic	0.25 µs	0.25 µs	0.17 µs
Reference	Without integrated port	<b>TSXP57104M</b> (6)	<b>TSXP57204M</b> (6)	<b>TSXP57304M</b> (6)
	Integrated Ethernet	<b>TSXP571634M</b> (2) (6)	<b>TSXP572634M</b> (6)	<b>TSXP573634M</b> (6)
	Integrated CANopen	–	–	–
	Integrated Fipio	<b>TSXP57154M</b> (6)	<b>TSXP57254M</b> (6)	<b>TSXP57354M</b> (6)

## Processors under PL7 software



Type of processor		TSX 5710 4 racks max.	TSX 5720 16 racks max.	TSX 5730 16 racks max.
Number of I/O in racks	Discrete	512	1024	1024
	Analog	24	80	128
Integrated process control		No	30 loops	45 loops
Application-specific channels (counter, position control, weighing)		8	24	32
Bus	AS-Interface cabling system	2	4	8
	CANopen machine bus	1 (with TSXP57103M)	1	1
	INTERBUS, Profibus DP fieldbus	–	1	2
Networks (Ethernet, Modbus Plus, Fipway)		1	1	3
Memory capacity	Without PCMCIA extension	32 K words data/prog.	48 K words data/prog. (4)	64/80 K words data/prog. (4)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data (4)/160 K words prog.	80/96 K words data (4)/384 K words prog.
Execution time for one instruction without ext. PCMCIA	Boolean	0.19 µs	0.19 µs	0.12 µs
	On word or arithmetic	0.25 µs	0.25 µs	0.17 µs
Reference	Without integrated port	<b>TSXP57103M</b> (6)	<b>TSXP57203M</b> (6)	<b>TSXP57303AM</b> (6)
	Integrated Ethernet	–	<b>TSXP572623M</b> (6)	<b>TSXP573623AM</b> (6)
	Integrated Fipio	<b>TSXP57153M</b> (6)	<b>TSXP57253M</b> (6)	<b>TSXP57353AM</b> (6)
	Integrated Ethernet and Fipio	–	<b>TSXP572823M</b> (6)	–

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

(2) Processor with double format

(3) PC format card on PCI bus

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

(5) with PL7 V4.4 min.

(6) For coated version add C at the end of the reference: example **TSXP571634M** becomes **TSXP571634MC**

HotStandBy offer



	<b>TSX 5740</b> 16 racks max.	<b>TSX 5750</b> 16 racks max.	<b>TSX 5760</b> 16 racks	<b>TSXH5724M</b> 16 racks	<b>TSXH5744M</b> 16 racks
	2048	2048	2048	512	512
	256	512	512	80	128
	60 loops / Yes	90 loops / Yes	90 loops / Yes	30 loops / Yes	60 loops / Yes
	64	64	64	16 (serial communication)	16 (serial communication)
	8	8	8	0	0
	1	1	1	0	0
	4	5	5	0	0
	4	4	4	2	4
	320 Kb data/prog.	1024 Kb data/prog.	2048 Kb data/prog.	192 Kb	440 Kb
	440 Kb data/2 MB prog.	1024 Kb data/7 MB prog.	2048 Kb data/7 MB prog.	192 Kb data/768 Kb prog.	440 Ko data/2 MB prog.
	0.06 µs	0.037 µs	0,037 µs	0,039 µs	0,039 µs
	0.07 µs	0.045 µs	0,045 µs	0,054 µs	0,054 µs
	-	-	-	<b>TSXH5724M (6)</b>	<b>TSXH5744M (6)</b>
	<b>TSXP574634M (6)</b>	<b>TSXP575634M (6)</b>	<b>TSXP576634M (6)</b>		
	-	-	-		
	<b>TSXP57454M (6)</b>	<b>TSXP57554M (6)</b>	-		

2

# Modicon Premium Programmable Automation Controller

## Memory extensions for Unity Pro processors



2

Type of PCMCIA card		Application		Additional data
<b>Technology</b>		SRAM	Flash EPROM only	SRAM
<b>Memory size</b>	96 Kb	–	<b>TSXMFPB096K</b> (3)	–
	128 Kb	<b>TSXMRPP128K</b>	<b>TSXMFP128K</b>	–
	224 Kb	<b>TSXMRPP224K / TSXMCP224K</b>	<b>TSXMFP224K</b>	–
	384 Kb	<b>TSXMRPP384K</b>	<b>TSXMFP384K</b>	–
	448 Kb	<b>TSXMRPC448K</b> (1)	–	–
	512 Kb	–	<b>TSXMCP512K</b> (2) / <b>TSXMFP512K</b>	–
	768 Kb	<b>TSXMRPC768K</b> (1)	–	–
	1 MB	<b>TSXMRPC001M</b> (1) (6)	<b>TSXMFP001M</b>	–
	1.7 MB	<b>TSXMRPC01M7</b>	–	–
	2 MB	<b>TSXMRPC002M</b> (1)	<b>TSXMCP002M</b> (2) / <b>TSXMFP002M</b>	–
	3 MB	<b>TSXMRPC003M</b> (1) (6)	–	–
	4 MB	–	<b>TSXMFP004M</b>	<b>TSXMRPF004M</b>
	7 MB	<b>TSXMRPC007M</b> (1) (6)	–	–
	8 MB	–	–	<b>TSXMRPF008M</b>

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

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

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

## Memory extensions for PL7 processors



Type of PCMCIA card		Application		Additional data
<b>Technology</b>		SRAM	Flash EPROM only	SRAM
<b>Memory size</b> (4)	32 K words	<b>TSXMRPP128K</b>	<b>TSXMFP128K</b>	–
	64 K words	<b>TSXMRPP224K</b>	<b>TSXMFP224K</b>	–
	64 K words/128 K words	<b>TSXMRPP384K</b>	<b>TSXMCP224K</b>	–
	96 K words	–	<b>TSXMFPB096K</b>	–
	128 K words	<b>TSXMRPC448K</b>	<b>TSXMFP384K</b>	–
	128 K words/128 K words	<b>TSXMRPC768K</b> (5)	–	–
	256 K words	<b>TSXMRPC001M</b> (6)	–	–
	256 K words/640 K words	<b>TSXMRPC01M7</b> (5)	–	–
	384 K words/640 K words	<b>TSXMRPC002M</b>	–	–
	512 K words	<b>TSXMRPC003M</b> (5) (6)	–	–
	992 K words/640 K words	<b>TSXMRPC007M</b> (6)	–	–
	2048 K words	–	–	<b>TSXMRPF004M</b>

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

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

(6) For coated version add C at the end of the reference: example **TSXMRPC001M** becomes **TSXMRPC001MC**



## Power supply modules <sup>(1)</sup>



Type of power supply module for	Premium					Atrium <sup>(2)</sup>
Input voltage	24 VDC		100...240 VAC	100...120/200...240 VAC		24 VDC
Output voltage	5 VDC/24 VDC					
Total useful power	26 W	50 W	26 W	50 W	77 W	26 W
Format	Standard	Double	Standard	Double	Double	–
Reference	TSXPSY1610M <sup>(4)</sup>	TSXPSY3610M <sup>(4)</sup>	TSXPSY2600M <sup>(4)</sup>	TSXPSY5500M <sup>(4)</sup>	TSXPSY8500M <sup>(4)</sup>	TSXPSI2010

(1) Process power supplies see chapter 6 "Power supply"

(2) Only for Atrium slot-PLCs under Unity

2

## Racks



Type of rack	Non extendable		Extendable
For configuration	Mono-rack		Multi-rack (16 max.)
	Dimensions WxDxP		
Reference	4 positions	188 x 160 x 151,5 mm <sup>(3)</sup>	–
	6 positions	261,6 x 160 x 151,5 mm <sup>(3)</sup>	TSXRKY6 <sup>(4)</sup>
	8 positions	335,3 x 160 x 151,5 mm <sup>(3)</sup>	TSXRKY8 <sup>(4)</sup>
	12 positions	482,6 x 160 x 151,5 mm <sup>(3)</sup>	TSXRKY12 <sup>(4)</sup>
			TSXRKY4EX <sup>(4)</sup>
			TSXRKY6EX <sup>(4)</sup>
			TSXRKY8EX <sup>(4)</sup>
			TSXRKY12EX <sup>(4)</sup>

(3) Height of I/O modules : 151,5 mm with HE 10 or SUB-D connectors, 165 mm with screw terminals

(4) For coated version add C at the end of the reference: example **TSXPSY1610M** becomes **TSXPSY1610MC**

## Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators and accessories
	–	Set of 2
Reference	–	TSXTLYEX
	–	TSXTVSY100 (2 Bus X Transient voltage suppressor) <sup>(5)</sup>
	L = 1 m	TSXCBY010K
	L = 3 m	TSXCBY030K
	L = 5 m	TSXCBY050K
	L = 12 m	TSXCBY120K
	L = 18 m	TSXCBY180K
	L = 28 m	TSXCBY280KT
	L = 38 m	TSXCBY380KT
	L = 50 m	TSXCBY500KT
	L = 72 m	TSXCBY720KT
	L = 100 m	TSXCBY1000KT

(5) Available 1Q 2010.

# Modicon Premium Programmable Automation Controller

## Discrete I/O modules



2

Type of module		Discrete inputs				
<b>Connection</b>		By screw terminals TSXBLY01 (1)		By HE 10 connector (2) high density		
<b>Number of isolated channels</b>		8	16	16 (3)	32	64
<b>Input voltage</b>	24 VDC	TSXDEY08D2 (5)	TSXDEY16D2 (5)	TSXDEY16FK (5)	TSXDEY32D2K (5)	TSXDEY64D2K (5)
	48 VDC	–	TSXDEY16D3 (5)	–	TSXDEY32D3K (5)	–
	24 VAC	–	TSXDEY16A2 (4) (5)	–	–	–
	48 VAC	–	TSXDEY16A3 (5)	–	–	–
	100...120 VAC	–	TSXDEY16A4 (5)	–	–	–
	200...240 VAC	–	TSXDEY16A5 (5)	–	–	–

(1) Terminal block to be ordered separately

(2) For use with Modicon ABE7 wiring system

(3) Module with high-speed isolated inputs (filtering from 0.1 to 7.5 ms) able to activate the event-triggered task

(4) Module also compatible with 24 VDC negative logic



Type of module		Discrete outputs							
		Solid state				Relay			Triac
<b>Connection</b>		By screw terminals TSXBLY01 (1)		By HE10 conn. (2)		By screw terminals TSXBLY01 (1)			
<b>Number of protected channels</b>		8	16	32	64	8	16	8	16
<b>Output voltage/current</b>	24 VDC/0.5 A	TSXDSY08T2 (5)	TSXDSY16T2 (5)	–	–	–	–	–	–
	24 VDC/2 A	TSXDSY08T2 (5)	–	–	–	–	–	–	–
	24 VDC/0.1 A	–	–	TSXDSY32T2K (5)	TSXDSY64T2K (5)	–	–	–	–
	48 VDC/1 A	TSXDSY08T31 (5)	–	–	–	–	–	–	–
	48 VDC/0.25 A	–	TSXDSY16T3 (5)	–	–	–	–	–	–
	24...48 VDC-24...240 VAC/5 A Th.c	–	–	–	–	TSXDSY08R5A (5)	–	–	–
	24...120 VAC/5 A Th.c	–	–	–	–	TSXDSY08R4D (5)	–	–	–
	24...120 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S4 (5)
	48...240 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S5
	48...240 VA /2 A	–	–	–	–	–	–	TSXDSY08S5	–
	24 VDC-24...240 VAC/3A	–	–	–	–	TSXDSY08R5 (5)	TSXDSY16R5 (5)	–	–

(1) Terminal block to be ordered separately

(2) For use with Modicon ABE7 wiring system



Type of module		Discrete I/O	
<b>Connection</b>		By HE 10 connector (2) high density	
<b>Number of inputs</b>		16 high-speed	
<b>Number of protected outputs</b>		12 solid state	12 reflex or timed
<b>Output voltage/current</b>	24 VDC/0.5 A	TSXDMY28FK (5)	TSXDMY28R5 (5)

(2) For use with Modicon ABE7 wiring system

(5) For coated version add C at the end of the reference: example TSXDEY08D2 becomes TSXDEY08D2C

**Connection accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)

## Analog I/O modules



Type of module		Analog input					
		High level with common point			High level isolated	Low level isolated	
<b>Connection</b>		By 25-way SUB-D connector					
<b>Number of channels</b>		4 high-speed	8	16	8	16	By terminal block (1)
<b>Resolution</b>		16 bits	12 bits		16 bits	16 bits	16 bits
<b>Isolation</b>	Between channels	Common point	Common point	Common point	± 200 VDC	± 100 VDC	± 2830 Vrms
	Between channels and earth	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1780 Vrms
<b>Reference</b>	High level input (2)	<b>TSXAEY420</b> (7)	<b>TSXAEY800</b> (7)	<b>TSYAEY1600</b> (7)	<b>TSXAEY810</b> (7)	–	–
	Multi-range	–	–	–	–	<b>TSXAEY1614</b> (3)(7)	<b>TSXAEY414</b> (4)(7)

(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
<b>Connection</b>		By screw terminals TSXBLY01 (5)	By 25-way SUB-D connector
<b>Number of channels</b>		4	8
<b>Resolution</b>		11 bits + sign	13 bits + sign
<b>Isolation</b>	Between channels	~ 1500 Vrms	Common point
	Between channels and earth	~ 1500 Vrms	~ 1000 Vrms
<b>Reference</b>	Input signal (6)	<b>TSXASY410</b> (7)	<b>TSXASY800</b> (7)

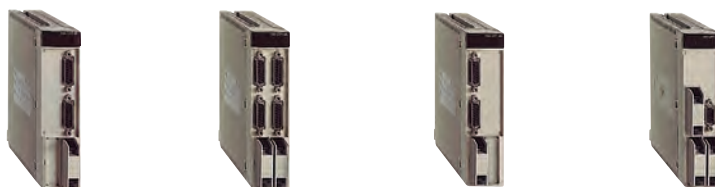
(5) Terminal block to be ordered separately

(6) ± 10 V, 0...10 V, 0...20 mA, 4...20 mA.

(7) For coated version add C at the end of the reference: example **TSXAEY420** becomes **TSXAEY420C**

# Modicon Premium Programmable Automation Controller

## Counter modules



Type of module	Counter		Counter/measurement	Electronic cam
Type of inputs for	Sensors (2) Incremental encoders (3)		Sensors (2) Encoders (3)(4)	Incremental encoders (3) Absolute encoders (5)
Counting	40 kHz		500 kHz/200 kHz (5)	
Cycle time module	5 ms	10 ms	1 ms	–
Number of channels	2	4	2	128 cams
Number of axes	–	–	–	1
Reference	TSXCTY2A (1)	TSXCTY4A (1)	TSXCTY2C (1)	TSXCXY1128 (1)

(1) For coated version add **C** at the end of the reference: example TSXCTY2A becomes TSXCTY2AC

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

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

(4) For SSI serial or parallel output absolute encoders

(5) For RS485 serial or parallel output absolute encoders

## Motion control modules



Module type	For translators (amplifier for stepper motor)		For analog control servomotors (for asynchronous and brushless motors)				
Control outputs	RS 422		+/- 10 V				
Compatible with drives	Lexium 05, Twin Line		Lexium 05 / 15 LP, MP and HP, Twin Line, Lexium 32				
Functions	Linear axes	–	Limited	Limited or infinite	Limited or infinite(6)		
	Slave axes	–	With static ratio	With dynamic ratio	–		
Frequency for each axis	187 kHz		500 kHz with incremental encoder, 200 kHz with absolute encoder (7)				
Number of axes	1	2	2	4	2	3	
Reference	TSXCFY11 (1)	TSXCFY21 (1)	TSXCAY21 (1)	TSXCAY41 (1)	TSXCAY22 (1)	TSXCAY42 (1)	TSXCAY33 (1)

(6) With linear interpolation on 2 or 3 axes

(7) SSI serial or with parallel outputs



Module type	Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs	SERCOS® network ring		
Compatible with ranges	Lexium 15 LP, MP, HP and Lexium 32 modular drive		
Functions	Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing	4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (8)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis	4 MB SERCOS® network ring		
Number of axes	8 (9)	8 (9)	16 (10)
Reference	TSXCSY84	TSXCSY85	TSXCSY164


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

(9) 8 real axes, 4 imaginary axes and 4 remote axes

(10) 16 axes (real axes, imaginary and remote axes)

## Weighing modules



Type of module	ISP Plus	
	supplied uncalibrated	supplied calibrated and  offer
Load cell inputs / outputs	50 measurements (for 1 to 8 load cells) / 2 discrete and 1 RS 485 for display unit	
Reference	Without display unit TSXISPY101 (1)	Please consult your Schneider-electric agency
	With display unit TSXXBTN410 TSXISPY121	Please consult your Schneider-electric agency

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

## Communication modules



Type of module		Ethernet network communication					
<b>Speed</b>		10 Mb/s	10/100 Mb/s				
<b>Standard services</b>		Ethway, Modbus TCP (Uni-TE, Modbus)	Modbus TCP (Uni-TE, Modbus)			EtherNet/IP & Modbus TCP	
<b>Transparent Ready</b>	Class	C10	B30	B30	C30	D10	B30
	Global Data	–	Yes	Yes	Yes	–	–
	I/O Scanning	–	Yes	Yes	Yes	–	Yes
	QoS (3)	–	–	–	–	–	Yes
	TCP Open	Yes	–	–	Yes	–	–
<b>Web server</b>	Standard services	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	–	–	Yes	–	–
	FactoryCast HMI services	–	–	–	–	Yes	–
<b>Reference</b>		<b>TSXETY110WS</b> (4)	<b>TSXP57</b> (1)	<b>TSXETY4103</b> (4)	<b>TSXETY5103</b> (4)	<b>TSXWMM100</b> (4)	<b>TSXETC101</b> (2)

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

(2) Seamless integration of Modbus and EtherNet/IP environments. Full integration in Unity (FDT/DTM technology). Available Unity V5

(3) QoS: Quality of Service

**Profibus DPV1** is available for Modicon Premium

Please refer to page 3/23



Type of module	AS-Interface cabling system	CANopen machine bus	Fipio manager fieldbus	INTERBUS fieldbus	Profibus DP V0 fieldbus
<b>Name and description</b>	In-rack	PCMCIA	Integrated port	In-rack	In-rack
<b>Speed</b>	167 Kb/s	20 K...1 Mb/s	1 Mb/s	0.5 Mb/s	9.6 K...12 Mb/s
<b>Reference</b>	<b>TSXSAY1000</b> (4)	<b>TSXCPP110</b> (4)	<b>TSXP57</b> (2)	<b>TSXIBY100</b> (4)	<b>TSXPBY100</b>

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



Type of module		Serial links					
		Uni-Telway			Modbus		ASCII
<b>Name and description</b>		Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
<b>Speed</b>		19.2 Kb/s	19.2 Kb/s	1.2...19.2 Kb/s	19.2 Kb/s	1.2...19.2 Kb/s	1.2...19.2 Kb/s
<b>Reference</b>	With interface	RS 485	<b>TSXP57</b> (1)	<b>TSXSCY21601</b> (3) (4)	<b>TSXSACP114</b> (4)	<b>TSXSCY11601</b> (4)	<b>TSXSACP114</b> (4)
		RS 232D	–	–	<b>TSXSACP111</b> (4)	–	<b>TSXSACP111</b> (4)
		20mA CL	–	–	<b>TSXSACP112</b> (4)	–	<b>TSXSACP112</b> (4)

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



Type of module	Other networks		
	Modbus Plus	Fipway	Fipio (agent function)
<b>Name and description</b>	PCMCIA card	PCMCIA card	PCMCIA card
<b>Speed</b>	1 Mb/s	1 Mb/s	1 Mb/s
<b>Reference</b>	<b>TSXMFBP100</b> (4)	<b>TSXFPP20</b> (4)	<b>TSXFPP10</b> (4)

(4) For coated version add C at the end of the reference: example TSXETY110WS becomes TSXETY110WSC

**Connection accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)

# Modicon Quantum Programmable Automation Controller Processors under Unity Pro software



2

Type of processor		Simple applications	Simple and medium complexity applications
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		Counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	2 RS 232/RS 485	2 RS 232
	Modbus Plus	1 integrated, 2 in local rack	1 integrated, 6 in local rack
	Ethernet TCP/IP	2 in local rack	6 in local rack
	Fieldbus	Profibus DP: 2 in local rack	Profibus DP: 6 in local rack
Memory capacity	Internal RAM	548 KB	1056 KB
	With PCMCIA extension	–	–
	Data storage	–	–
Reference		<b>140CPU31110</b> (4)	<b>140CPU43412U</b> (4)

(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)

(4) For coated version add C at the end of the reference: example **T140CPU31110** becomes **140CPU31110C**

(5) Suitable for safety related application up to SIL2 and SIL3



Complex applications			Hot Standby redundant applications		Long distance HSBY CPU	
Unlimited (26 slots max.)			Unlimited (13 slots max.)	Unlimited (26 slots max.)	Unlimited (13 slots max.)	2
31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)			31744 inputs and 31744 outputs	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	31744 inputs and 31744 outputs	
Unlimited (27 slots max.)			Unlimited (13 slots max.)	Unlimited (27 slots max.)	Unlimited (13 slots max.)	
1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)			1984 inputs and 1984 outputs	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	1984 inputs and 1984 outputs	
Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus			–	–	–	
1 RS 232/485			1 RS 232/485	1 RS 232/485	1 RS 232/485	
1 integrated, 6 in local rack			1 integrated	1 integrated, 6 in local rack	1 integrated	
1 integrated, 6 in local rack			1 integrated, 6 in local rack	6 in local rack	1 integrated, 6 in local rack	
Profibus DP: 6 in local rack			–	Profibus DP: 6 in local rack	–	
768 KB	1024 KB	3072 KB	1024 KB	1024 KB	1024 MB	
7 MB	7 MB	7 MB	7 MB	7 MB	7 MB	
8 MB	8 MB	8 MB	–	8 MB	–	
<b>140CPU65150 (4)</b>	<b>140CPU65160 (4)</b>	<b>140CPU65260 (4)</b>	<b>140CPU65160S (5)</b>	<b>140CPU67160 (4)</b>	<b>140CPU67160S (5)</b>	<b>140CPU67261</b>

# Modicon Quantum Programmable Automation Controller

## Power supply modules <sup>(1)</sup>

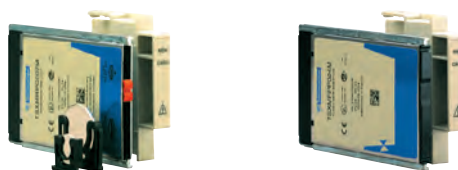


Type of power supply module for			Quantum				
<b>Input voltage</b>			24 VDC	48...60 VDC	100...150 VDC	120...130 VAC	115/230 VAC
<b>Output current</b>			8 A/3 A (5)	8 A	8 A/3 A	8 A/3 A	11 A
<b>Reference</b>	Type	Standalone (2)	<b>140CPS21100</b> (6)	–	<b>140CPS51100</b> (6)	<b>140CPS11100</b> (6)	–
		Summable	<b>140CPS21400</b> (6)	<b>140CPS41400</b> (6)	–	–	<b>140CPS11420</b> (6)
		Redundant	<b>140CPS22400</b> (6)	<b>140CPS42400</b> (6)	<b>140CPS52400</b> (6)	–	<b>140CPS12420</b> (6)

(1) Process power supplies see chapter 6 "Power supply"

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

## PCMCIA memory extensions



Type of PCMCIA card for Unity processors 140CPU65/67		Application		Additional data
<b>Technology</b>		SRAM	Flash EPROM	SRAM
<b>Memory size</b>	512 Kb/512 Kb (4)	–	<b>TSXMCPC512K</b> (3)	–
	1 MB (5)	<b>TSXMRPC001M</b> (6)	<b>TSXMFPP001M</b>	–
	2 MB (5)	<b>TSXMRPC002M</b>	<b>TSXMFPP002M</b>	–
	2 MB/1 MB (4)	–	<b>TSXMCPC002M</b>	–
	3 MB (5)	<b>TSXMRPC003M</b> (6)	–	–
	4 MB	–	<b>TSXMFPP004M</b>	<b>TSXMRPF004M</b>
	7 MB (5)	<b>TSXMRPC007M</b> (6)	–	–
	8 MB	–	–	<b>TSXMRPF008M</b>

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

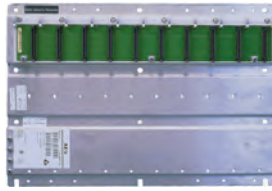
(4) The 1<sup>st</sup> value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc)

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

(6) For coated version add C at the end of the reference: example **TSXMRPC001M** becomes **TSXMRPC001MC**



## Racks



Type		Racks	
		Dimensions WxDxH	
References	2 slots	104x104x290 mm	140XBP00200 (2)
	3 slots	143x104x290 mm	140XBP00300 (2)
	4 slots	184x104x290 mm	140XBP00400 (2)
	6 slots	265x104x290 mm	140XBP00600 (2)
	10 slots	428x104x290 mm	140XBP01000 (2)
	16 slots	671x104x290 mm	140XBP01600 (2)
Rack extension module			140XBE10000 (1) (2)

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

(2) For coated version add C at the end of the reference: example **140XBP00200** becomes **140XBP00200C**

## Connection accessories <sup>(3)</sup>

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

(3) **Other accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)

# Modicon Quantum Programmable Automation Controller

## Discrete I/O modules



2

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

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

(2) Non-interfering module in safety related application



Type of module (5)		Discrete outputs					
		Solid state					
<b>Connection</b>		By screw terminals 140XTS00200 (to be ordered separately)					
<b>Number of protected channels</b>		16	4 groups of 8	4 groups of 4	2 groups of 8	6 groups of 16	2 groups of 6
<b>Output voltage/current</b>	5 VDC TTL/0.075 A (3)	–	<b>140DDO15310</b>	–	–	–	–
	24 VDC/0.5 A	–	<b>140DDO35301(1)</b> <b>140DDO35300(2)</b>	–	–	–	–
	10...30 VDC/0.5 A (4)	–	<b>140DVO85300</b>	–	–	–	–
	19.2...30 VDC/0.5 A	–	–	–	–	<b>140DDO36400</b>	–
	10...60 VDC/2 A	–	–	–	<b>140DDO84300</b>	–	–
	24...125 VDC/0.75 A	–	–	–	–	–	<b>140DDO88500</b>
	24...48 VAC/4 A	–	–	<b>140DAO84220</b>	–	–	–
	24...115 VAC/4 A	<b>140DAO84010</b>	–	–	–	–	–
	24...230 VAC/ 4-3 A	<b>140DAO84000</b>	<b>140DAO85300</b>	–	–	–	–
	100...230 VAC/4-3 A	–	–	<b>140DAO84210</b>	–	–	–

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

(2) Non-interfering module in safety related application

(3) Negative logic

(4) Controlled outputs



Type of module (5)		Discrete I/O			Discrete outputs	
		Solid state			Relay	
<b>Connection</b>		By screw terminals 140XTS00200 (to be ordered separately)				
<b>Number of I/O</b>		2 groups of 8/2 groups of 4		1 group of 4/ 4 isolated	–/16 NO	–/8 NO/NC
<b>Input voltage</b>		24 VDC	115 VAC	125 VDC	–	–
<b>Output voltage/current</b>		24 VDC / 4 A	115 VAC / 8 A	24...125 VDC / 16 A	2 A	5 A
<b>Reference</b>		<b>140DDM39000</b>	<b>140DAM59000</b>	<b>140DDM69000</b>	<b>140DRA84000</b>	<b>140DRC83000</b>

(5) For coated version add C at the end of the reference: example **140DDI15310** becomes **140DDI15310 C**

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

## Analog I/O modules



Type of module (4)	Analog inputs				
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	8	16	8		
Input signal	4...20 mA 1...5 V	0...25/20 mA 4...20 mA	(1)	Thermal probe Pt, Ni	Thermocouple (2)
Resolution	12 bits	0...25000 points	16 bits	12 bits + sign	16 bits
Reference	140ACI03000	140ACI04000 (3)	140AVI03000	140ARI03010	140ATI03000

(1) 0...25 mA,  $\pm 20$  mA, 4...20 mA, 0...10 V,  $\pm 10$  V, 0...5 V,  $\pm 5$  V, 1...5 V.

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

(3) Non-interfering module in safety related application



Type of module (4)	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, $\pm 10$ V 0...5 V, $\pm 5$ V
Resolution	12 bits	0...25000 points	12 bits
Reference	140ACO02000 (3)	140ACO13000	140AVO02000

(3) Non-interfering module in safety related application



Type of module (4)	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, $\pm 20$ mA, 4...20 mA, 0...10 V, $\pm 10$ V, 0...5 V, $\pm 5$ V, 1...5 V.
Resolution	Inputs 16 bits, outputs 12 bits
Reference	140AMM09000

(4) For coated version add C at the end of the reference: example 140ACI03000 becomes 140ACI03000C

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

# Modicon Quantum Programmable Automation Controller

## Counter and special purpose modules



Type of module	High-speed counter		High-speed inputs with interrupt	Time-stamp system
Type of inputs for	Incremental encoders		Discrete 24 VDC (2)	Discrete 24...125 VDC
Counting frequency	100 kHz	500 kHz	–	–
Number of channels	5	2	16	32
Reference	<b>140EHC10500</b>	<b>140EHC20200</b>	<b>140HLI34000</b>	<b>140ERT85410 (4)</b>

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

## Safety I/O modules



Type of modules	Analog	Discrete	
Connection	Screw terminal		
Number of inputs	8 analog inputs	16 discrete inputs	–
Number of outputs	–	–	16 discrete outputs
Input signal	4...20mA	24VDC	–
Output voltage	–	–	24VDC
Resolution	16 bits	–	–
Certification	Suitable for safety related application up to SIL2 and SIL3, UL, CE, CSA, Haz-loc		
Reference	<b>140SAI94000S</b>	<b>140SDI95300S</b>	<b>140SDO95300S</b>

## Communication modules



Type of module		Ethernet TCP/IP network				
<b>Speed</b>		10/100 Mb/s				
<b>Protocol</b>		<b>Modbus TCP</b>	<b>Modbus TCP</b>	<b>Modbus TCP</b>	<b>Modbus TCP</b>	<b>EtherNet/IP &amp; Modbus TCP</b>
<b>Transparent Ready</b>	Class	B30	B30	C30	D10	B30
	Global Data	Yes	Yes	Yes	–	–
	I/O Scanning	Yes	Yes	Yes	–	Yes
	FDR server	Yes	Yes	Yes	–	Yes
	SNMP protocol	Yes	Yes	Yes	Yes	Yes
<b>Web server</b>	QoS (1)	–	–	–	–	Yes
	Standard services	Yes	Yes	Yes	Yes	–
	FactoryCast services	–	–	Yes	Yes	–
FactoryCast HMI services		–	–	–	Yes	–
<b>Reference</b>		<b>140CPU651* (2)</b>	<b>140NOE77101</b>	<b>140NOE77111</b>	<b>140NWM10000</b>	<b>140NOC77101</b>

(1) QoS: Quality of Service

(2) 140 CPU 651 50, 140 CPU 651 60, 140 CPU 652 60, 140 CPU 671 60

**PROFIBUS DPV1** is available for Modicon Quantum

Please refer to page 3/23



Type of module	Modbus Plus network	AS-Interface cabling system	Fieldbus INTERBUS	Profibus DP Master V1 (1)	Modnet fielbus
<b>Name and description</b>	Integrated link	In-rack	In-rack	In-rack	In-rack
<b>Speed</b>	1 Mb/s	167 Kb/s	0,5 Mb/s	to 12 Mb/s	375 Kb/s
<b>Reference</b>	<b>140CPU*</b>	<b>140EIA92100</b>	<b>140NOA62200</b>	<b>PTQPDPMV1</b>	<b>140NOG11100</b>

(1) from your partner Prosoft, [www.prosoft-technology.com](http://www.prosoft-technology.com)

\* 140 CPU 311 10, 140 CPU 434 12U, 140 CPU 651 50, 140 CPU 651 60, 140 CPU 652 60, 140 CPU 671 60



Type of module	Serial link Modbus	ASCII
<b>Name and description</b>	Integrated link	In-rack
<b>Speed</b>	19.2 Kb/s	19.2 Kb/s
<b>Reference</b>	<b>140CPU* (1)</b>	<b>140ESI06210</b>

(1) RS 232/RS 485 on 140CPU651●● and 140CPU67160 processors and RS 232 on 140CPU31110, 140CPU43412A, 140CPU53414A processors.

\* 140 CPU 311 10, 140 CPU 434 12U, 140 CPU 651 50, 140 CPU 651 60, 140 CPU 652 60, 140 CPU 671 60

To operate in a corrosive environment, Quantum modules can be ordered with a conformal coating applied to components of the product. Conformal coating will extend its life and enhance its environmental performance capabilities. To order conformal coating append a C to the standard catalog number. For example, 140CPS 11420 > 140CPS 114 20C

# Automation systems Unity Pro, configuration software For Modicon M340, Premium, and Quantum



2

Software type		Unity Pro Small version 6.0			
License type version 6.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Facility (100 workstations)
References	Software pack	UNYSPUSFUCD60	UNYSPUSFGCD60	UNYSPUSFTCD60	–
	Upgrade Legacy Software (1)	UNYSPUSZUCD60	UNYSPUSZGCD60	UNYSPUSZTCD60	–
Software type		Unity Pro Medium version 6.0			
License type version 6.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Facility (100 workstations)
References	Software pack	UNYSPUMFUCD60	UNYSPUMFGCD60	UNYSPUMFTCD60	–
	Upgrade Legacy Software (2)	UNYSPUMZUCD60	UNYSPUMZGCD60	UNYSPUMZTCD60	–
Software type		Unity Pro Large version 6.0			
License type version 6.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Facility (100 workstations)
References	Software pack	UNYSPULFUCD60	UNYSPULFGCD60	UNYSPULFTCD60	UNYSPULFFCD60
	Upgrade Legacy Software (3)	UNYSPULZUCD60	UNYSPULZGCD60	UNYSPULZTCD60	UNYSPULZFC60
Software type		Unity Pro Extra Large version 6.0			
License type version 6.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Facility (100 workstations)
References	Software pack	UNYSPUEFUCD60	UNYSPUEFGCD60	UNYSPUEFTCD60	UNYSPUEFFCD60
	Upgrade Legacy Software (4)	UNYSPUEZUCD60	UNYSPUEZGCD60	UNYSPUEZTCD60	UNYSPUEZFC60

(1) From Concept S, PL7 Micro, ProWORX NxT Lite and ProWORX 32 Lite

(2) From Concept S/M, PL7 M/J, ProWORX NxT Lite and ProWORX 32 Lite

(3) From Concept S /M, PL7 M/J/P, ProWORX NxT Lite and ProWORX 32 Lite

(4) From all models Concept, PL7, ProWORX NxT and ProWORX 32

Unity Pro, is common programming software for debugging and operation of Modicon M340, Premium, and Quantum programmable controller ranges. Unity Pro takes the recognized usage values of PL7 and Concept software and offers a complete set of new functions for improved productivity and opening to other software.

Five IEC61131-3 languages are supported as standard in Unity Pro with all debugging functions, either on the simulator or directly online with the programmable controller.

Additional LL984 language is now available in Unity V 6.0 (Unity V6.0 available 2Q 2011) to allow easy migration of Modsoft an Concept applications to Quantum platforms.

Thanks to symbolic variables independent of memory, structured data and user function blocks, application objects are a direct reflection of the automated process application components. Unity Pro operator screens are user-configured in the application from graphic libraries. Operator accesses are simple and direct. The converters integrated in Unity Pro automatically convert PL7 and Concept IEC 61131-3 standards and applications.

Unity V 6.0 fully support new Quantum Ethernet RIO architectures.

It integrates additional possibilities for Online changes in RUN mode, as well as improved Search/Replace Toll.

Debugging and Maintenance, as well as Design are greatly simplified and improved.

# Unity software

## Specialized software

2

### Unity Pro application comparison software

Software type		Unity Dif
Licence type version 2.21		Single (1 workstation), French and English languages (software and documentation)
Reference	Software extension (1)	UNYSDUZFUCD22
Licence type version 2.21		Site licence (100 workstations), French and English languages (software and documentation)
Reference	Software extension (1)	UNYSDUZFFCD22

(1) Requires version Unity V2.1 or later

### EF/EFB function development software in C language

Software type		Unity EFB Toolkit
Licence type version 3.1		Single (1 workstation), English language (software and documentation)
References	Software pack	UNYSPUZFUCD31E
	Renewal	UNYCSPSPUZBU

### Process application design and generation software

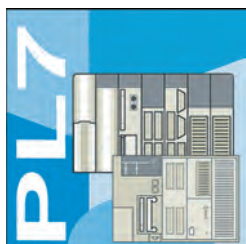
Software type		Unity UAG (Unity Application Generator)	
Licence type version 3.2		Single (1 workstation)	Site (> 10 workstations)
References	Software pack	UAGSEWLFUCD32	UAGSEWLFCD23

### Specific libraries according to the software used

Library type	Control Libraries				
Designation	Predictive Control Library (for Unity Pro and Concept)	Fuzzy Control Library (for Unity Pro)	TeSys Library (for Unity Pro)	HVAC Library (for Unity Pro)	Flow Calculation Library (for Unity Pro)
Licence type	Single Licence (1 work station)				
Reference	UNYLPZAUWD10	UNYLFZZAUWB12	UNYLTZAUWB10	UNYLHVZAUWB10	UNYLAGZAUWB20

Library type	UAG Libraries	
Designation	Device and Process Library (for UAG)	Process Application Library (for UAG)
Licence type	Single Licence (1 workstation)	
Reference	UAGSBTFUWB13	UAGSBTFUWB20

\*Includes Process Application Library (PAL) V2.0 and Device and Process Library (DPL) V1.0



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 3/12, 3/18 and 3/26).

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 4.5	Reference	Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
	Software package	TLXCDPL7MP45	TLXCDPL7MPC45	TLXCD3PL7MP45	TLXOTPL7MP45M
Update (1)	Reference	TLXRCDPL7MP45M	TLXRCDPL7MPC45M	TLXRCD3PL7MP45M	–
	Software package				
Type of license version 4.5		PL7 Junior for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.5	Reference	Single (1 station)	Group (3 stations)		
	Software package	TLXCDPL7JP45	TLXCD3PL7JP45		
Update (1)	Reference	TLXRCDPL7JP45M	TLXRC3DPL7JP45M		
	Software package				
Upgrade (2)	Reference	TLXUCDPL7JP45M	TLXUCD3PL7JP45M		
	Software package				
Type of license version 4.5		PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.5	Reference	Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
	Software package	TLXCDPL7PP45	TLXCD3PL7PP45	TLXOTPL7PP45M	TLXOSPL7PP45M
Update (1)	Reference	TLXRCDPL7PP45M	TLXRCD3PL7PP45M	–	–
	Software package				
Upgrade (2)	Reference	TLXUCDPL7PP45M	TLXUCD3PL7PP45M	–	–
	Software package				

(1) From the previous software version.

(2) From lower level, earlier version software.

## Specialist tools

EF function development software in C language

Type of software		PL7 SDKC for EF function development software in C language
PL7 SDKC software extension		For PL7 Micro/Junior/Pro
Reference		TLXLSDKCPL741M

Development of applications in C language

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

Comparison of PL7 applications

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

Availability of control systems based on Premium platforms

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



# Programming software

## For Modicon Quantum, Momentum



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

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

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

Type of software		Concept for Quantum/Momentum platforms			
<b>Type of license version 2.6</b>		Single (1 station)	Group (3 stations)	10 users (10 stations)	Site
<b>Software references</b>	Concept S	372SPU47101V26	–	–	–
	Concept M	372SPU47201V26	–	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26	372SPU47431V26
<b>Update references</b>	Concept S (3)	372ESS47101	–	–	–
	Concept M (3)	372ESS47201	–	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ESS47410	372ESS47400

(3) From an earlier software version.

## Specialist tools

EF/EFB function development software in C language

Type of software		Concept EFB Toolkit	
<b>Type of license</b>		Version 2.6	Upgrade version 2.6
<b>Reference</b>	Software package	332SPU47001V26	372ESS47001

Concept service version limited to application loading

Type of software		Concept Application Loader	
<b>Type of license</b>		Version 2.6	
<b>Reference</b>	Software package	372SPU47701V26	

Software for designing and generating batch/process applications

Type of software		Unity UAG (Unity Application Generator)	
<b>Type of license version 3.0</b>		Single (1 station)	Site
<b>Reference</b>	Medium Software package	UAGSEWMFUCD31	UAGSEWMFFCD31
	Large Software package	UAGSEWLFUCD31	UAGSEWLFCD31



## ProWORX for Modicon Quantum, Momentum

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

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

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

Type of software		ProWORX for Quantum/Momentum platforms			
<b>Type of license version 2.1</b>		Single (1 station)	Group (3 stations)	Multi-user (10 stations)	Site
<b>Software references</b>	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	–
<b>Upgrade to ProWORX 32 references (4)</b>		372SPU78401LPUP	372SPU78401LPSTH	372SPU78401LPSTE	–

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



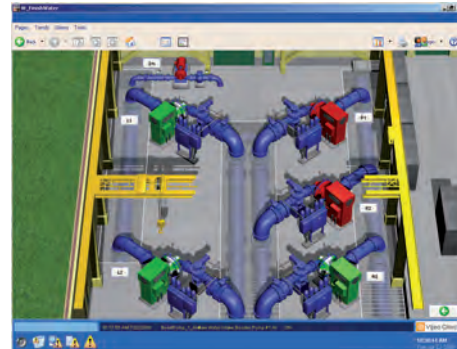
## Vijeo Citect

<b>Type</b>	<b>Supervisory control and data acquisition (SCADA) software</b>
<b>Compatibility</b>	All Schneider Electric automation platforms and third party devices
<b>Operating system</b>	Windows XP® SP3 (32 bit), Windows® 2003 Server SP2 (32 bit), Windows Vista® SP2 (32 and 64 bit), Windows® Server 2008 SP2 (32 and 64 bit), Windows® 7 (32 and 64 bit), Windows® Server 2008 R2
<b>Versions</b>	The development licence (without network connectivity) allows free communication with PLCs for 10 minutes at a time. Vijeo Citect full server licences are available in 75 points, 150 points, 500 points, 1500 points, 5000 points, 15000 points and unlimited points Vijeo Citect Lite (without network connectivity) is available in 100 - 1200 points
<b>References</b>	<b>Please contact your local sales representative</b>



Vijeo Suite; The best HMI/SCADA offer. Designed to offer optimum integration with Schneider Electric equipment.

Vijeo Citect is a software for operating and monitoring. With its powerful visualisation capabilities and operational features, it delivers actionable insight faster, enabling operators to respond quickly to process disturbances, thereby increasing their effectiveness. Its easy-to-use configuration tools and powerful features enable you to quickly develop and deploy solutions for any size application.



### Benefits at a glance:

- **Full-redundancy for reliable architecture:** Vijeo Citect's in-built redundancy greatly reduces lost data and downtime, tolerating failure anywhere in your system.
- **Powerful graphics:** Vijeo Citect lets you develop true colour, easy-to-use graphics that provide the operator with an intuitive, consistent user interface.
- **Intuitive Process Analysis tool:** Vijeo Citect Process Analyst is an intuitive process analysis tool that sits directly in the SCADA system, providing a complete story of your plant and delivering actionable insight to the operators faster, thereby improving their efficiency and productivity.
- **Object-based configuration for rapid development:** Developing your control system is made quick and easy by Vijeo Citect's object-based configuration tools such as page templates, Genies, Super Genies, and SpeedLink.
- **Engineering with ease:** Vijeo Citect offers flexible and targeted system engineering tools to help you be more efficient. It accelerates your control system configuration process, significantly reducing your engineering time and costs and minimising your project risk.

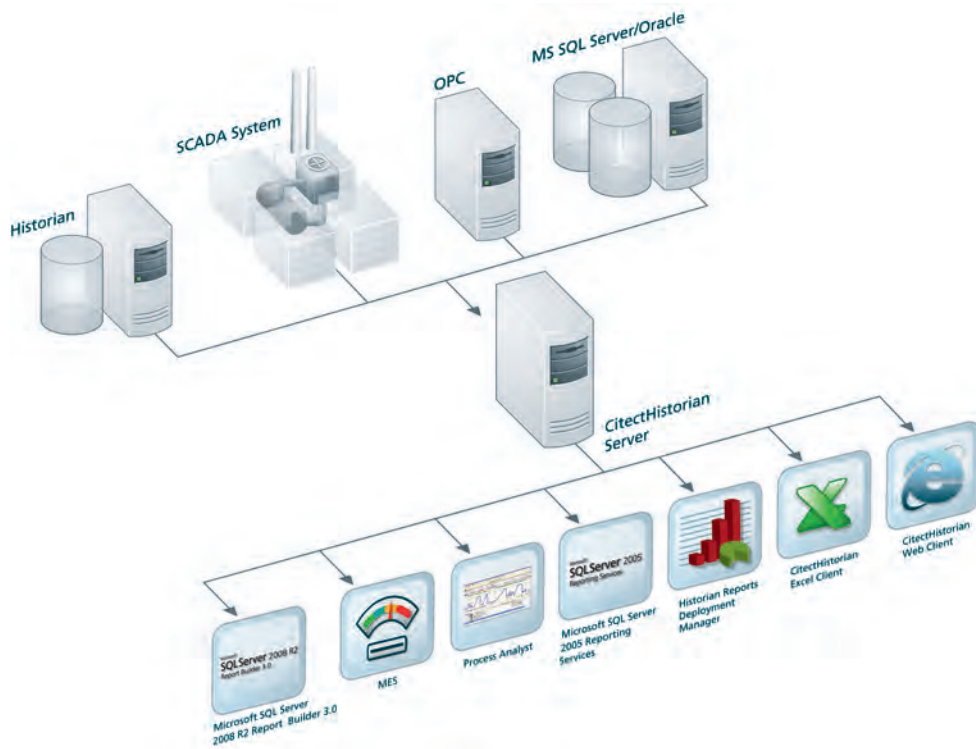
# Vijeo Historian Reporting software



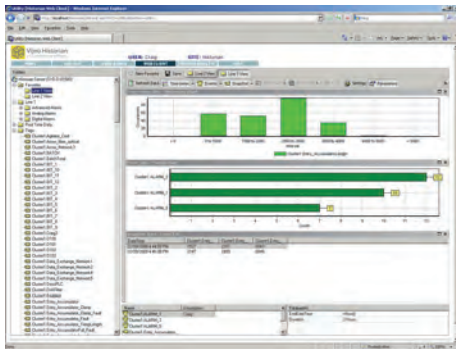
## Vijeo Historian

Type	Historian software
Compatibility	All Schneider Electric automation platforms and third party devices
Operating system	Windows XP® SP3 (32 bit), Windows® 2003 Server SP2 (32 bit), Windows Vista® SP2 (32 and 64 bit), Windows® Server 2008 SP2 (32 and 64 bit), Windows® 7 (32 and 64 bit), Windows® Server 2008 R2
References CD-ROM PC	Please contact your local sales representative

2



Vijeo Historian is a software for the information management. It comprises the historian and portal functionalities of the solution, enabling you to accurately store data for long-term reporting while connecting your production and business systems through its active data transfers and simple, easy-to-use reporting.



### Benefits at a glance:

- **Business systems integration:** Vijeo Historian reduces the complexity and cost of bridging the divide between senior management and plant operations through its simple, easy-to-use interface and its active data transfers that push data from the control systems up to the business systems.
- **An open data store:** Vijeo Historian utilises 100% Microsoft SQL Server 2008 R2 as its embedded historical data store. Its open, industry-standard technology and trusted security integrate effortlessly into your business in a way that lowers your total cost of ownership.
- **Enterprise-wide reporting:** A range of reports can be produced using a convenient built-in historian in the familiar, open Microsoft user interface. Vijeo Historian also comes with a standard set of pre-configured reports, simplifying basic alarm and tag reporting.
- **Alarm management:** Pre-configured alarm reports based on the EEMUA (Engineering Equipment & Materials Users Association) 191 alarm management guidelines.
- **Going 'green' with the energy reports:** Energy reports help you perform a comprehensive energy assessment of your plant to determine how much energy is being consumed and how much could potentially be saved.

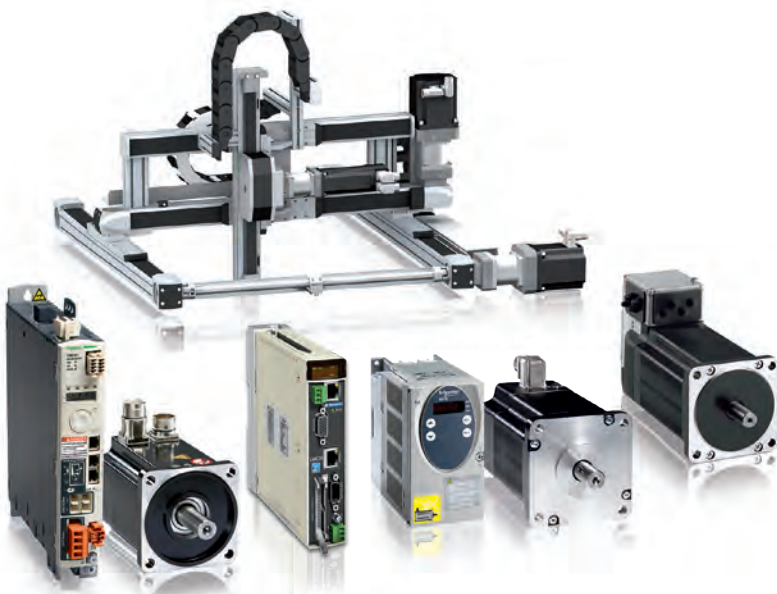
# Altistart and Altivar

Use Altistart soft starters to start your motors smoothly and so protect the mechanics of your equipment. With the Altivar range of variable speed drives, you save energy and manage the speed of your motors to optimise and enhance productivity in your installations.



# 3

The Altistart, Altivar and Lexium ranges increase the efficiency of your machines, reduce their energy consumption and optimise their kinematics. Easy to install, offering intuitive programming and extensive communication options, they are easily integrated into your control system architectures.



## Lexium

Controllers, drives, motors and linear positioning axes: Schneider Electric offers a complete range of motion control products and solutions suitable for even the most specialised applications. Designed with maximum simplicity in mind throughout a machine's entire service life, the Lexium range reduces costs and optimises productivity.

# 3 | Motion and Drives



## Soft starters and variable speed drives

**Selection guide** ..... 3/3 and 3/7

### Starters

Altistart 01 ..... 3/8 and 3/9  
Altistart 22 ..... 3/10 and 3/11  
Altistart 48 ..... 3/12 and 3/13

### Drives

Altivar 12 ..... 3/14  
Altivar 212 ..... 3/15  
Altivar 312 ..... 3/16  
Altivar 31C ..... 3/17  
Altivar 32 ..... 3/18  
Altivar 61, 61Q, 61 Plus ..... 3/19 to 3/25  
Specific cards and extension for pumping and ventilation machines ..... 3/26 and 3/27  
Altivar 71, 71Q, 71 Plus ..... 3/28 to 3/34  
Altivar LIFT ..... 3/35  
Specific cards and extension for complex and high power machines ..... 3/36 and 3/37

**Accessories and options (Altistart et Altivar)** ..... 3/38 and 3/39

## Controllers, drives, motors and linear motion axes

**Selection Guide** ..... 3/40 to 3/42

**Motion Controller Lexium LMC** ..... 3/43

**Servo drives, servo motors Lexium 32 and accessories** ..... 3/44 to 3/51

Lexium 32 servo drives  
Lexium BMH and Lexium BSH servo motors

**Stepper Drives and Stepper Motors Lexium SD** ..... 3/52

Lexium SD2/Lexium SD3 stepper drives  
Lexium BRS2/Lexium BRS3 stepper motors

**Integrated Drives Lexium IL** ..... 3/53 to 3/55

Lexium ILA/ILE/ILS/ILT/ILP

**Single axes and multi-axis Systems Linear Motion** ..... 3/56 and 3/57

Lexium PAS/CAS/TAS/MAX

# Highlights

## Altivar 32

### More than 150 application-specific functions

The Altivar 32 range of variable speed drives controls asynchronous and synchronous motors rated from 0.18 to 15 kW operating in open loop mode in complex machines:

- Compact, vertical and slim format (45 mm)
- Integrated function blocks for creating simple control system functions (timers, counters, comparators, etc.)
- Machine safety functions integrated as standard (STO, SLS, SS1)
- Open design: communicates with most industrial networks

For more information, see page 3/18



## Lexium 32 Inspired by Simplicity

The Lexium 32 servo drive range (0.15 to 7 kW) is a drive system designed for applications where high precision and dynamic positioning are critical:

- Suitable for packaging, materials processing (cutting, turning, milling, etc.) and handling, printing and textile applications
- 3 servo drive families and two types of servo motor available
- Simplified engineering: motor sizing, CAD and cabinet drawings, support for PLCopen libraries and SoMove setup software
- Integrated "Safe Torque Off" function
- Quick integration: wide selection of fieldbus modules

For more information, see page 3/44



## Ultra slim and ultra powerful

Practical and innovative, the Altivar 32 and Lexium 32 ranges can help reduce the size of your enclosures by as much as 40%.

- Extra slim book format
- Easy to configure and setup with SoMove software
- Packed with common software tools, accessories and functions
- Homogeneous mounting and wiring systems
- High-performance communication system
- Built-in Bluetooth as standard
- Can be configured with the power off in its original packaging: configurations can be transferred remotely via mobile phone using SoMove Mobile software



# Selection guide

## Starters - Low voltage

		Simple machines		Complex machines/ Special machines
		⇒Applications: Compressors, fans, pumps, conveyors, car wash gantries, etc.	⇒Applications: Pumps, fans, turbines, compressors, conveyors, conveyor belts, lifting screws, escalators, etc.	⇒Applications: Pumps, high inertia fans and machines, compressors, conveyors, agitators, mixers, escalators, etc.
		<b>Altistart 01</b>	<b>Altistart 22</b>	<b>Altistart 48</b>
				
		Soft start and Soft start/soft stop units	Soft start/soft stop units	Soft start/soft stop units
<b>Description</b>		<ul style="list-style-type: none"> <li>• <b>Compact</b></li> <li>• <b>Simple:</b> easy mounting, wiring and adjustment</li> <li>• <b>Efficient:</b> Current peaks limitation on starting, reduction of mechanical shocks, increased service life for your machines</li> <li>• <b>Energy saving</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Innovative</b> with its integrated <b>Bypass</b> contactor for motors up to 315 kW</li> <li>• <b>Cost-effective</b></li> <li>• <b>Compact dimensions</b></li> <li>• <b>Quick setup</b></li> <li>• <b>Protection of motor and starter</b></li> <li>• <b>Energy saving</b></li> <li>• <b>3 controlled phases</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Torque control system:</b> controlled torque, prevention of pressure surges and limiting of temperature rises</li> <li>• <b>Simple:</b> quick setup</li> <li>• <b>Protection of motor and starter:</b> thermal protection, phase loss detection, locked rotor detection</li> <li>• <b>Energy saving</b></li> </ul>
<b>Technical information</b>	Power range for 50...60 Hz supply	0.37...15 kW 0.5...20 HP	4...400 kW 3...500 HP	4...1200 kW 2...200 HP
	Voltage	Single-phase 110...480 V Three-phase 110...480 V	Three-phase 208...600 V Three-phase 230...440 V	Three-phase 208...690 V
	Drive/Output frequency	–	–	–
	Motor type	Asynchronous Synchronous	Yes No	Yes No
<b>Communication</b>	Integrated	–	Modbus	Modbus
	As an option	Can be used with TeSys U motor starter-controller to create a complete motor starter solution	–	DeviceNet, Fipio, PROFIBUS DP, Ethernet
<b>Standards and certifications</b>		IEC/EN 60947-4-2, C-Tick, CSA, UL, CE	IEC/EN 60947-4-2, C-Tick, CSA, UL, CE, GOST, CCC, Class A EMC	IEC/EN 60947-4-2, C-Tick, CSA, UL, CE, DNV, GOST, CCC, NOM, SEPRO and TCF, Classes A and B EMC
<b>Intended use</b>		Buildings, Simple machines.	Machines, Infrastructures and Buildings	

# Selection guide

## Standard drives - Low voltage

### Simple machines

#### ⇒ Applications:

- Simple machines for industry (small handling applications, packaging, pumps, fans, etc.)
- Simple consumer machines (access barriers, rotating advertising hoardings, medical beds, treadmills, dough mixers, etc.)
- Other types of application:
  - Mobile machines and small appliances equipped with a power socket
  - Applications which traditionally use other solutions (2-speed DC motors, mechanical drives, etc.).

#### ⇒ Applications:

Simple industrial machines (material handling and packaging, textile machines, special machines, pumps and fans).

#### ⇒ Applications:

Simple industrial machines (material handling and packaging, textile machines, special machines, pumps and fans).

#### Altivar 12



Variable speed drives for small machines with 240 V three-phase asynchronous motor

#### Altivar 312



Variable speed drives for three-phase asynchronous motors






#### Altivar 31C IP55



Variable speed drives for three-phase asynchronous motors for machines in harsh environments.

<b>Description</b>		<ul style="list-style-type: none"> <li>• <b>Compact</b></li> <li>• <b>Easy to set up</b> (Plug &amp; Play)</li> <li>• <b>Reliable, cost-effective solution</b> for compact machines</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Open:</b> large number of communication cards available as options</li> <li>• <b>User-friendly:</b> simplified interface</li> <li>• <b>Autotuning:</b> maximum performance</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Rugged</b> even in the most hostile environments:                     <ul style="list-style-type: none"> <li>- Installed as close as possible to the motor</li> <li>- Integrated functions for applications requiring IP55 degree of protection</li> <li>- Modbus and CANopen communication protocols</li> </ul> </li> <li>• <b>Flexibility</b> to adapt to each machine:                     <ul style="list-style-type: none"> <li>- Customisable depending on the model</li> <li>- Easy configuration</li> </ul> </li> </ul>
<b>Technical information</b>	Power range for 50...60 Hz supply	0.18...4 kW 0.25...5 HP	0.18...15 kW 0.5...20 HP	0.18...15 kW 0.5...20 HP
	Voltage	Single-phase 100...240 V Three-phase 200...240 V	Single-phase 200...240 V Three-phase 200...600 V	Single-phase 200...240 V Three-phase 380...500 V
	Drive/Output frequency	0.5...400 Hz	0.5...500 Hz	0.5...500 Hz
	Motor type	Asynchronous Synchronous	Yes No	Yes No
<b>Communication</b>	Integrated	Modbus	Modbus and CANopen	Modbus and CANopen
	As an option	–	CANopen Daisy chain, DeviceNet, PROFIBUS DP, Modbus TCP, Fipio	DeviceNet, Ethernet TCP/IP, Fipio, PROFIBUS DP
<b>Standards and certifications</b>		IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, categories C1 to C3) CE, UL, CSA, C-Tick, GOST, NOM		IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, categories C1 to C3) CE, UL, CSA, C-Tick, GOST
<b>Intended use</b>		Machines		



Complex machines	Complex machines/ Special machines		Pumps and Fans	
<p>⇒ <b>Applications:</b> Industrial machines: hoisting, packaging, material handling, special machines (wood-working machines, metal processing machinery, etc.).</p>	<p>⇒ <b>Applications:</b> High performance applications:</p> <ul style="list-style-type: none"> <li>• Material handling</li> <li>• Hoisting</li> <li>• Wood-working machines</li> <li>• Process machinery</li> <li>• Textile machines</li> <li>• Packaging</li> </ul>	<p>⇒ <b>Applications:</b> High performance applications:</p> <ul style="list-style-type: none"> <li>• Material handling</li> <li>• Hoisting</li> <li>• Wood-working machines</li> <li>• Process machinery</li> <li>• Textile machines</li> <li>• Packaging</li> </ul>	<p>⇒ <b>Applications:</b> Range specifically for high performance pumps and fans for the industrial and building markets.</p>	<p>⇒ <b>Applications:</b> Pumping and ventilation machines in harsh environment</p>
<p><b>Altivar 32</b></p>  <p>Variable speed drives for asynchronous motors and open-loop synchronous motors</p>	<p><b>Altivar 71</b></p>  <p>For three-phase synchronous and asynchronous motors. Constant torque applications.</p>	<p><b>Altivar 71Q</b></p>  <p>Water-cooled variable speed drives for three-phase synchronous and asynchronous motors. Constant torque applications.</p>	<p><b>Altivar 61</b></p>  <p>Variable speed drives for three-phase asynchronous motors. Variable torque applications.</p>	<p><b>Altivar 61Q</b></p>  <p>Water-cooled variable speed drives for three-phase asynchronous and synchronous motors. Variable torque applications</p>
<ul style="list-style-type: none"> <li>• <b>Compact: "Book" format</b></li> <li>• <b>Integrated Safety function</b> compliant to IEC 61508 SIL3 and PL-e</li> <li>• <b>Open:</b> communication cards available as options</li> <li>• <b>Integrated programmable logic functions</b></li> <li>• <b>Simple setup</b></li> <li>• <b>Energy saving : Control of energy efficient permanent magnet synchronous motors</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Wide range</b></li> <li>• <b>Quick start-up</b> and easy diagnostics: multi-language graphic display terminal</li> <li>• <b>Open</b> to most industrial communication buses</li> <li>• <b>Integrated safety functions</b></li> <li>• <b>Motor control:</b> high-performance in open-loop and closed loop mode</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Improved robustness</b> with water cooling</li> <li>• <b>Efficient cooling system reduced need of air conditioning</b></li> <li>• Long time operation <b>without maintenance</b></li> <li>• Excellent protection against corrosion due to <b>stainless steel cooling pipes</b></li> <li>• <b>Very high starting torque</b> for frequent start-up applications</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Wide range</b></li> <li>• <b>Easy setup and diagnostics</b> with the multi-language graphic display terminal</li> <li>• <b>Open</b> to the main communication buses</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Improved robustness</b> with water cooling</li> <li>• <b>Efficient cooling system reduced need of air conditioning</b></li> <li>• Prolonged <b>maintenance-free</b> operational life</li> <li>• Excellent protection against corrosion due to <b>stainless steel cooling pipes</b></li> </ul>
<p>0.18...15 kW 0.25...20 HP</p>	<p>0.37...630 kW 0.5...700 HP</p>	<p>90...630 kW 125...700 HP</p>	<p>0.37...800 kW 0.5...900 HP</p>	<p>110...800 kW 150...900 HP</p>
<p>Single-phase 200...240 V Three-phase 380...480 V</p>	<p>Single-phase 200...240 V Three-phase 200...690 V</p>	<p>Three-phase 380...480 V Three-phase 500...690 V</p>	<p>Single-phase 200...240 V Three-phase 200...690 V</p>	<p>Three-phase 380...480 V Three-phase 500...690 V</p>
<p>0.1...599 Hz</p>	<p>0...599 Hz up to 37 kW / 200...240V and 380...480V 0...500 Hz for the rest of the range</p>	<p>0...500 Hz</p>	<p>0.1...599 Hz up to 37 kW / 200...240V and 380...480V 0.1...500 Hz for the rest of the range</p>	<p>0.1...500 Hz</p>
<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>
<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>
<p>Modbus and CANopen</p>	<p>Modbus and CANopen</p>	<p>Modbus et CANopen</p>	<p>Modbus and CANopen</p>	<p>Modbus et CANopen</p>
<p>EtherNet/IP, Modbus TCP, PROFIBUS DP V1, EtherCAT, Devicenet</p>	<p>Modbus TCP, Fipio, Modbus/Uni-Telway, Modbus Plus, EtherNet/IP, DeviceNet, PROFIBUS DP, PROFIBUS DP V1, INTERBUS S, CC-Link,</p>	<p>Modbus TCP, Fipio, Modbus/Uni-Telway, Modbus Plus, EtherNet/IP, DeviceNet, PROFIBUS DP, PROFIBUS DP V1, INTERBUS S, CC-Link,</p>	<p>Modbus TCP, Fipio, Modbus/Uni-Telway, Modbus Plus, EtherNet/IP, DeviceNet, PROFIBUS DP, PROFIBUS DP V1, INTERBUS S, CC-Link, Lonworks, METASYS N2, APOGEE FLN P1, BACnet</p>	<p><b>HVAC protocols :</b> LonWorks, BACnet, METASYS N2, APOGEE FLN P1 <b>Industrial protocols:</b> Modbus TCP, Modbus/Uni-Telway, Fipio, Modbus Plus, PROFIBUS DP, PROFIBUS DP V1, DeviceNet, Ethernet IP, CC-Link, INTERBUS</p>
<p>IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, Categories C2 and C3), UL508C, EN 954-1 Category 3, ISO/EN 13849-1/-2 Category 3 (PLd), IEC 61800-5-2, IEC 61508 (parts 1&amp;2) level SIL1 SIL2 SIL3, draft standard EN 50495E, CE, UL, CSA, C-Tick, GOST, NOM.</p>	<p>IEC/EN 61800-3, EN 55011, EN 55022, CSA, UL, C-TICK, CE, NOM, DNV, GOST</p>	<p>IEC/EN 61800-3, EN 55011, EN 55022, CSA, UL, C-TICK, CE, NOM, DNV, GOST</p>	<p>IEC/EN 61800-3, EN 55011, EN 55022, CSA, UL, C-TICK, CE, NOM, DNV, GOST</p>	<p>IEC/EN 61800-3, EN 55011, EN 55022, CSA, UL, C-TICK, CE, NOM, DNV, GOST</p>
<p>Machines</p>	<p>Machines, industrial processes and infrastructures</p>	<p>Machines, industrial processes or infrastructures</p>	<p>Buildings and infrastructures</p>	<p>Building or infrastructures</p>

# Selection guide

## Specialized drives - Low voltage

### HVAC

⇒ *Applications:*

Range specifically for HVAC applications (heating, ventilation, air conditioning) in buildings.

### Lifts

⇒ *Applications:*

Lifts

### Altivar 212



Variable speed drives for three-phase asynchronous motors.  
Variable torque building HVAC applications.

### Altivar LIFT



Variable speed drives for lifts.

#### Description

- **Compact size:** side-by-side mounting
- **Simplicity :** Dedicated HVAC functions and remote graphic keypad option
- **Openness :** Integrated communications for building management systems
- **EMC filters** built-in
- **Reduction of the total harmonic distortion** THDI<30%
- **Protection class:** IP21 and IP55

- **Quick start-up** and easy diagnostics with the multi-language graphic display terminal and dedicated Lift configuration menu.
- **Dedicated Lift functions** for greater comfort and safety
- **High-performance motor control** in open-loop and closed loop mode

#### Technical information

Power range for 50...60 Hz supply

0.75...75 kW  
1...100 HP

4...22 kW  
5...30 HP

Voltage

Three-phase 200...480 V

Single-phase 200...240 V  
Three-phase 200...480 V

Drive/Output frequency

0.5...200 Hz

0...599 Hz

Number of quadrants

—

—

Cooling system

—

—

Protection class

—

—

Motor type

Asynchronous  
Synchronous

Yes  
No

Yes  
No

#### Communication

Integrated  
As an option

Modbus, METASYS N2, APOGEE FLN P1, BACnet  
Lonworks

Modbus and CANopen  
Modbus TCP, Fipio, Modbus/Uni-Telway, Modbus Plus, EtherNet/IP, DeviceNet, PROFIBUS DP, PROFIBUS DP V1, INTERBUS S, CC-Link

#### Standards and certifications

IEC/EN 61800-3, EN 55011,  
EN 55022, CSA, UL, C-TICK, CE, NOM

IEC/EN 61800-3, EN55011,  
EN 55022, CSA, UL, C-TICK, CE, NOM et EN81-1 (chap 12.7.3)

#### Intended use

Buildings

Machines

# Notes

# Altistart 01

0.37... 15 kW

0.5...20 HP

## Simple machines Starters



Dimensions (in mm)		width x height x depth
ATS01	N103FT/N106 FT	22.5 x 100 x 100.4
	N109FT/N112 FT/N125 FT	45 x 124 x 130.7
	N206●●/N209●●/N212●●	45 x 154 x 130.7
	N222●●/N232●●	

Type	Soft start units		Soft start/soft stop units					
Motor power	0.37 to 11 kW		0.75 to 15 kW					
Degree of protection	IP20							
Reduction of current peaks	2 controlled phases		2 controlled phases					
Adjustable starting time	1...5 s		1...10 s					
Adjustable deceleration time	No: freewheel stop		Yes: 1... 10 s					
Adjustable breakaway torque	30...80% of DOL motor starting torque							
Logic inputs	-		3 logic inputs (start, stop and startup boost)					
Logic outputs	-		1 logic output					
Relay outputs	-		1 relay output					
Control supply voltage	110... 220 VAC ± 10%, 24 VDC ± 10%		Built into the starter					
Supply voltage	Single-phase 110...230 V							
Motor power								
230 V			Nominal current					
kW			(IcL)					
0.37			3 A					
0.75			6 A					
1.1			9 A					
1.5			12 A					
2.2			25 A					
Supply voltage			Three-phase 110...480 V	Three-phase 200...240 V	Three-phase 380...415 V	Three-phase 440...480 V		
Motor power								
210 V			Nominal current					
HP			(IcL)					
-	0.37-0.55	0.5/-	1.1	0.5-1.5	3 A			
0.5	0.75-1.1	1-1.5	2.2-3	2-3	6 A			
1	1.5	2	4	5	9 A			
1.5	2.2	3	5.5	7.5	12 A			
-	4-5.5	5-7.5	7.5-11	10-15	22 A			
2-3	3-4-5.5	5-7.5	7.5-9-11	10-15	25 A			
-	7.5	10	15	20	32 A			
					ATS01N103FT	-		
					ATS01N106FT	ATS01N206LU	ATS01N206QN	ATS01N206RT
					ATS01N109FT	ATS01N209LU	ATS01N209QN	ATS01N209RT
					ATS01N112FT	ATS01N212LU	ATS01N212QN	ATS01N212RT
					-	ATS01N222LU	ATS01N222QN	ATS01N222RT
					ATS01N125FT	-	-	-
					-	ATS01N232LU	ATS01N232QN	ATS01N232RT

## Starters with TeSys model U



Dimensions (in mm)		width x height x depth
ATSU01	N206LT/N209LT/N212LT	45 x 124 x 130.7
	N222LT/N232LT	45 x 154 x 130.7

Type		Soft start/soft stop units						
Motor power		0.75 to 15 kW						
Degree of protection		IP20						
Reduction of current peaks		Yes						
Adjustable starting and stopping times		1...10 s						
Adjustable breakaway torque		30... 80% of DOL motor starting torque						
Logic inputs		3 logic inputs (start, stop and startup boost)						
Logic outputs		1 logic output						
Relay outputs		1 relay output						
Control supply voltage		24 VDC, 100 mA, ± 10%						
References		Soft start/soft stop units	TeSys starter-controller model U Power base	Control unit (1)	Power connector between ATSU and TeSys model U			
Supply voltage		Three-phase 200...480 V						
Motor power								
230 V		400 V	460 V	Nominal current (IcL)				
kW	HP	kW	HP					
0.75	1	1.5	2	6 A	ATSU01N206LT	LUB12	LUC●05BL	VW3G4104
1.1	1.5	2.2/3	3	6 A	ATSU01N206LT	LUB12	LUC●12BL	
1.5	2	–	5	9 A	ATSU01N209LT	LUB12	LUC●12BL	VW3G4104
–	–	4	–	9 A	ATSU01N209LT	LUB12	LUC●12BL	
2.2	3	5.5	7.5	12 A	ATSU01N212LT	LUB12	LUC●12BL	VW3G4104
3	–	–	–	12 A	ATSU01N212LT	LUB32	LUC●18BL	
4	5	7.5	10	22 A	ATSU01N222LT	LUB32	LUC●18BL	VW3G4104
5.5	7.5	11	15	22 A	ATSU01N222LT	LUB32	LUC●32BL	
7.5	10	15	20	32 A	ATSU01N232LT	LUB32	LUC●32BL	VW3G4104

(1) To compose your reference, replace ● in the reference with: «A» for a standard control unit, «M» for a multifunction unit and «B» for an advanced unit.

# Altistart 22

4...400 kW

3...500 HP

## Simple machines Soft start/soft stop units



Dimensions (en mm)	width x height x depth
Size A:	130 x 265 x 169
Size B:	145 x 295 x 207
Size C:	150 x 356 x 229
Size D:	206 x 425 x 299
Size E:	304 x 455 x 340

Supply voltage		Three-phase 208...600 V	Three-phase 230...440 V
<b>Protection</b>	Degree of protection	IP20: for ATS 22D17●●●D88 starters IP00: for ATS 22C11●●●C59 starters (protection of terminals available as an option)	
	Motor thermal protection	Class 10, 20 or 30	
<b>Drive</b>	Number of controlled phases	3	
	Types of control	Configurable voltage ramp, torque ramp	
	Operating cycle	Standard	
<b>Functions</b>		Integrated Bypass contactor	
<b>Number of I/O</b>	Analog inputs	1 PTC probe	
	Logic inputs	3	
	Logic outputs	-	
	Analog outputs	-	
	Relay outputs	2	
<b>Dialogue</b>		Integrated display terminal, SoMove Lite setup software	
<b>Communication</b>	Integrated	Modbus	
<b>Standards and certifications</b>		IEC/EN 60947-4-2, class A EMC, CE, UL, CSA, C-Tick, GOST, CCC	
<b>Motor connection</b>			Possible to connect the starter in the motor delta connection

3

Connection in the motor power supply line					Soft start/soft stop unit 230...440 V - 50/60 Hz	
Motor						
Power indicated on rating plate						
230 V kW	400 V kW	440 V kW	Nominal current starter (IcL)		Reference	Size
4	7.5	7.5	17		ATS22D17Q	Size A
7.5	15	15	32		ATS22D32Q	Size A
11	22	22	47		ATS22D47Q	Size A
15	30	30	62		ATS22D62Q	Size B
18.5	37	37	75		ATS22D75Q	Size B
22	45	45	88		ATS22D88Q	Size B
30	55	55	110		ATS22C11Q	Size C
37	75	75	140		ATS22C14Q	Size C
45	90	90	170		ATS22C17Q	Size C
55	110	110	210		ATS22C21Q	Size D
75	132	132	250		ATS22C25Q	Size D
90	160	160	320		ATS22C32Q	Size D
110	220	220	410		ATS22C41Q	Size D
132	250	250	480		ATS22C48Q	Size E
160	315	355	590		ATS22C59Q	Size E

Connection in the motor power supply line					Soft start/soft stop unit 230...600 V - 50/60 Hz	
Motor						
Power indicated on rating plate						
230 V kW	400 V kW	440 V kW	500 V kW	Nominal current starter (IcL)	Reference	Size
4	7.5	7.5	9	17	ATS22D17S6	Size A
7.5	15	15	18.5	32	ATS22D32S6	Size A
11	22	22	30	47	ATS22D47S6	Size A
15	30	30	37	62	ATS22D62S6	Size B
18.5	37	37	45	75	ATS22D75S6	Size B
22	45	45	55	88	ATS22D88S6	Size B
30	55	55	75	110	ATS22C11S6	Size C
37	75	75	90	140	ATS22C14S6	Size C
45	90	90	110	170	ATS22C17S6	Size C
55	110	110	132	210	ATS22C21S6	Size D
75	132	132	160	250	ATS22C25S6	Size D
90	160	160	220	320	ATS22C32S6	Size D
110	220	220	250	410	ATS22C41S6	Size D
132	250	250	315	480	ATS22C48S6	Size E
160	315	355	400	590	ATS22C59S6	Size E

The Altistart 22 soft start/soft stop unit is also available with a 110 VDC control power supply, reference ATS22...S6U

# Altistart 48

4...900 kW

2...1200 HP

## Pumping and ventilation machines Soft start/soft stop units

Dimensions (in mm)	width x height x depth
ATS48 D17Q to D47Q	<b>Size A:</b> 160 x 275 x 190
D62Q to C11Q	<b>Size B:</b> 190 x 290 x 235
C14Q to C17Q	<b>Size C:</b> 200 x 340 x 265
C21Q to C32Q	<b>Size D:</b> 320 x 380 x 265
C41Q to C66Q	<b>Size E:</b> 400 x 670 x 300
C79Q to M12Q	<b>Size F:</b> 770 x 890 x 315



Supply voltage			Three-phase 230...415 V (1)			
Type of application			Standard		Severe (2)	
Starter control supply voltage			220...415 V			
Protection		Degree of protection	IP20: ATS48D17● to ATS48C11● starters IP00: ATS48C14● to ATS48M12● starters			
		Motor thermal protection	Class 10		Class 20 and 30	
EMC		Class A	On all starters			
		Class B	On all starters up to 170 A			
Starting mode			Torque control (patented TCS: Torque Control System)			
I/O		Analog inputs	1 PTC probe			
		Logic inputs	4 logic inputs, 2 of which are configurable			
		Logic outputs	2 configurable logic outputs			
		Analog outputs	1 analog output			
		Relay outputs	3 relay outputs, 2 of which are configurable			
Dialogue			Integrated or remote display terminal (in option), PowerSuite software workshop			
Communication		Integrated	Modbus			
		As an option	DeviceNet, Ethernet, Fipio, PROFIBUS DP			
Motor power						
230 V	400 V	Nominal current				
kW	kW	(IcL)				
3	5.5	12 A	–		ATS48D17Q	Size A
4	7.5	17 A	ATS48D17Q	Size A	ATS48D22Q	Size A
5.5	11	22 A	ATS48D22Q	Size A	ATS48D32Q	Size A
7.5	15	32 A	ATS48D32Q	Size A	ATS48D38Q	Size A
9	18.5	38 A	ATS48D38Q	Size A	ATS48D47Q	Size A
11	22	47 A	ATS48D47Q	Size A	ATS48D62Q	Size B
15	30	62 A	ATS48D62Q	Size B	ATS48D75Q	Size B
18.5	37	75 A	ATS48D75Q	Size B	ATS48D88Q	Size B
22	45	88 A	ATS48D88Q	Size B	ATS48C11Q	Size B
30	55	110 A	ATS48C11Q	Size B	ATS48C14Q	Size C
37	75	140 A	ATS48C14Q	Size C	ATS48C17Q	Size C
45	90	170 A	ATS48C17Q	Size C	ATS48C21Q	Size D
55	110	210 A	ATS48C21Q	Size D	ATS48C25Q	Size D
75	132	250 A	ATS48C25Q	Size D	ATS48C32Q	Size D
90	160	320 A	ATS48C32Q	Size D	ATS48C41Q	Size E
110	220	410 A	ATS48C41Q	Size E	ATS48C48Q	Size E
132	250	480 A	ATS48C48Q	Size E	ATS48C59Q	Size E
160	315	590 A	ATS48C59Q	Size E	ATS48C66Q	Size E
–	355	660 A	ATS48C66Q	Size E	ATS48C79Q	Size F
220	400	790 A	ATS48C79Q	Size F	ATS48M10Q	Size F
250	500	1000 A	ATS48M10Q	Size F	ATS48M12Q	Size F
355	630	1200 A	ATS48M12Q	Size F	–	

(1) Possible to connect the starter in the motor delta connection

(2) Starting time greater than 30 seconds (fans, high inertia machines and compressors)



## Soft start/soft stop units

Dimensions (in mm)		width x height x depth	
ATS48	D17Y to D47Y	<b>Size A:</b>	160 x 275 x 190
	D62Y to C11Y	<b>Size B:</b>	190 x 290 x 235
	C14Y to C17Y	<b>Size C:</b>	200 x 340 x 265
	C21Y to C32Y	<b>Size D:</b>	320 x 380 x 265
	C41Y to C66Y	<b>Size E:</b>	400 x 670 x 300
	C79Y to M12Y	<b>Size F:</b>	770 x 890 x 315



Supply voltage												Three-phase 208...690 V (1)						
Type of application												Standard		Severe (2)				
Starter control supply voltage												110...230 V						
Characteristics												Identical to 230...415 V starters						
Motor power												Nominal current (IcL)						
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 A	–			ATS48D17Y	Size A		
3	5	10	15	4	7.5	7.5	9	9	11	15	17 A	ATS48D17Y	Size A		ATS48D22Y	Size A		
5	7.5	15	20	5.5	11	11	11	11	15	18.5	22 A	ATS48D22Y	Size A		ATS48D32Y	Size A		
7.5	10	20	25	7.5	15	15	18.5	18.5	22	22	32 A	ATS48D32Y	Size A		ATS48D38Y	Size A		
10	–	25	30	9	18.5	18.5	22	22	30	30	38 A	ATS48D38Y	Size A		ATS48D47Y	Size A		
–	15	30	40	11	22	22	30	30	37	37	47 A	ATS48D47Y	Size A		ATS48D62Y	Size B		
15	20	40	50	15	30	30	37	37	45	45	62 A	ATS48D62Y	Size B		ATS48D75Y	Size B		
20	25	50	60	18.5	37	37	45	45	55	55	75 A	ATS48D75Y	Size B		ATS48D88Y	Size B		
25	30	60	75	22	45	45	55	55	75	75	88 A	ATS48D88Y	Size B		ATS48C11Y	Size B		
30	40	75	100	30	55	55	75	75	90	90	110 A	ATS48C11Y	Size B		ATS48C14Y	Size C		
40	50	100	125	37	75	75	90	90	110	110	140 A	ATS48C14Y	Size C		ATS48C17Y	Size C		
50	60	125	150	45	90	90	110	110	132	160	170 A	ATS48C17Y	Size C		ATS48C21Y	Size D		
60	75	150	200	55	110	110	132	132	160	200	210 A	ATS48C21Y	Size D		ATS48C25Y	Size D		
75	100	200	250	75	132	132	160	160	220	250	250 A	ATS48C25Y	Size D		ATS48C32Y	Size D		
100	125	250	300	90	160	160	220	220	250	315	320 A	ATS48C32Y	Size D		ATS48C41Y	Size E		
125	150	300	350	110	220	220	250	250	355	400	410 A	ATS48C41Y	Size E		ATS48C48Y	Size E		
150	–	350	400	132	250	250	315	315	400	500	480 A	ATS48C48Y	Size E		ATS48C59Y	Size E		
–	200	400	500	160	315	355	400	400	560	560	590 A	ATS48C59Y	Size E		ATS48C66Y	Size E		
200	250	500	600	–	355	400	–	–	630	630	660 A	ATS48C66Y	Size E		ATS48C79Y	Size F		
250	300	600	800	220	400	500	500	500	710	710	790 A	ATS48C79Y	Size F		ATS48M10Y	Size F		
350	350	800	1000	250	500	630	630	630	900	900	1000 A	ATS48M10Y	Size F		ATS48M12Y	Size F		
400	455	1000	1200	355	630	710	800	800	–	–	1200 A	ATS48M12Y	Size F		–			

(1) Starter connection in the motor delta connection: up to 500 V only, add "S316" at the end of the reference

(2) Starting time greater than 30 seconds (fans, high inertia machines and compressors)

# Altivar 12

0.18...4 kW

0.25...5 HP

Simple machines  
Ultra-compact drives



Dimensions (in mm)	width x height x depth
1C1: 72 x 143 x 102.2	2F3: 105 x 143 x 131.2
1C2: 72 x 143 x 102.2	3F3: 140 x 184 x 141.2
1C3: 72 x 143 x 121.2	
2C1: 105 x 142 x 156.2	
2C2: 105 x 142 x 156.2	

Type of drive		Single-phase	Single-phase	Three-phase				
Supply voltage		120 V	240 V	240 V				
Degree of protection		IP20						
Drive	Output frequency	0.5... 400 Hz						
	Type of control	Asynchronous motor						
	Transient overtorque	U/F, sensorless flux vector control, quadratic U/F						
Speed range		150...170						
Functions		1 to 20						
Number of I/O	Number of functions	40						
	Number of preset speeds	8						
	Analog inputs	1 configurable analog input						
	Logic inputs	4 assignable logic inputs						
	Analog outputs	1 configurable analog output						
Relay outputs		1 protected relay logic output						
Dialogue		Integrated or remote display terminal, SoMove software workshop, or mobile phone via Bluetooth®						
Communication		Integrated Modbus						
Cards (available as an option)								
Reduction of current harmonics								
EMC filter	Integrated		C1 EMC					
	As an option							
Motor power	kW/HP	0.18/0.25	ATV12H018F1 (1)	1C1	ATV12H018M2 (1) (2)	1C2	ATV12H018M3 (1)	1C3
		0.37/0.5	ATV12H037F1	1C1	ATV12H037M2 (2)	1C1	ATV12H037M3	1C3
		0.55/0.75	–		ATV12H055M2 (2)	1C2	–	
		0.75/1	ATV12H075F1	2C1	ATV12H075M2 (2)	1C2	ATV12H075M3	1C3
		1.5/2	–		ATV12HU15M2 (2)	2C2	ATV12HU15M3	2F3
		2.2/3	–		ATV12HU22M2 (2)	2C2	ATV12HU22M3	2F3
		3/3	–		–		ATV12HU30M3	3F3
		4/5	–		–		ATV12HU40M3	3F3

(1) Because of the low heat dissipation, the ATV12H018.. is only supplied on a base plate

(2) Also exists as a multipack

# Altivar 212

0.75...75 kW

1...100 HP

## Building Drives for HVAC applications



Dimensions (in mm)		width x height x depth	
IP21		IP55	
T1A: 107 x 143 x 150	T1: 215 x 297 x 192		
T2A: 142 x 184 x 150	T2: 230 x 340 x 208		
T3A: 180 x 232 x 170	T3: 290 x 560 x 315		
T4A: 245 x 329.5 x 190	T4: 310 x 665 x 315		
T5A: 240 x 420 x 214	T5: 284 x 720 x 315		
T6A: 320 x 630 x 290	T5: 284 x 880 x 343		
T7A: 240 x 550 x 266	T5: 362 x 1000 x 364		
T8A: 320 x 630 x 290			

Type of drive		IP21		IP55		
Supply voltage		200...240 V		380...480 V		
Degree of protection		IP21 and IP41 on the upper part		IP55 drive available in two manufacturing variants, ATV212W...N4 C1 EMC or ATV212W...N4C C2 EMC		
Output frequency		0.5...200 Hz				
Type of control		Kn <sup>2</sup> quadratic ratio, sensorless flux vector control, voltage/frequency ratio (2 points), energy saving ratio 1 to 10				
Speed range		1 to 10				
I/O	Analog inputs	1 switch-configurable current or voltage analog input and 1 voltage analog input, configurable as a PTC probe input				
	Logic inputs	3 programmable logic inputs				
	Analog outputs	1 switch-configurable current or voltage analog output				
	Relay outputs	2 relay logic outputs				
Dialogue		Integrated display terminal with local controls (1) or remote display terminal or PC software (3)				
Communication (see page 4/11)	Integrated	Modbus, APOGEE FLN P1, Metasys N2, BACnet				
	As an option	LonWorks				
EMC filter	Integrated	–	C2 EMC	C2 EMC	C1 EMC	
	Available as an option	C2 EMC	C1 EMC	–	–	
Motor power	kW/HP	0.75/1	ATV212H075M3X T1A	ATV212H075N4 T1A	ATV212W075N4 T1	ATV212W075N4C T1
		1.5/2	ATV212HU15M3X T1A	ATV212HU15N4 T1A	ATV212WU15N4 T1	ATV212WU15N4C T1
		2.2/3	ATV212HU22M3X T1A	ATV212HU22N4 T1A	ATV212WU22N4 T1	ATV212WU22N4C T1
		3/–	ATV212HU30M3X T2A	ATV212HU30N4 T2A	ATV212WU30N4 T2	ATV212WU30N4C T2
		4/5	ATV212HU40M3X T2A	ATV212HU40N4 T2A	ATV212WU40N4 T2	ATV212WU40N4C T2
		5.5/7.5	ATV212HU55M3X T3A	ATV212HU55N4 T2A	ATV212WU55N4 T2	ATV212WU55N4C T2
		7.5/10	ATV212HU75M3X T3A	ATV212HU75N4 T3A	ATV212WU75N4 T2	ATV212WU75N4C T2
		11/15	ATV212HD11M3X T4A	ATV212HD11N4 T3A	ATV212WD11N4 T3	ATV212WD11N4C T3
		15/20	ATV212HD15M3X T4A	ATV212HD15N4 T4A	ATV212WD15N4 T3	ATV212WD15N4C T3
		18.5/25	ATV212HD18M3X T4A	ATV212HD18N4 T4A	ATV212WD18N4 T4	ATV212WD18N4C T4
		22/30	–	ATV212HD22N4S T4A	–	–
		22/30	ATV212HD22M3X T5A	ATV212HD22N4(2) T5A	ATV212WD22N4 T5	ATV212WD22N4C T5
		30/40	ATV212HD30M3X T6A	ATV212HD30N4(2) T5A	ATV212WD30N4 T5	ATV212WD30N4C T5
		37/50	–	ATV212HD37N4 T7A	ATV212WD37N4 T6	ATV212WD37N4C T6
		45/60	–	ATV212HD45N4 T7A	ATV212WD45N4 T6	ATV212WD45N4C T6
55/75	–	ATV212HD55N4 T8A	ATV212WD55N4 T7	ATV212WD55N4C T7		
75/100	–	ATV212HD75N4 T8A	ATV212WD75N4 T7	ATV212WD75N4C T7		

(1) Drive with local controls, Run/Stop, Loc/Rem. keys

(2) For references ATV212HD22N4 and ATV212HD30N4, please refer to the Schneider Electric catalogue.

(3) PC Software is available as a free download from [www.schneider-electric.com](http://www.schneider-electric.com)

# Altivar 312

0.18...15 kW

0.25...20 HP

## Simple industrial machines

### High performance drives



Dimensions (in mm)		width x height x depth	
T 1:	72 x 145 x 122	T 6:	107 x 143 x 152
T 2:	72 x 145 x 132	T 7:	142 x 184 x 152
T 3:	72 x 145 x 132	T 8:	180 x 232 x 172
T 4:	72 x 145 x 142	T 9:	245 x 330 x 192
T 5:	105 x 143 x 132		

Type of drive		Single-phase 240 V	Three-phase 240 V	Three-phase 500V	Three-phase 600V	
Supply voltage		with integrated EMC filters	without EMC filter	with integrated EMC filters	without EMC filter	
Degree of protection		IP20				
Drive	Output frequency	0.5...500 Hz				
	Type of control	Asynchronous motor				
	Transient overtorque	Standard (voltage / frequency) - Performance (sensorless flux vector control) Energy saving ratio 170 ... 200% of the nominal motor torque				
Speed range	1 to 50					
Functions	Number of functions	50				
	Number of preset speeds	16				
	Number of I/O	Analog inputs	3			
		Logic inputs	6			
		Analog outputs	1			
		Logic outputs	-			
	Relay outputs	2				
Dialogue		Integrated 4-digit display, remote terminals (IP54 or IP65), Altivar 61/71 remote graphic display terminal				
Communication	Integrated	Modbus and CANopen				
	As an option	CANopen Daisy chain, Modbus TCP, DeviceNet, PROFIBUS DP, Fipio				
Reduction of current harmonics						
EMC filter	Integrated	C2 EMC	External as an option	Integrated C2(1) or C3 EMC	External as an option	
	As an option	C1 EMC	-	-	-	
Motor power	kW/HP	0.18/0.25	ATV312H018M2 T3	ATV312H018M3 T1	-	-
		0.37/0.5	ATV312H037M2 T3	ATV312H037M3 T1	ATV312H037N4 T5	-
		0.55/0.75	ATV312H055M2 T4	ATV312H055M3 T2	ATV312H055N4 T5	-
		0.75/1	ATV312H075M2 T4	ATV312H075M3 T2	ATV312H075N4 T6	ATV312H075S6 T6
		1.1/1.5	ATV312HU11M2 T6	ATV312HU11M3 T5	ATV312HU11N4 T6	-
		1.5/2	ATV312HU15M2 T6	ATV312HU15M3 T5	ATV312HU15N4 T6	ATV312HU15S6 T6
		2.2/3	ATV312HU22M2 (2) T7	ATV312HU22M3 T6	ATV312HU22N4 T7	ATV312HU22S6 T7
		3/-	-	ATV312HU30M3 T7	ATV312HU30N4 T7	-
		4/5	-	ATV312HU40M3 T7	ATV312HU40N4 T7	ATV312HU40S6 T7
		5.5/7.5	-	ATV312HU55M3 T8	ATV312HU55N4 T8	ATV312HU55S6 T8
		7.5/10	-	ATV312HU75M3 T8	ATV312HU75N4 T8	ATV312HU75S6 T8
		11/15	-	ATV312HD11M3 T9	ATV312HD11N4 T9	ATV312HD11S6 T9
		15/20	-	ATV312HD15M3 T9	ATV312HD15N4 T9	ATV312HD15S6 T9

(1) C2 up to 4 kW

(2) Supplied with integrated C3 EMC filter

# Altivar 31C

0.18...15 kW

0.25...20 HP

Simple machines  
Enclosed IP55 drives



Dimensions (in mm)	width x height x depth
Size 1: 210 x 240 x 163 / Size 2: 215 x 297 x 192	
Size 3: 230 x 340 x 208 / Size 4: 320 x 512 x 282	
Size 5: 440 x 625 x 282	

Supply voltage			Single-phase 200...240 V	Three-phase 380...500 V
Degree of protection			IP55	
Description			Enclosure equipped with an Altivar 31 drive with external heatsink. Removable covers for adding 1 switch-disconnector or 1 circuit-breaker, 3 buttons and/or LEDs, 1 potentiometer	
Motor power	kW/HP			
	0.18/0.25		ATV31C018M2 Size 1	–
	0.37/0.5		ATV31C037M2 Size 1	ATV31C037N4 Size 2
	0.55/0.75		ATV31C055M2 Size 1	ATV31C055N4 Size 2
	0.75/1		ATV31C075M2 Size 1	ATV31C075N4 Size 2
	1.1/1.5		ATV31CU11M2 Size 2	ATV31CU11N4 Size 2
	1.5/2		ATV31CU15M2 Size 2	ATV31CU15N4 Size 2
	2.2/3		ATV31CU22M2 Size 3	ATV31CU22N4 Size 3
	3/–		–	ATV31CU30N4 Size 3
	4/5		–	ATV31CU40N4 Size 3
	5.5/7.5		–	ATV31CU55N4 (1) Size 4
	7.5/10		–	ATV31CU75N4 (1) Size 4
	11/15		–	ATV31CD11N4 (1) Size 5
	15/20		–	ATV31CD15N4 (1) Size 5

(1) Drive in metal enclosure without cover.

3

# Altivar 32

0.18... 15 kW

0.25...20 HP

## Complex machines

### Compact drives



Dimensions (in mm)	width x height x depth
T1:	45 x 317 x 245
T2:	60 x 317 x 245
T4:	150 x 308 x 232 (EMC plate installed)
T4:	150 x 232 x 232 (EMC plate not installed)
T5:	180 x 404 x 232 (EMC plate installed)
T5:	180 x 330 x 232 (EMC plate not installed)

Type of drive			Single-phase 240 V with integrated EMC filter	Three-phase 500 V with integrated EMC filter
Degree of protection			IP20	
Drive	Output frequency		0.1...599 Hz	
	Type of control	Asynchronous motor	Standard (voltage/frequency) Performance (sensorless flux vector control) Pump/fan (Kn <sup>2</sup> quadratic ratio) Energy saving ratio	
		Synchronous motor	Profile for open loop synchronous motor	
	Transient overtorque		170...200% of the nominal motor torque	
Speed range			1 to 50	
Functions	Number of functions		150	
	Number of I/O	Analog inputs	3 - Response time : 3ms, resolution 10 bits	
		Logic inputs	6 - Response time : 8 ms, configurable in PTC and IN pwm	
		Analog outputs	1 - Updating time : 2 ms	
		Logic outputs	1 - Sampling time : 2 ms, configurable as voltage (0-10 V) or current (0-20 mA)	
		Relay outputs	2	
Dialogue			4-digit display, remote display terminal (IP54 or IP55), remote graphic display terminal, SoMove setup software and SoMove Mobile application for mobile phone.	
Communication	Integrated		Modbus and CANopen - Bluetooth® link	
	As an option		DeviceNet, PROFIBUS DP V1, EtherNet/IP, Modbus TCP, EtherCat	
Reduction of current harmonics				
EMC filter	Integrated		C2 EMC	
	As an option		C1 EMC	
Motor power	kW	HP		
	0.18	1/4	ATV32H018M2	T1
	0.37	1/2	ATV32H037M2	T1
	0.55	3/4	ATV32H055M2	T1
	0.75	1	ATV32H075M2	T1
	1.1	1 1/2	ATV32HU11M2	T2
	1.5	2	ATV32HU15M2	T2
	2.2	3	ATV32HU22M2	T2
	3	-	-	-
	4	5	-	-
	5.5	7 1/2	-	-
	7.5	10	-	-
	11	15	-	-
	15	20	-	-

# Notes



Dimensions (in mm)		width x height x depth	
T2	: 130 x 230 x 175	T3	: 155 x 260 x 187
T4	: 175 x 295 x 187	T5A	: 210 x 295 x 213
T5B	: 230 x 400 x 213	T6	: 240 x 420 x 236
T7A	: 240 x 550 x 266	T7B	: 320 x 550 x 266
T8	: 320 x 630 x 290	T9	: 320 x 920 x 377
T10	: 360 x 1022 x 377	T11	: 340 x 1190 x 377
T12	: 440 x 1190 x 377	T13	: 595 x 1190 x 377
T14	: 890 x 1390 x 377	T15	: 1120 x 1390 x 377



Type of drive			Single-phase	Three-phase	Three-phase			
Supply voltage			200...240 V	200...240 V	380...480 V			
<b>Degree of protection</b>			IP20 for unprotected drives and IP41 on the upper part					
<b>Drive</b>	Output frequency		0.1...599 Hz up to 37 kW; 0.1...500 Hz from 45 to 800 kW					
	Type of control	Asynchronous motor	Kn <sup>2</sup> quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio					
		Synchronous motor	Vector control without speed feedback					
	Transient overtorque		120...130% of the nominal drive current for 60 seconds					
<b>Speed range</b>			1...100 in open loop mode					
<b>Functions</b>	Number of functions		> 150					
	Number of preset speeds		16					
	Number of I/O		Analog inputs 2...4/Logic inputs 6...20					
			Analog outputs 1...3/Logic outputs 0...8					
			Relay outputs 2...4					
<b>Dialogue</b>			Safety input 1					
<b>Communication</b>			Remote graphic display terminal, SoMove setup software (3)					
<b>Communication</b>			Modbus and CANopen					
<b>Communication</b>			As an option					
<b>Communication</b>			<b>HVAC protocols:</b> LonWorks, BACnet, METASYS N2, APOGEE FLN P1 <b>Industrial protocols:</b> Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link					
<b>Cards (available as an option)</b>			Multi-pump cards, I/O extension cards, "Controller Inside" programmable card					
<b>Reduction of current harmonics</b>			DC choke integrated or supplied with the drive or AFE Altivar (Active Front End)					
<b>EMC filter</b>	Integrated		C2 EMC	C2 EMC up to 7.5 kW	C2 EMC up to 4 kW			
	As an option		C1 EMC	C1 EMC	C3 EMC from 5.5 to 630 kW C1 EMC from 0.75 to 630 kW			
<b>Motor power</b>	kW/HP	0.37/0.5	ATV61H075M3	T2	–	–		
		0.75/1	ATV61HU15M3	T2	ATV61H075M3	T2	ATV61H075N4	T2
		1.5/2	ATV61HU22M3	T3	ATV61HU15M3	T2	ATV61HU15N4	T2
		2.2/3	ATV61HU30M3	T3	ATV61HU22M3	T3	ATV61HU22N4	T2
		3/–	ATV61HU40M3 (1)	T3	ATV61HU30M3	T3	ATV61HU30N4	T3
		4/5	ATV61HU55M3 (1)	T4	ATV61HU40M3	T3	ATV61HU40N4	T3
		5.5/7.5	ATV61HU75M3 (1)	T5A	ATV61HU55M3	T4	ATV61HU55N4	T4
		7.5/10	–	–	ATV61HU75M3	T5A	ATV61HU75N4	T4
		11/15	–	–	ATV61HD11M3X(2)	T5B	ATV61HD11N4	T5A
		15/20	–	–	ATV61HD15M3X(2)	T5B	ATV61HD15N4	T5B
		18.5/25	–	–	ATV61HD18M3X(2)	T6	ATV61HD18N4	T5A
		22/30	–	–	ATV61HD22M3X(2)	T6	ATV61HD22N4	T6
		30/40	–	–	ATV61HD30M3X(2)	T7B	ATV61HD30N4	T7A
		37/50	–	–	ATV61HD37M3X(2)	T7B	ATV61HD37N4	T7A
		45/60	–	–	ATV61HD45M3X(2)	T7B	ATV61HD45N4	T8
		55/75	–	–	ATV61HD55M3X(2)	T9	ATV61HD55N4	T8
		75/100	–	–	ATV61HD75M3X(2)	T9	ATV61HD75N4	T8
		90/125	–	–	ATV61HD90M3X(2)	T10	ATV61HD90N4	T9
		110/150	–	–	–	–	ATV61HC11N4	T9
		132/200	–	–	–	–	ATV61HC13N4	T10
		160/250	–	–	–	–	ATV61HC16N4	T11
		220/350	–	–	–	–	ATV61HC22N4	T12
		250/400	–	–	–	–	ATV61HC25N4	T13
		315/500	–	–	–	–	ATV61HC31N4	T13
		400/600	–	–	–	–	ATV61HC40N4	T14
		500/700	–	–	–	–	ATV61HC50N4	T14
		630/900	–	–	–	–	ATV61HC63N4	T15

(1) Must be used with a line choke, refer to the Schneider Electric catalogue.

(2) Drive supplied without EMC filter

(3) SoMove setup software : available from 2011. Altivar 61 is also supported by Powersuite software workshop.

For all other variants, please refer to the Schneider Electric catalogue.



# Altivar 61

0.37...800 kW

0.5...900 HP

## Pumping and ventilation machines Drives for industry and infrastructure



Dimensions (in mm)	width x height x depth
T6	: 240 x 420 x 236
T8	: 320 x 630 x 290
T11	: 340 x 1190 x 377
T13	: 595 x 1190 x 377
T15	: 1120 x 1390 x 377

Type of drive		Three-phase				
Supply voltage		500...690 V				
Degree of protection		IP20 and IP41 on the upper part				
Drive	Output frequency	0.1...599 Hz up to 37 kW; 0.1...500 Hz from 45 to 800 kW				
	Type of control	Asynchronous motor	Kn <sup>2</sup> quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio			
		Synchronous motor	Vector control without speed feedback			
	Transient overtorque	120...130% of the nominal drive current for 60 seconds				
Speed range		1...100 in open loop mode				
Functions	Number of functions	> 150				
	Number of preset speeds	16				
	Number of I/O	Analog inputs 2...4/Logic inputs 6...20 Analog outputs 1...3/Logic outputs 0...8 Relay outputs 2...4 Safety input 1				
Dialogue		Remote graphic display terminal, SoMove setup software (1)				
Communication	Integrated	Modbus and CANopen				
	As an option	<b>HVAC protocols:</b> LonWorks, BACnet, METASYS N2, APOGEE FLN P1 <b>Industrial protocols:</b> Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 et V1, INTERBUS, CC-Link				
Cards (available as an option)		Multi-pump cards, I/O extension cards, "Controller Inside" programmable card				
Reduction of current harmonics		DC choke integrated or supplied with the product or AFE Altivar (Active Front End)				
EMC filter		Integrated				
Motor power	kW/HP	500 V	575 V	690 V		
		kW	HP	kW		
		2.2	3	3	ATV61HU30Y	T6
		3	–	4	ATV61HU40Y	T6
		4	5	5.5	ATV61HU55Y	T6
		5.5	7.5	7.5	ATV61HU75Y	T6
		7.5	10	11	ATV61HD11Y	T6
		11	15	15	ATV61HD15Y	T6
		15	20	18.5	ATV61HD18Y	T6
		18.5	25	22	ATV61HD22Y	T6
		22	30	30	ATV61HD30Y	T6
		30	40	37	ATV61HD37Y	T8
		37	50	45	ATV61HD45Y	T8
		45	60	55	ATV61HD55Y	T8
		55	75	75	ATV61HD75Y	T8
		75	100	90	ATV61HD90Y	T8
		90	125	110	ATV61HC11Y	T11
		110	150	132	ATV61HC13Y	T11
		132	–	160	ATV61HC16Y	T11
		160	200	200	ATV61HC20Y	T11
		200	250	250	ATV61HC25Y	T13
		250	350	315	ATV61HC31Y	T13
		315	450	400	ATV61HC40Y	T13
		400	550	500	ATV61HC50Y	T15
		500	700	630	ATV61HC63Y	T15
		630	800	800	ATV61HC80Y	T15

(1) SoMove setup software : available from 2011. Altivar 61 is also supported by Powersuite software workshop.

For all other variants, please refer to the Schneider Electric catalogue.

# Altivar 61

0.75...90 kW

1...125 HP

## Pumping and ventilation machines

IP54 drives



Dimensions (in mm)		width x height x depth	
<b>ATV61W...</b>			
<b>TA2</b> : 235 x 490 x 272	<b>TD</b> : 310 x 665 x 315		
<b>TA3</b> : 235 x 490 x 286	<b>TE</b> : 284 x 720 x 315		
<b>TB</b> : 255 x 525 x 286	<b>TF</b> : 284 x 880 x 343		
<b>TC</b> : 290 x 560 x 315	<b>TG</b> : 362 x 1000 x 364		

Type of drive		Three-phase 380...480 V				
<b>Degree of protection</b>		<b>Type 12 (1) / IP54</b>				
<b>Drive</b>	Output frequency	0.1...599 Hz up to 37 kW; 0.1...500 Hz from 45 to 800 kW				
	Type of control	Asynchronous motor	Kn <sup>2</sup> quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio			
		Synchronous motor	Vector control without speed feedback			
	Transient overtorque	120...130% of the nominal drive current for 60 seconds				
<b>Speed range</b>		1...100 in open loop mode				
<b>Functions</b>	Number of functions	> 150				
	Number of preset speeds	16				
	Number of I/O	Analog inputs 2...4/Logic inputs 6...20				
		Analog outputs 1...3/Logic outputs 0...8				
		Relay outputs 2...4				
		Safety input 1				
<b>Dialogue</b>		Remote graphic display terminal, SoMove setup software (2)				
<b>Communication</b>	Integrated	Modbus and CANopen				
	As an option	<b>HVAC protocols:</b> LonWorks, BACnet, METASYS N2, APOGEE FLN P1 <b>Industrial protocols:</b> Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link				
<b>Cards (available as an option)</b>		Multi-pump cards, I/O extension cards, "Controller Inside" programmable card				
<b>Reduction of current harmonics</b>		Integrated DC choke				
<b>EMC filter</b>	Integrated	C2 EMC				
	As an option	-				
<b>Motor power</b>	kW/HP	0.75/1	ATV61W075N4	TA2	ATV61E5075N4	TA2
		1.5/2	ATV61WU15N4	TA2	ATV61E5U15N4	TA2
		2.2/3	ATV61WU22N4	TA2	ATV61E5U22N4	TA2
		3/-	ATV61WU30N4	TA3	ATV61E5U30N4	TA3
		4/5	ATV61WU40N4	TA3	ATV61E5U40N4	TA3
		5.5/7.5	ATV61WU55N4	TB	ATV61E5U55N4	TB
		7.5/10	ATV61WU75N4	TB	ATV61E5U75N4	TB
		11/15	ATV61WD11N4	TC	ATV61E5D11N4	TC
		15/20	ATV61WD15N4	TD	ATV61E5D15N4	TD
		18.5/25	ATV61WD18N4	TD	ATV61E5D18N4	TD
		22/30	ATV61WD22N4	TE	ATV61E5D22N4	TE
		30/40	ATV61WD30N4	TF	ATV61E5D30N4	TF
		37/50	ATV61WD37N4	TF	ATV61E5D37N4	TF
		45/60	ATV61WD45N4	TG	ATV61E5D45N4	TG
		55/75	ATV61WD55N4	TG	ATV61E5D55N4	TG
		75/100	ATV61WD75N4	TG	ATV61E5D75N4	TG
90/125	ATV61WD90N4	TG	ATV61E5D90N4	TG		

Drive with integrated C1 filter: add the letter **C** at the end of the reference. For example, ATV61W075N4 becomes ATV61W075N4C

For other variants, please refer to the Schneider Electric catalogue.

(1) For ATV61W... range only.

(2) SoMove setup software : available from 2011. Altivar 61 is also supported by Powersuite software workshop.

# Altivar 61Q

110...800 kW

150...900 HP

## Pumping and ventilation machines Water-cooled drives for harsh environments



Dimensions (in mm)	width x height x depth
T11	: 330 x 950 x 377
T13	: 585 x 950 x 377
T15	: 1110 x 1150 x 377

Type of drive		Three-phase	Three-phase		
Supply voltage		380...480 V	500...690 V		
Degree of protection		Sideways and front IP31 - Top IP20 - Bottom IP00			
Drive	Output frequency	0.1...500Hz			
	Type of control	Asynchronous motor	Kn <sup>2</sup> quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio		
		Synchronous motor	Vector control without speed feedback		
	Transient overtorque	120...130% of the nominal drive current for 60 seconds			
Speed range		1...100 in open loop mode			
Functions	Number of functions	> 150			
	Number of preset speeds	16			
	Number of I/O	Analog inputs 2...4/Logic inputs 6...20			
		Analog outputs 1...3/Logic outputs 0...8			
		Relay outputs 2...4			
		Safety input 1			
Dialogue		Remote graphic display terminal, SoMove setup software (2)			
Communication	Integrated	Modbus and CANopen			
	As an option	<b>HVAC protocols:</b> LonWorks, BACnet, METASYS N2, APOGEE FLN P1 <b>Industrial protocols:</b> Modbus TCP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profbus DP, Profbus DP V1, DeviceNet, EthernetIP, CC-Link, INTERBUS			
Cards (available as an option)		Multi-pump cards, I/O extension cards, "Controller Inside" programmable card			
Reduction of current harmonics		Optional AC choke, Altivar AFE (Active Front End)			
EMC filter	Integrated	C3 EMC			
	As an option	C1 EMC			
Motor power	kW/HP	110/150	ATV61QC11N4	T11	-
		132/200	ATV61QC13N4	T11	-
		160/250	ATV61QC16N4	T11	-
		200/300	ATV61QC20N4	T13	-
		250/400	ATV61QC25N4	T13	-
		315/500	ATV61QC31N4	T13	-
		400/600	ATV61QC40N4	T15	-
		500/700	ATV61QC50N4	T15	-
630/900	ATV61QC63N4	T15	-		

500 V	575 V	690 V		
kW	HP	kW		
110	150	132	-	ATV61QC13Y T11
132	-	160	-	ATV61QC16Y T11
160	200	200	-	ATV61QC20Y T11
200	250	250	-	ATV61QC25Y T13
250	350	315	-	ATV61QC31Y T13
315	450	400	-	ATV61QC40Y T13
400	550	500	-	ATV61QC50Y T15
500	700	630	-	ATV61QC63Y T15
630	800	800	-	ATV61QC80Y T15

(1) SoMove setup software : available during 2011. Altivar 61 also works with the PowerSuite software workshop.

# Altivar 61

0.37...800 kW

0.5...900 HP

## Pumping and ventilation machines I/O extension and specific cards



Type of card	I/O extension Logic	Extended
<b>Description</b>	1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 x 0...20 mA differential current analog input 1 software-configurable voltage (0...10 VDC) or current (0...20 mA) analog input 2 software-configurable voltage ( $\pm 10V$ , 0...10 VDC) or current (0...20 mA) analog inputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
<b>Reference</b>	<b>VW3A3201</b>	<b>VW3A3202</b>

## "Controller Inside" programmable card



Type of card	Programmable "Controller Inside"
<b>Description</b>	10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs, 6 logic outputs, 2 analog outputs, a master port for the CANopen bus, a PC port for programming with the PS 1131 software workshop.
<b>Reference</b>	<b>VW3A3501</b>

## Multi-pump cards



Type of card	Multi-pump
<b>Description</b>	The pump switching card ensures compatibility of applications developed on the Altivar 38.
<b>Reference</b>	<b>VW3A3502</b>
<b>Description</b>	This card is specific to pump switching. It ensures optimum flow for an impeccable quality of service. Its algorithm both saves energy and prolongs equipment service life.
<b>Reference</b>	<b>VW3A3503</b>
<b>Description</b>	The VWA3503 "Water Solution" card can be used to support all multi-pump applications.
<b>Reference</b>	<b>VW3A3503</b>

# Notes

# Altivar 71

0.37...630 kW

0.5...700 HP

## Complex, high-power machines

### High performance drives



Dimensions (in mm)		width x height x depth
<b>T2</b>	: 130 x 230 x 175	<b>T3</b> : 155 x 260 x 187
<b>T4</b>	: 175 x 295 x 187	<b>T5A</b> : 210 x 295 x 213
<b>T5B</b>	: 230 x 400 x 213	<b>T6</b> : 240 x 420 x 236
<b>T7A</b>	: 240 x 550 x 266	<b>T7B</b> : 320 x 550 x 266
<b>T8</b>	: 320 x 630 x 290	<b>T9</b> : 320 x 920 x 377
<b>T10</b>	: 360 x 1022 x 377	<b>T11</b> : 340 x 1190 x 377
<b>T12</b>	: 440 x 1190 x 377	<b>T13</b> : 595 x 1190 x 377
<b>T14</b>	: 890 x 1390 x 377	<b>T15</b> : 1120 x 1390 x 377

Type of drive		Single-phase	Three-phase	Three-phase				
Supply voltage		200...240 V (3)	200...240 V (3)	380...480 V (3)				
<b>Degree of protection</b>		IP20 for unprotected drives and IP41 on the upper part						
<b>Drive</b>	Output frequency	0...599 Hz up to 37 kW - 0...500 Hz from 45...630 kW						
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System					
		Synchronous motor	Vector control with and without speed feedback (4)					
	Transient overtorque	220% of nominal motor torque for 2 seconds, and 170% for 60 seconds						
<b>Speed range</b>		1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode						
<b>Functions</b>	Number of functions	> 150						
	Number of preset speeds	16						
	Number of I/O	Analog inputs	2...4					
		Logic inputs	6...20					
		Analog outputs	1...3					
		Logic outputs	0...8					
		Relay outputs	2...4					
Safety input	1							
<b>Dialogue</b>		Remote graphic display terminal, SoMove setup software (5)						
<b>Communication</b>	Integrated	Modbus and CANopen						
	As an option	Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link.						
<b>Cards (available as an option)</b>		Encoder interface cards, I/O extension cards, "Controller Inside" programmable card						
<b>Reduction of current harmonics</b>		DC choke integrated or supplied with the product or Altivar AFE (Active Front End).						
<b>EMC filter</b>	Integrated	C2 EMC up to 4 kW, C3 EMC from 5,5 to 500 kW						
	As an option	C1 EMC from 0.75 to 500 kW						
<b>Motor power</b>	kW/HP	0.37/0.5	ATV71H075M3	T2	ATV71H037M3	T2	–	
		0.75/1	ATV71HU15M3	T2	ATV71H075M3	T2	ATV71H075N4	T2
		1.5/2	ATV71HU22M3	T3	ATV71HU15M3	T2	ATV71HU15N4	T2
		2.2/3	ATV71HU30M3	T3	ATV71HU22M3	T3	ATV71HU22N4	T2
		3/–	ATV71HU40M3 (1)	T3	ATV71HU30M3	T3	ATV71HU30N4	T3
		4/5	ATV71HU55M3 (1)	T4	ATV71HU40M3	T3	ATV71HU40N4	T3
		5.5/7.5	ATV71HU75M3 (1)	T5A	ATV71HU55M3	T4	ATV71HU55N4	T4
		7.5/10	–	–	ATV71HU75M3	T5A	ATV71HU75N4	T4
		11/15	–	–	ATV71HD11M3X (2)	T5B	ATV71HD11N4	T5A
		15/20	–	–	ATV71HD15M3X (2)	T5B	ATV71HD15N4	T5B
		18.5/25	–	–	ATV71HD18M3X (2)	T6	ATV71HD18N4	T5B
		22/30	–	–	ATV71HD22M3X (2)	T6	ATV71HD22N4	T6
		30/40	–	–	ATV71HD30M3X (2)	T7B	ATV71HD30N4	T7A
		37/50	–	–	ATV71HD37M3X (2)	T7B	ATV71HD37N4	T7A
		45/60	–	–	ATV71HD45M3X (2)	T7B	ATV71HD45N4	T8
		55/75	–	–	ATV71HD55M3X (2)	T9	ATV71HD55N4	T8
		75/100	–	–	ATV71HD75M3X (2)	T10	ATV71HD75N4	T8
		90/125	–	–	–	–	ATV71HD90N4	T9
		110/150	–	–	–	–	ATV71HC11N4	T10
		132/200	–	–	–	–	ATV71HC13N4	T11
		160/250	–	–	–	–	ATV71HC16N4	T12
		200/300	–	–	–	–	ATV71HC20N4	T13
		220/350	–	–	–	–	ATV71HC25N4	T13
		280/450	–	–	–	–	ATV71HC28N4	T13
		315/500	–	–	–	–	ATV71HC31N4	T14
		355/–	–	–	–	–	ATV71HC40N4	T14
		500/700	–	–	–	–	ATV71HC50N4	T15

(1) Must be used with a line choke, Refer to the Schneider Electric catalogue.

(2) Drive supplied without EMC filter.

(3) A three-phase 380...480 V range on base plate is available from 0.75 to 11 kW. Please refer to the Schneider Electric catalogue.

(4) Vector control with speed feedback for synchronous motors is supported by the S383 variant of the Altivar 71.

(5) SoMove setup software : available from 2011. Altivar 71 is also supported by Powersuite software workshop.

# Altivar 71

0.37...630 kW

0.5...700 HP

## Complex, high-power machines High performance drives



Dimensions (in mm)		width x height x depth	
<b>T2</b>	: 130 x 230 x 175	<b>T3</b>	: 155 x 260 x 187
<b>T4</b>	: 175 x 295 x 187	<b>T5A</b>	: 210 x 295 x 213
<b>T5B</b>	: 230 x 400 x 213	<b>T6</b>	: 240 x 420 x 236
<b>T7A</b>	: 240 x 550 x 266	<b>T7B</b>	: 320 x 550 x 266
<b>T8</b>	: 320 x 630 x 290	<b>T9</b>	: 320 x 920 x 377
<b>T10</b>	: 360 x 1022 x 377	<b>T11</b>	: 340 x 1190 x 377
<b>T12</b>	: 440 x 1190 x 377	<b>T13</b>	: 595 x 1190 x 377
<b>T14</b>	: 890 x 1390 x 377	<b>T15</b>	: 1120 x 1390 x 377

Type of drive		Three-phase				
Supply voltage		500... 690 V				
<b>Degree of protection</b>		IP20 for unprotected drives and IP41 on the upper part				
<b>Drive</b>	Output frequency	0...599 Hz up to 37 kW - 0...500 Hz from 45...630 kW				
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System			
		Synchronous motor	Vector control with and without speed feedback (1)			
	Transient overtorque	220% of nominal motor torque for 2 seconds, and 170% for 60 seconds				
<b>Speed range</b>		1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode				
<b>Functions</b>	Number of functions		> 150			
	Number of preset speeds		16			
	Number of I/O	Analog inputs	2...4			
		Logic inputs	6...20			
		Analog outputs	1...3			
		Logic outputs	0...8			
		Relay outputs	2...4			
		Safety input	1			
<b>Dialogue</b>		Remote graphic display terminal, SoMove setup software (2)				
<b>Communication</b>	Integrated	Modbus and CANopen				
	As an option	Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link.				
<b>Cards (available as an option)</b>		Encoder interface cards, I/O extension cards, "Controller Inside" programmable card				
<b>Reduction of current harmonics</b>		DC choke integrated or DC choke optional or AFE Altivar (Active Front End)				
<b>EMC filter</b>		Integrated C3 EMC				
<b>Motor power</b>	kW/HP	Integrated				
		500 V kW	575 V HP	690 V kW		
		1.5	2	2.2	ATV71HU22Y	T6
		2.2	3	3	ATV71HU30Y	T6
		3	–	4	ATV71HU40Y	T6
		4	5	5.5	ATV71HU55Y	T6
		5.5	7.5	7.5	ATV71HU75Y	T6
		7.5	10	11	ATV71HD11Y	T6
		11	15	15	ATV71HD15Y	T6
		15	20	18.5	ATV71HD18Y	T6
		18.5	25	22	ATV71HD22Y	T6
		22	30	30	ATV71HD30Y	T6
		30	40	37	ATV71HD37Y	T8
		37	50	45	ATV71HD45Y	T8
		45	60	55	ATV71HD55Y	T8
		55	75	75	ATV71HD75Y	T8
		75	100	90	ATV71HD90Y	T8
		90	125	110	ATV71HC11Y	T11
		110	150	132	ATV71HC13Y	T11
		132	–	160	ATV71HC16Y	T11
		160	200	200	ATV71HC20Y	T13
		200	250	250	ATV71HC25Y	T13
		250	350	315	ATV71HC31Y	T13
		315	450	400	ATV71HC40Y	T15
		400	550	500	ATV71HC50Y	T15
		500	700	630	ATV71HC63Y	T15

(1) Vector control with speed feedback for synchronous motors is supported by the S383 variant of the Altivar 71.

(2) SoMove setup software : available from 2011. Altivar 71 is also supported by Powersuite software workshop..

For all other variants, please refer to the Schneider Electric catalogue.

# Altivar 71

0.75...75 kW

1...100 HP

## Complex, high-power machines

IP54 drives



Dimensions (in mm)		width x height x depth
ATV71W..., ATV71E5... up to 75 kW		
TA2	: 235 x 490 x 272	TD : 310 x 665 x 315
TA3	: 235 x 490 x 286	TE : 284 x 720 x 315
TB	: 255 x 525 x 286	TF : 284 x 880 x 343
TC	: 290 x 560 x 315	TG : 362 x 1000 x 364

Type of drive		Three-phase 380...480 V				
				With switch		
<b>Degree of protection</b>		UL Type 12 (1) / IP54				
<b>Drive</b>	Output frequency	0...599 Hz up to 37 kW - 0...500 Hz from 45...75 kW				
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System			
		Synchronous motor	Vector control without speed feedback			
	Transient overtorque	220% of nominal motor torque for 2 seconds, and 170% for 60 seconds				
<b>Speed range</b>		1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode				
<b>Functions</b>	Number of functions	> 150				
	Number of preset speeds	16				
	Number of I/O	Analog inputs	2...4			
		Logic inputs	6...20			
		Analog outputs	1...3			
	Logic outputs	0...8				
	Relay outputs	2...4				
Safety input	1					
<b>Dialogue</b>		Remote graphic display terminal, SoMove setup software (2)				
<b>Communication</b>	Integrated	Modbus and CANopen				
	As an option	Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, EtherCAT, DeviceNet, PROFIBUS DP V0 et V1, INTERBUS, CC-Link.				
<b>Cards (available as an option)</b>		Encoder interface cards, I/O extension cards, "Controller Inside" programmable card				
<b>Reduction of current harmonics</b>		Optional chokes and passive filters				
<b>EMC filter</b>	Integrated	C2 EMC				
	As an option	External C1 EMC				
<b>Motor power</b>	kW/HP	0.75/1	ATV71W075N4	TA2	ATV71E5075N4	TA2
		1.5/2	ATV71WU15N4	TA2	ATV71E5U15N4	TA2
		2.2/3	ATV71WU22N4	TA2	ATV71E5U22N4	TA2
		3/-	ATV71WU30N4	TA3	ATV71E5U30N4	TA3
		4/5	ATV71WU40N4	TA3	ATV71E5U40N4	TA3
		5.5/7.5	ATV71WU55N4	TB	ATV71E5U55N4	TB
		7.5/10	ATV71WU75N4	TB	ATV71E5U75N4	TB
		11/15	ATV71WD11N4	TC	ATV71E5D11N4	TC
		15/20	ATV71WD15N4	TD	ATV71E5D15N4	TD
		18.5/25	ATV71WD18N4	TD	ATV71E5D18N4	TD
		22/30	ATV71WD22N4	TD	ATV71E5D22N4	TD
		30/40	ATV71WD30N4	TF	ATV71E5D30N4	TF
		37/50	ATV71WD37N4	TF	ATV71E5D37N4	TF
		45/60	ATV71WD45N4	TG	ATV71E5D45N4	TG
		55/75	ATV71WD55N4	TG	ATV71E5D55N4	TG
75/100	ATV71WD75N4	TG	ATV71E5D75N4	TG		

(1) For ATV71W... range only.

(2) SoMove setup software : available from 2011. Altivar 71 is also supported by Powersuite software workshop.



# Altivar 71Q

90...630 kW  
125...700 HP

Complex, high-power machines  
Water-cooled drives for harsh environments



Dimensions (in mm)	width x height x depth
T11	: 330 x 950 x 377
T13	: 585 x 950 x 377
T15	: 1110 x 1150 x 377

Type of drive		Three-phase	Three-phase		
Supply voltage		380...480 V	500...690 V		
Degree of protection		Sideways and front IP31 - Top IP20 - Bottom IP00			
Drive	Output frequency	0.1...500Hz			
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System		
		Synchronous motor	Vector control without speed feedback		
	Transient overtorque	220% of nominal motor torque for 2 seconds, and 170% for 60 seconds			
Speed range		1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode			
Functions	Number of functions		> 150		
	Number of preset speeds		16		
	Number of I/O	Analog inputs	2...4		
		Logic inputs	6...20		
	Analog outputs	Logic outputs	0...8		
		Relay outputs	2...4		
	Safety input		1		
	Dialogue		Remote graphic display terminal, SoMove setup software (1)		
Communication	Integrated	Modbus and CANopen			
	As an option	Modbus TCP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profbus DP, Profbus DP V1, DeviceNet, EthernetIP, CC-Link, INTERBUS			
Cards (available as an option)		Multi-pump cards, I/O extension cards, "Controller Inside" programmable card			
Reduction of current harmonics		Optional AC choke, Altivar AFE (Active Front End)			
EMC filter	Integrated	C3 EMC			
	As an option	C1 EMC			
Motor power	kW/HP	90/125	ATV71QD90N4	T11	–
		110/150	ATV71QC11N4	T11	–
		132/200	ATV71QC13N4	T11	–
		160/250	ATV71QC16N4	T13	–
		200/300	ATV71QC20N4	T13	–
		250/400	ATV71QC25N4	T13	–
		315/500	ATV71QC31N4	T15	–
		400/600	ATV71QC40N4	T15	–
		500/700	ATV71QC50N4	T15	–

	500 V	575 V	690 V		
	kW	HP	kW		
	90	125	110	–	ATV71QC11Y T11
	110	150	132	–	ATV71QC13Y T11
	132	-	160	–	ATV71QC16Y T11
	160	200	200	–	ATV71QC20Y T13
	200	250	250	–	ATV71QC25Y T13
	250	350	315	–	ATV71QC31Y T13
	315	450	400	–	ATV71QC40Y T15
	400	550	500	–	ATV71QC50Y T15
	500	700	630	–	ATV71QC63Y T15

(1) SoMove setup software : available during 2011. Altivar 71 also works with the PowerSuite software workshop.

# Altivar LIFT

4...22 kW

5...30 HP

## Complex, high-power machines Drives for lifts



Dimensions (in mm) width x height x depth without remote graphic terminal	
<b>T4</b> : 175 x 295 x 161	<b>T6</b> : 240 x 420 x 210
<b>T5A</b> : 210 x 295 x 187	<b>T7</b> : 240 x 550 x 230
<b>T5B</b> : 230 x 400 x 187	

Type of drive		Three-phase	Three-phase			
Supply voltage		200...240 V	380...480 V			
<b>Degree of protection</b>		IP20 for unprotected drives and IP41 on the upper part				
<b>Drive</b>	Output frequency	0...599 Hz				
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio			
		Synchronous motor	Vector control with and without speed feedback			
	Transient overtorque	220% of nominal motor torque for 2 seconds, and 170% for 60 seconds				
<b>Speed range</b>		1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode				
<b>Functions</b>	Number of functions	> 150				
	Number of preset speeds	16				
	Number of I/O	Analog inputs	2...4			
		Logic inputs	6...20			
		Analog outputs	1...3			
		Logic outputs	0...8			
		Relay outputs	2...4			
		Safety input	1			
<b>Dialogue</b>		Remote graphic display terminal, SoMove setup software (1)				
<b>Communication</b>	Integrated	Modbus and CANopen				
	As an option	Fipio, Ethernet, Modbus Plus, PROFIBUS DP, DeviceNet, Uni-Telway, INTERBUS				
<b>Cards</b> (available as an option)		Encoder interface cards, I/O extension cards, "Controller Inside" programmable card, Encoder emulation card				
<b>Reduction of current harmonics</b>		Integrated DC choke or supplied with the product				
<b>EMC filter</b>	Integrated	C2 EMC up to 5.5 kW				
	As an option	External C2 EMC from 7.5 kW				
<b>Motor power</b>	kW / HP / A	4 / 5 / 10	–	ATV71LD10N4Z	T4	
		5,5 / 7,5 / 14	–	ATV71LD14N4Z	T4	
		5,5 / 7,5 / 27	ATV71LD27M3Z	T5B	–	
		7,5 / 10 / 17	–	–	ATV71LD17N4Z	T5A
		7,5 / 10 / 33	ATV71LD33M3Z	T5B	–	
		11 / 15 / 27	–	–	ATV71LD27N4Z	T5B
		11 / 15 / 54	ATV71LD54M3Z	T6	–	
		15 / 20 / 33	–	–	ATV71LD33N4Z	T5B
		15 / 20 / 66	ATV71LD66M3Z	T6	–	
		22 / 30 / 48	–	–	ATV71LD48N4Z	T7

(1) SoMove setup software : available from 2011. Altivar LIFT is also supported by Powersuite software workshop.

# Altivar 71

0.37...630 kW

0.5...700 HP

## Complex, high-power machines I/O extension and specific cards



Type of card	I/O extension Logic	Extended
Description	<ul style="list-style-type: none"> <li>1 relay logic output ("C/O" contact)</li> <li>4 x 24 VDC positive or negative logic inputs</li> <li>2 x 24 VDC open collector positive or negative logic outputs</li> <li>1 input for PTC probes</li> </ul>	<ul style="list-style-type: none"> <li>1 x 0...20 mA differential current analog input</li> <li>1 software-configurable voltage (0...10 VDC) or current (0...20 mA) analog input</li> <li>2 software-configurable voltage (<math>\pm 10V</math>, 0...10 VDC) or current (0...20 mA) analog inputs</li> <li>1 relay logic output ("C/O" contact)</li> <li>4 x 24 VDC positive or negative logic inputs</li> <li>2 x 24 VDC open collector positive or negative logic outputs, 1 input for PTC probes, 1 frequency control input</li> </ul>
Reference	VW3A3201	VW3A3202

3

## "Controller Inside" programmable card



Type of card	Programmable "Controller Inside"
Description	<ul style="list-style-type: none"> <li>10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders</li> <li>2 analog inputs, 6 logic outputs, 2 analog outputs, a master port for the CANopen bus, a PC port for programming with the PS 1131 software workshop</li> </ul>
Reference	VW3A3501

## Encoder interface cards



Type of card	Encoder interface with		
	Differential outputs (RS422)	Open collector outputs (NPN)	Push-pull outputs
<b>Operating frequency</b>	300 kHz		
<b>Reference</b>	5 V	VW3A3401	–
	12 V	–	VW3A3403
	15 V	VW3A3402	VW3A3404
	24 V	–	VW3A3407

3

Type of card (1)	Resolver	Universal	Sincos Absolute	Incremental with emulation
<b>Speed feedback resolution</b>	12 bits	16 bits	16 bits	10,000
<b>Encoder type supported</b>	Resolver with 2, 4, 6 or 8 poles	"SinCos, SinCosHiperface EnDat, SSI"	Sincos Absolute	"Incremental RS 422 - 5 V or 15 V"
<b>References</b>	VW3A3408	VW3A3409	VW3A3410	VW3A3411

Supported by Altivar LIFT and Altivar71 with S383 firmware version

# Notes



Communication tools	Remote display terminal (IP54 & IP65)	Remote graphic display terminal	Multi-loader	Simple Loader	Dongle Bluetooth® (TM)
Altistart 01					
Altistart 22	x				x
Altistart 48	x				
Altivar 12	x		x	x	x
Altivar 212		x	x	x	x
Altivar 312	x	x	x	x	x
Altivar 31C	x			x	x
Altivar 32	x	x	x	x	
Altivar LIFT		x	x	x	x
Altivar 61		x	x	x	x
Altivar 71		x	x	x	x
Altivar 61 Plus		x	x	x	x
Altivar 71 Plus		x	x	x	x
Altivar 61Q (Water Cooled)		x	x	x	x
Altivar 71Q (Water Cooled)		x	x	x	x

Accessories & Options	ALTISTART			ALTIVAR												
	01	22	48	12	21	212	312	31C	32	61	71	LIFT	61 Plus	71 Plus	61Q	71Q
Panel cut-out adaptor for mounting control unit at 90°									x							
Ferrite suppressors for downstream contactor opening				x			x	x								
Additional EMC filter				x	x		x	x	x	x	x		x	x	x	x
Passive filters										x	x		x	x	x	x
Sinus filters										x	x		x	x	x	x
Line choke			x	x			x	x	x	x	x		x	x	x	x
Motor chokes				x				x	x	x	x		x	x	x	x
EMC conformity kit				x												
UL Type 1 conformity kit							x				x					
DNV kit			x								x					
Mechanical base kit for mounting GV2 circuit-breaker									x							
Mounting plates				x			x		x	x			x		x	
Braking resistors for vertical movements											x					
Braking resistors and braking units				x			x		x	x	x		x	x	x	x
References	If options or accessories not listed, please refer to the Schneider Electric catalogue.															

For Altivar 1000 or 1100, please consult our Customer Care Centre.



Industrial protocols	ALTISTART			ALTIVAR													
	01	22	48	12	212	312	31C	32	61	71	LIFT	61 Plus	71 Plus	61Q	71Q	1000	1100
Canopen						●	●	●	●	●	●	●	●	●	●	○	
CANopen Daisy chain						○											
CC-Link									○	○	○	○	○	○	○		
DeviceNet			Δ			○	○	○	○	○	○	○	○	○	○	○	
EtherCAT			Δ						●	●							
Ethernet			Δ													●	
Ethernet IP								○	○	○	○	○	○	○	○		
Ethernet TCP/IP							○		○								
Fipio			○			○	○		○	○	○	○	○	○	○		
INTERBUS S									○	○	○	○	○	○	○		
Modbus		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Modbus Plus									○	○	○	○	○	○	○		
Modbus TCP						○		○	○	○	○	○	○	○	○		
Modbus/ Unitelway									○	○	○	○	○	○	○		
PROFIBUS DP			Δ			○	○	○	○	○	○	○	○	○	○	●	●
PROFIBUS DP V0								○	○	○	○	○	○	○	○		
PROFIBUS DP V1								○	○	○	○	○	○	○	○		
References	Please refer to the Schneider Electric catalogue or consult our Customer Care Centre.																

HVAC protocols	ALTISTART			ALTIVAR													
	01	22	48	12	212	312	31C	32	61	71	LIFT	61 Plus	71 Plus	61Q	71Q	1000	1100
Lonworks					○				○			○		○			
Metasys N2					●				○			○		○			
Apogee FLN					●				○			○		○			
BACnet					●				○			○		○			
References	Please refer to the Schneider Electric catalogue or consult our Customer Care Centre.																

● Embedded      ○ Option      Δ Gateway

## Communication modules



Altistart 48/Altivar 31 starters/drives		Ethernet/Modbus	DeviceNet/Modbus	Fipio/Modbus	PROFIBUS DP/Modbus	
Parameter setting		–	–	–	Standard configurator	ABC configurator program
References	Bridge	TSXETG100	–	–	–	–
	Gateway	–	LUFP9	LUFP1	LA9P307	LUFP7
Cable references	L = 0.3 m	–	VW3A8306R03	VW3A8306R03	–	VW3A8306R03
	L = 1 m	–	VW3A8306R10	VW3A8306R10	VW3P07306R10	VW3A8306R10
	L = 3 m	VW3A8306D30	VW3A8306R30	VW3A8306R30	–	VW3A8306R30

# Selection guide

3

	⇒ <i>Applications :</i> Lexium 32 is the perfect drive system for applications involving high-precision, dynamic positioning.	⇒ <i>Applications :</i> Lexium SDx stepper drives and motors are used for short-distance positioning applications requiring maximum accuracy and high torque.		
	<b>Servo Drives</b>	<b>Servo Motors</b>	<b>Stepper Drives</b>	<b>Stepper Motors</b>
	<b>Lexium 32</b>	<b>Lexium BMH</b>	<b>Lexium SD2</b>	<b>Lexium BRS2</b>
				
		<b>Lexium BSH</b>	<b>Lexium SD3</b>	<b>Lexium BRS3</b>
				
<b>Machines</b>	Packaging machines Material handling machines Material working machines Assembling machines		Printing machines Labelling machines Screen printing machines	
<b>Description</b>	The Lexium 32 servo range consists of three high-performance book-size servo drive models – Lexium 32 Compact, Lexium 32 Advanced and Lexium 32 Modular – and two motor families – the versatile medium-inertia Lexium BMH and the dynamic low-inertia Lexium BSH.		The Lexium SDx stepper motor drive range consists of two high-precision stepper drive lines – the three-phase stepper drives Lexium SD3 and the two-phase stepper drives Lexium SD2. These drive lines are complemented by two perfectly matched stepper motor families – Lexium BRS3 three-phase stepper motors and Lexium BRS2 two-phase stepper motors.	
<b>Power range</b>	0.15...7 kW		up to 750 W	
<b>Voltage range</b>	115...240 VAC, 400...480 VAC		24...48 VDC, 115...240 VAC	
<b>Speed</b>	up to 8000 rpm		up to 1000 rpm	
<b>Torque</b>	up to 84 Nm		up to 16.5 Nm	
<b>Communication interfaces</b>	CANopen, CANmotion, PROFIBUS DP, DeviceNet, EtherNet/IP		CANopen, CANmotion, PROFIBUS DP or Pulse/Direction	
	<b>Safety function (STO)</b> on board Enhanced Safety Module (SS1, SS2, SLS, SOS) Encoder module for digital and analog encoders and resolvers		<b>Safety function (STO)</b> on board (Lexium SD3 28)	



⇒ Applications :

Lexium Integrated Drives allow for extremely space-saving decentralised motion solutions.

⇒ Applications :

The Lexium Linear Motion products are designed for maximum flexibility, performance and cost-effectiveness. This range offers products for all linear movements in the automation industry from single-axis to multi-axis systems.

**Integrated Drives**

**Lexium ILA**



**Lexium ILE**



**Lexium ILS**



**Lexium ILP / ILT**



**Linear Motion**

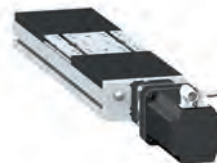
**Lexium PAS**



**Lexium CAS**



**Lexium TAS**



**Lexium MAX**



Format adjustment  
Printing machines  
Material handling machines

Material handling machines  
Material working machines  
On-the-fly working machines  
Assembling machines

The Lexium ILx Integrated Drives comprise motor, positioning controller, power electronics, fieldbus and "Safe Torque Off" safety function in an extremely compact single device. Lexium ILx Integrated Drives are available with all important motor technologies (servo, brushless DC, stepper).

Lexium Linear Motion is a comprehensive linear motion range comprising Lexium PAS portal axes, Lexium TAS linear tables, Lexium CAS cantilever and telescopic axes and Lexium MAX multi-axis systems.

100...370 W  
24...48 VDC, 115 to 240 VAC  
up to 9000 rpm  
up to 12 Nm

RS485, CANopen, PROFIBUS DP, DeviceNet, EtherNet/IP, EtherCAT, Ethernet POWERLINK, Modbus TCP, Pulse/Direction

**Safety function (STO)** on board  
(Lexium ILA, Lexium ILE, Lexium ILS)

Stand-alone device with controller inside (Lexium ILP)

**Single axes:**

Stroke up to 5.5 m  
Load up to 150 kg  
Speed up to 8 m/s

**Multi axes:**

Stroke up to 5.5 m  
Load up to 130 kg  
Speed up to 4 m/s  
Available as individual components or completely pre-assembled, customised systems with drives and motors

# Selection guide

⇒ *Applications :*

Lexium Motion Controllers can be used as a stand-alone motion and automation controllers for machines without a PLC or as pure motion controllers for machines in which a PLC takes care of automation control.

## Axis controller

### Lexium Motion Controllers



3

#### Machines

Packaging machines  
Material handling machines  
Material working machines  
Assembling machines

#### Description

The compact LMC Lexium Motion Controllers are used to control multiple synchronised axes via a motion bus and feature high performance coupled with economy.

#### Technical information

Synchronisation of up to 4 axes in 2 ms  
Synchronisation of up to 8 axes in 4 ms  
  
PLCopen function blocks single / multi axis control  
Application function blocks (Rotary knife, Flying shear, Clamping, Grouping/Ungrouping)

#### Communication interfaces

Modbus, CANmotion, Profibus DP, DeviceNet, Ethernet TCP/IP (for programming)

# Lexium Controller Motion control Motion controller



Controller type		Optimised	Standard	Extended	
Drive synchronisation	Up to 4 axes	2 ms			
CAN Motion bus	Up to 8 axes	4 ms			
Interpolation of drive position loops		250 µs			
Internal memory	RAM	1 MB			
	Flash Eeprom	1 MB			
	Protected RAM	60 Kb			
Expert application	Application function blocks	yes			
	Single-axis PLCopen control	yes			
	Multi-axis PLCopen control	yes			
	2D interpolation	yes			
Number of logic inputs		8 + 4 Fast inputs			
Number of logic outputs		8	8		
Communication	Modbus	yes	yes	yes	yes
	CANopen automation	–	yes	yes	yes
	Ethernet TCP/IP	–	yes	yes	yes
	Profibus DP V1	–	–	yes	–
	Device Net	–	–	–	yes
Reference		LMC10	LMC20	LMC20A1307	LMC20A1309

3

## Software solutions



### Easy Motion... for configuring motion control functions

- Axis parameter setting
- Drive and controller adjustment and diagnostics
- Creation of position registers via the Teach function
- Management of axis operating modes and manual control
- Configuration of positioning tasks
- Editing cam profiles
- Application back up and restore



### Motion Pro... for configuring and programming motion control functions

- Retains the same benefits as Easy Motion mode for motion control
- Creates the whole application, control system function and motion control function, using the programming editor conforming to standard IEC 61131
- Saves the machine signature
- Protection of application programs



Main functions		Lexium 32 Compact	Lexium 32 Advanced	Lexium 32 Modular
Communication	Integrated	Modbus serial link Pulse train	Modbus serial link CANopen, CANmotion machine bus	Modbus serial link Pulse train
	As an option	–	–	CANopen, CANmotion machine bus, DeviceNet, EtherNet/IP, PROFIBUS DP
	Operating modes	Manual mode (JOG) Electronic gearbox Speed control Current control	Homing Manual mode (JOG) Speed control Current control Position control	Homing Manual mode (JOG) Motion sequence Electronic gearbox Speed control Current control Position control
	Functions	Auto-tuning, monitoring, stopping, conversion –	Stop window Rapid entry of position values	Stop window Rapid entry of position values Rotary axes Position register
24 V $\overline{\text{N}}$ logic inputs		6, reassignable	3, reassignable	4, reassignable
24 V $\overline{\text{N}}$ capture inputs (1) (2)		–	1	2
24 V $\overline{\text{N}}$ logic outputs (1)		5, reassignable	2, reassignable	3, reassignable
Analog inputs		2	–	–
Pulse control input		1, configurable as: RS 422 link 5 V or 24 V push-pull 5 V or 24 V open collector		
ESIM PTO output		RS 422 link		
Safety functions	Integrated	"Safe Torque Off" STO		
	As an option	–	–	Safe Stop 1 (SS1) and Safe Stop 2 (SS2) Safe Operating Stop (SOS) Safe Limited Speed (SLS)
Sensor	Integrated	SinCos Hiperface® sensor		
	As an option	–	–	Resolver encoder Analog encoder Digital encoder
Architecture		Control via: Logic or analog I/O	Control via: Motion controller via CANopen and CANmotion machine bus	Control via: Schneider Electric or third-party PLCs via communication buses and networks
Type of servo drive		LXM 32C	LXM 32A	LXM 32M



### Main functions

<b>Application type</b>		High load, With robust adjustment of the movement	High dynamic range, Power density
<b>Flange size</b>		70, 100, 140 and 205 mm	55, 70, 100 and 140 mm
<b>Continuous stall torque</b>		1.2 to 84 Nm	0.5 to 33.4 Nm
<b>Encoder type</b>		Single turn SinCos: 32,768 points/turn and 131,072 points/turn Multiturn SinCos: 32,768 points/turn x 4096 turns and 131,072 points/turn x 4096 turns	Single turn SinCos: 131,072 points/turn Multiturn SinCos: 131,072 points/turn x 4096 turns
<b>Degree of protection</b>	Casing	IP 65 (IP 67 conformity kit as an option)	
	Shaft end	IP 50 or IP 65 (IP 67 conformity kit as an option)	
<b>Type of servo motor</b>		<b>Lexium BMH</b>	<b>Lexium BSH</b>



### Lexium 32 servo drive/BMH or BSH servo motor combinations

Servo motors				Lexium 32C, 32A and 32M servo drives			
BMH (IP50, IP65 or IP67)				BSH (IP50, IP65 or IP67)			
				Lexium 32C, 32A and 32M servo drives			
				100...120 V single-phase supply voltage with integrated EMC filter			
				LXM 32U90M2			
				Continuous output current: 3 A rms			
				Nominal operating point			Stall torques
Type of servo motor	Rotor inertia	Type of servo motor	Rotor inertia	Nominal torque	Nominal speed	Nominal power	$M_0/M_{max}$
	kgcm <sup>2</sup>		kgcm <sup>2</sup>	Nm	rpm	W	Nm/Nm
		BSH 0551T	0.06	0.49	3000	150	0.5/1.5
		BSH 0552T	0.10	0.77	3000	250	0.8/1.9
		BSH 0553T	0.13				
BMH 0701T	0.59						
		BSH 0701T	0.25				
		BSH 0702T	0.41				
BMH 0702T	1.13						
BMH 0703T	1.67						
		BSH 1001T	1.40				
BMH1001T	3.2						
BMH1002T	6.3						



### Lexium 32 servo drive/BMH or BSH servo motor combinations

Servo motors				Lexium 32C, 32A and 32M servo drives			
BMH (IP50, IP65 or IP67)				BSH (IP 50, IP65 or IP67)			
				Lexium 32C, 32A and 32M servo drives			
				200...240 V single-phase supply voltage with integrated EMC filter			
				LXM 32U45M2			
				Continuous output current: 1.5 A rms			
				Nominal operating point			Stall torques
Type of servo motor	Rotor inertia	Type of servo motor	Rotor inertia	Nominal torque	Nominal speed	Nominal power	$M_0/M_{max}$
	kgcm <sup>2</sup>		kgcm <sup>2</sup>	Nm	rpm	W	Nm/Nm
		BSH 0551T	0.06	0.45	6000	300	0.5/1.4
		BSH 0552T	0.10				
		BSH 0553T	0.13				
		BSH 0701T	0.25				
BMH 0701T	0.59						
		BSH 0702T	0.41				
		BSH 0703T	0.58				
BMH 0702T	1.13						
		BSH 1001T	1.40				
BMH 0703T	1.67						
BMH 1001T	3.2						
		BSH 1002T	2.31				
BMH 1002T	6.3						
BMH 1003T	9.4						
BMH 1401P	16.5						

LXM 32●U18M2 Continuous output current: 6 A rms				LXM 32●D30M2 Continuous output current: 10 A rms			
Nominal operating point			Stall torques	Nominal operating point			Stall torques
Nominal torque	Nominal speed	Nominal power	$M_o/M_{max}$	Nominal torque	Nominal speed	Nominal power	$M_o/M_{max}$
Nm	rpm	W	Nm/Nm	Nm	rpm	W	Nm/Nm
1.14	3000	350	1.2/3.3				
1.35	2500	350	1.4/4.2				
1.36	2500	350	1.4/3.5				
				2.07	2500	550	2.2/6.1
				2.3	2500	600	2.5/6.4
				3.1	2000	650	3.4/8.7
				2.75	2500	700	3.3/6.3
				3.3	2000	700	3.4/8.9
				3.5	2000	750	6/10.3

LXM 32●U90 M2 Continuous output current: 3 A rms				LXM 32●D18M2 Continuous output current: 6 A rms				LXM 32●D30M2 Continuous output current: 10 A rms			
Nominal operating point			Stall torques	Nominal operating point			Stall torques	Nominal operating point			Stall torques
Nominal torque	Nominal speed	Nominal power	$M_o/M_{max}$	Nominal torque	Nominal speed	Nominal power	$M_o/M_{max}$	Nominal torque	Nominal speed	Nominal power	$M_o/M_{max}$
Nm	rpm	W	Nm/Nm	Nm	rpm	W	Nm/Nm	Nm	rpm	W	Nm/Nm
0.74	6000	450	0.8/2.5								
0.84	6000	550	1.2/3								
0.94	5000	500	1.3/3.5								
1.1	4000	450	1.4/4								
				1.8	5000	950	2.2/7.2				
				2.1	4000	900	2.6/7.4				
				2.1	4000	900	2.5/7.4				
				2.2	4000	900	2.7/7.5				
				2.9	3000	900	3.4/10.2				
				2.8	3000	900	3.4/10.2				
								3.7	4000	1500	5.8/16.4
								4.6	3000	1450	6/18.4
								5.6	2500	1450	8.2/22.8
								6.9	2000	1450	10.3/30.8



## Lexium 32 servo drive/BMH or BSH servo motor combinations

Servo motors

Lexium 32C, 32A and 32M servo drives

380...480 V three-phase supply voltage with integrated EMC filter

**BMH**  
(IP50, IP65 or IP67)

**BSH**  
(IP50, IP 65 or IP67)

**LXM 32●U60N4**

Continuous output current: 1.5 A rms

**LXM 32●D12N4**

Continuous output current: 3 A rms

Type of servo motor	Rotor inertia kgcm <sup>2</sup>	Type of servo motor	Rotor inertia kgcm <sup>2</sup>	Nominal operating point			Stall torques M <sub>v</sub> /M <sub>max</sub>	Nominal operating point			Stall torques M <sub>v</sub> /M <sub>max</sub>
				Nominal torque Nm	Nominal speed rpm	Nominal power W		Nominal torque Nm	Nominal speed rpm	Nominal power W	
		BSH 0551P	0.06	0.48	6000	300	0.5/1.5				
		BSH 0552P	0.10	0.65	6000	400	0.8/2.5				
		BSH 0553P	0.13	0.65	6000	400	1.05/3.5				
BMH 0701P	0.59			1.1	3000	350	1.2/4.2				
BMH 0701P	0.59							1.3	5000	700	1.4/4.2
		BSH 0701P	0.25					1.32	5000	700	1.4/3.5
		BSH 0702P	0.41					1.64	5000	850	2.2/7.6
BMH 1001P	3.2							1.9	4000	800	3.3/10.8
BMH 0702P	1.13							2.2	3000	700	2.5/7.4
BMH 0703P	1.67										
		BSH 0703P	0.58								
		BSH 1001P	1.40								
BMH 1001P	3.2										
BMH 1002P	6.3										
		BSH 1002P	2.31								
BMH 1003P	9.4										
		BSH 1003P	3.2								
BMH 1401P	16.5										
		BSH 1004P	4.2								
		BSH 1401P	7.4								
BMH 1402P	32.0										
		BSH 1402T	12.7								
		BSH 1403T	17.9								
BMH 1403P	47.5										
		BSH 1404P	23.7								
BMH 2051P	71.4										
BMH 2052P	129										
BMH 2053P	190										







### Multi-Loader configuration tool

**Use** For downloading configurations from a PC or drive and duplicating them on another drive. The drives do not need to be powered-up.  
Supplied with:  
1 cordset equipped with 2 RJ45 connectors  
1 cordset equipped with one type A USB connector and one mini B USB connector  
1 x 2 GB SD memory card  
1 x female/female RJ 45 adaptor  
4 AA 1.5 V LR6 round batteries

**Reference** **VW3 A8 121**



### Single memory card

### Pack of 25 memory cards

**Use** Used to store parameters of the Lexium 32 servo drive. Another Lexium 32 servo drive can be commissioned immediately if the application is undergoing maintenance or duplication.

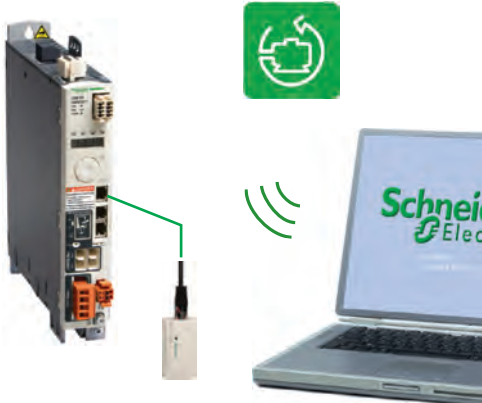
**Reference** **VW3 M8 705**

**VW3 M8 704**

### Memory card recorder

**Use** Writes data from the Lexium 32 servo drive to the memory card. This recorder is not supplied by Schneider Electric.

**Reference** **See the User's manual**



### SoMove setup software

The SoMove setup software is used to configure, adjust, debug and maintain the Lexium 32 servo drive, as for all other Schneider Electric variable speed drives and starters. It communicates via Bluetooth® wireless link with the servo drive, which is equipped with the Modbus-Bluetooth® adaptor (VW3 A8 114).

### SoMove Mobile application for mobile phone

The SoMove Mobile software converts any compatible mobile phone into a remote graphic display terminal, offering an identical Human-Machine Interface. Particularly suitable for on-site or remote maintenance operations, the SoMove Mobile software can be used to print out and save configurations, import them from a PC and export them to a PC, or to a servo drive equipped with the Modbus adaptor via the Bluetooth® wireless link.



## Communication modules

Lexium 32M can be connected to the following communication buses and networks: CANopen and CANmotion, DeviceNet, Profibus DP V1, EtherNet/IP

Reference	Description	Part Number
	CANopen / CANmotion module with 2 * RJ 45 connectors	VW3 A3 608
	CANopen / CANmotion module with SUB-D 9 connector	VW3 A3 618
	DeviceNet module	VW3 M3 301
	Profibus DP V1 module	VW3 A3 607
	EtherNet/IP module	VW3 A3 616
	Module CANopen / CANmotion avec bornier 5 points de vis	VW3 A3 628
	Module EtherCAT with 5 points screw terminal	VW3 A3 601



## Second encoder modules

Lexium 32M has an input for an additional encoder to connect third party motor (motor encoder) or to improve positioning accuracy (machine encoder)

Reference	Description	Machine	Motor
	Module for resolver encoder		x
	Module for digital encoder (A/B/I, BiSS, EndDat 2.2, SSI)	x	
	Module for analog encoder (1 Vpp/Hall, 1 Vpp, Hiperface)	x (Hiperface only)	x



## Safety module

eSM safety module allows Lexium 32M servo drives to access additional IEC/EN 61800-5-2 safety functions: SS1, SS2, SLS, SOS

Reference	Description	Part Number
	eSM safety module allows	VW3 M3 501

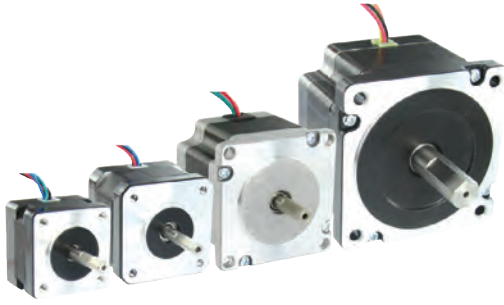
## Connection elements

### Power cordsets

Description	Cables equipped with one M23 industrial connector (servo motor end)	Cables equipped with one M40 industrial connector (servo motor end)	
From servo motor	BMH 070●●, BMH 100●●, BMH 1401P, BSH 055●●, BSH 070●●, BSH 100●●, BSH 1401P	BMH 1402P, BMH 1403P	BMH 205●P, BSH 1402T, BSH 1403T, BSH 1404P
To servo drive	LXM 32●●●●●●	LXM 32●D72N4	LXM 32●D72N4
Composition	[(4 x 1.5 mm <sup>2</sup> ) + (2 x 1 mm <sup>2</sup> )]	[(4 x 2.5 mm <sup>2</sup> ) + (2 x 1 mm <sup>2</sup> )]	[(4 x 4 mm <sup>2</sup> ) + (2 x 1 mm <sup>2</sup> )]
Length	3 m	3 m	3 m
Reference	VW3 M5 101 R30	VW3 M5 102 R30	VW3 M5 103 R30

### Encoder cordsets

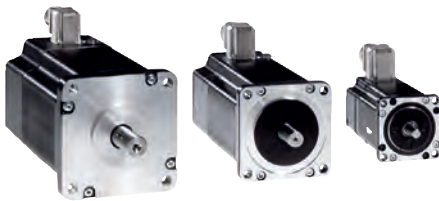
Description	SinCos Hiperface® encoder cables equipped with an M23 industrial connector (servo motor end) and an RJ45 connector with 8 + 2 contacts (servo drive end)
From servo motor	BMH ●●●●●, BSH ●●●●●
To servo drive	LXM 32●●●●●●
Composition	[3 x (2 x 0.14 mm <sup>2</sup> ) + (2 x 0.34 mm <sup>2</sup> )]
Length	3 m
Reference	VW3 M8 102 R30



### Assignment of BRS2 2-phase stepper motors and SD21 stepper motor drives

BRS2 2-phase stepper motors	SD21●●U20C	SD21●●U50C
	24...48 V; 3 A	24...48 V; 5 A
BRS236	0.07 Nm	–
BRS242	0.23...0.53 Nm	–
BRS257	0.64...1.69 Nm	0.64...1.69 Nm
BRS285	–	2.96...9.20 Nm

3



### Assignment of BRS3 3-phase stepper motors and SD3 stepper motor drives

BRS3 3-phase stepper motors	SD326●U25	SD328●U25	SD326●U68	SD328●U68
	115 V / 230 V; 2.5 A; including mains filter		115 V / 230 V; 6.8 A; including mains filter and fan	
BRS368	1.7 Nm / 1.5 Nm		–	
BRS397	2.3 Nm / 2.0 Nm		–	
BRS39A	4.5 Nm / 4.0 Nm		–	
BRS39B	6.8 Nm / 6.0 Nm		–	
BRS3AC	–		13.5 Nm / 12.0 Nm	
BRS3AD	–		19.7 Nm / 16.5 Nm	



### Assignment of stepper motors, stepper motor drives SD3 15

3-phase stepper motors	SD3 15
	24...48 VDC; max. 10 A
<b>Motors with F winding</b>	
BRS 364F	0.46 Nm / 0.40 Nm
BRS 366F	0.92 Nm / 0.80 Nm
BRS 368F	1.50 Nm / 1.30 Nm
BRS 397F	2.00 Nm / 1.85 Nm
BRS 39AF	4.20 Nm / 3.40 Nm
BRS 39BF	5.55 Nm / 4.80 Nm
<b>Motors with H winding</b>	
BRS 364H	0.51 Nm / 0.45 Nm
BRS 366H	1.02 Nm / 0.90 Nm
BRS 368H	1.70 Nm / 1.50 Nm
BRS 397H	2.26 Nm / 2.00 Nm
BRS 39AH	4.80 Nm / 4.00 Nm
BRS 39BH	6.50 Nm / 5.75 Nm



Integrated Drives		Lexium ILA	Lexium ILE	Lexium ILS	Lexium ILP / ILT
<b>Type of process</b>		Dynamic process and accurate positioning	Automatic format adjustment	Short distance movements with accurate positioning	
<b>Type of technology</b>		Integrated drive with servo motor	Integrated drive with dc brushless motor	Integrated drive with three-phase stepper motor	Integrated drive with two-phase stepper motor
<b>Main characteristics</b>		Highly dynamic Compact Integrated holding brake in option	High holding torque without power Integrated gearbox in option	High torque at low speed	
<b>Dynamic</b>		★★★★	★★	★★★	★★★
<b>Precision and stability</b>		★★★★	★★	★★★★	★★★★
<b>Energy saving</b>		★★★★★	★★★★	★★	★★
<b>Motor inertia</b>		Medium			
<b>Control interface</b>	Control signals	Input/output		Pulse/direction Input/output	Pulse/direction Input/output
	Bus and networks	CANopen, PROFIBUS DP, RS 485 serial link, DeviceNet, EtherCAT, Modbus TCP, Ethernet Powerlink, EtherNet/IP			CANopen, RS485
	Motion bus	-			
<b>Association</b>	Nominal power	150...305W	100...350W	100...350W	100...350W
<b>Drive/motor combinations</b>	Nominal speed	500...9000 min <sup>-1</sup>	1500...7000 min <sup>-1</sup>	0...1000 min <sup>-1</sup>	0...1000 min <sup>-1</sup>
<b>Drive characteristics</b>	Nominal torque	0.26...0.78 Nm	0.18...0.5 Nm	0.45...6 Nm	0.11...5.87 Nm
<b>Motor characteristics</b>	Safety function	"Safe Torque Off"			
<b>Motor characteristics</b>	Type of sensor (resolution) (1)	Single turn SinCos encoder (16.384 increments/turn) Multiturn SinCos encoder (16.384 increments/turn × 4096 turns)	Absolute value encoder (12...1380 increments/turn)	Index pulse monitoring	Index pulse monitoring
	Motor flange size	57	66	57, 85	36, 42, 57, 85
<b>Accessories</b>		Cable, Connector kits, Installation sets, Commissioning tools, Planetary gearboxes			Cable, Connector kits, Installation sets, Commissioning tools
<b>References</b>		ILA	ILE	ILS	ILP   ILT



Lexium ILA with Servo Motor	Nominal Torque (Nm)	Maximum Torque (Nm)	Nominal Speed (Rpm)	Maximum Speed (Rpm)	Nominal Power (W)
<b>ILS1 for CANopen, PROFIBUS DP, RS485, Pulse-Direction, Motion Sequence Mode</b>					
ILA1●571P	0.26	0.6	5500	7500	150
ILA1●571T	0.26	0.43	7500	11500	200
ILA1●572P	0.45	0.72	4300	6200	200
ILA1●572T	0.41	0.61	5000	7500	215
<b>ILA2 for DeviceNet, EtherCAT, EtherNet/IP, Modbus TCP, Ethernet Powerlink</b>					
ILA2●571P	0.44	0.62	5100	7000	235
ILA2●571T	0.31	0.45	7000	9000	255
ILA2●572P	0.78	1.62	3400	4300	275
ILA2●572T	0.57	0.85	5100	6800	305



Lexium ILE with included spurwheel gearbox.

Ratios: 18:1, 38:1, 54:1, 115:1

Lexium ILE with included worm gearbox with hollow shaft.

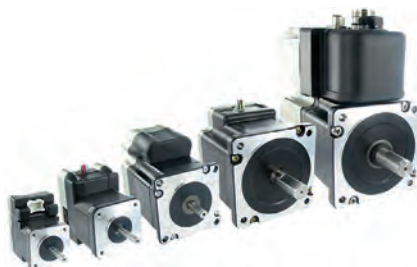
Ratios: 24:1, 54:1, 92:1, 115:1

Lexium ILE with Brushless DC Motor	Nominal Torque (Nm)	Detent Torque (Nm)	Nominal Speed (Rpm)	Maximum Speed (Rpm)
<b>ILE1 for CANopen, PROFIBUS DP, RS485</b>				
ILE1●661	0.24	0.08	4800	5000
ILE1●661 spurwheel gearing	up to 11.0	up to 8.0	44	44
ILE1●661 worm gearing	up to 10.6	up to 16.7	44	44
<b>ILA2 for DeviceNet, EtherCAT, EtherNet/IP, Modbus TCP, Ethernet Powerlink</b>				
ILE2●661	0.26	0.08	6000	7000
ILE2●661 spurwheel gearing	up to 12	up to 9.19	44	44
ILE2●661 worm gearing	up to 10.6	up to 16.7	44	44
ILE2●662	0.5	0.106	5000	7000



Lexium ILS with three-phase Stepper Motor	Maximum Torque (Nm)	Holding Torque (Nm)	Speed (Rpm)
<b>ILS1 for CANopen, PROFIBUS DP, RS485, Pulse-Direction, Motion Sequence Mode</b>			
ILS1●571●	0.45	0.51	1000
ILS1●572●	0.9	1.02	600
ILS1●573●	1.5	1.7	450
ILS1●851●	2.0	2.0	450
ILS1●852●	4.0	4.0	200
ILS1●853P	6.0	6.0	120
ILS1●853T	4.5	4.5	300
<b>ILS1 for CANopen, PROFIBUS DP, RS485, Pulse-Direction, Motion Sequence Mode</b>			
ILS2●571●	0.45	0.51	1100
ILS2●572●	0.9	1.02	900
ILS2●573●	1.5	1.7	600
ILS2●851●	2.0	2.0	600
ILS2●852●	4.0	4.0	380
ILS2●853P	6.0	6.0	200
ILS2●853T	4.5	4.5	300

# Lexium ILP/ILT Motion Control Lexium Integrated Drives



Lexium ILP, Lexium ILT with two-phase Stepper Motor	Nominal Torque (Nm)	Holding Torque (Nm)	Maximum Speed (Rpm)
<b>ILP for RS485 with programmable interface</b>			
ILP2R361	0.11	0.11	1800
ILP2R421	0.19	0.19	1500
ILP2R422	0.33	0.33	1500
ILP2R423	0.39	0.39	1500
ILP2R571	0.63	0.63	1500
ILP2R572	0.86	0.86	1500
ILP2R573	1.44	1.44	1500
ILP2R574	1.77	1.77	1500
ILP2R851	2.13	2.13	1000
ILP2R852	3.12	3.12	1000
ILP2R853	5.87	5.87	1000
<b>ILT for Pulse/Direction, CANopen</b>			
ILT2●361	0.11	0.11	1800
ILT2●421	0.19	0.19	1500
ILT2●422	0.33	0.33	1500
ILT2●423	0.39	0.39	1500
ILT2●571	0.63	0.63	1500
ILT2●572	0.86	0.86	1500
ILT2●573	1.44	1.44	1500
ILT2●574	1.77	1.77	1500
ILT2●851	2.13	2.13	1000
ILT2●852	3.12	3.12	1000
ILT2●853	5.87	5.87	1000

# Lexium Linear Motion Motion Control Linear axes



Product		Lexium PAS B	Lexium PAS S
Axis type		Portal axes	
Movement	Number of directions	1	
	Movement type	Typically horizontal	
	Position of the load	On carriage	
Drive		Toothed belt	Ballscrew
Type of guide		Ball or roller	Ball
Main characteristics		High dynamic response, Long stroke length, High positioning speed	High precision movement (positioning, repeatability, guiding), High feed forces, High rigidity
Dynamic response		★★★★★	★★★
Precision		★★★	★★★★★
Maximum payload		100 kg	100 kg
Maximum driving force		2600 N	4520 N
Maximum speed of movement of the load		8 m/s	1.25 m/s
Maximum working stroke		5500 mm	3000 mm
Repeatability		± 0.05 mm	± 0.02 mm
Options		Choice of guide type: Ball (for applications requiring high forces and torques) or roller (simple, cost-effective solution), Wide range of sensors, Choice of carriage type for adapting to the load, Option to add carriages, Protective metal strip.	Choice of pitch, Protective metal strip, Wide range of sensors, Choice of carriage type for adapting to the load, Option to add carriages, Option to add ballscrew supports for longer axes
Reference		PAS 4●B	PAS 4●S

## Multi-axis systems

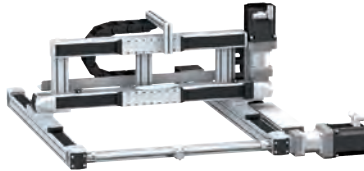


Product		Lexium MAX H	Lexium MAX S
Axis type		Double portal axes	
Movement	Number of directions	1	
	Movement type	Combination of two parallel axes	
	Position of the load	On two parallel carriages	
Multi-axis system type		PAS 4●B axes + PAS 4●H support axis (driven by the load)	PAS 4●B + PAS 4●B axes (shaft-driven)
Drive		Toothed belt on one axis	Toothed belt on both axes
Type of guide		Ball or roller	Ball or roller
Main characteristics		Long stroke length, High dynamic response, High precision movement (positioning, guiding)	Long stroke length, High precision movement (positioning, guiding), High feed forces
Maximum payload		250 kg	300 kg
Maximum working stroke	On the X-axis	5500 mm	
	On the Y-axis	–	
	On the Z-axis	–	
Options		Choice of guide type: Ball (for applications requiring high forces and torques) or roller (simple, cost-effective solution), Protective metal strip, Anti-corrosion version, Anti-static belt, Wide range of sensors, Several different motor mounting options, Variable distance between the two axes	
Reference		MAX H	MAX S





Lexium TAS	Lexium CAS 4	Lexium CAS 3	Lexium CAS 2
Linear tables	Cantilever axes with mobile structure on profile	Cantilever axes with mobile structure on parallel rods	Telescopic axes
1			
Typically horizontal	Typically vertical		Typically horizontal
On carriage	On the side of the profile or on the 2 end blocks	On the 2 end blocks	On carriage
Ballscrew	Toothed belt	Toothed belt or rack	Toothed belt
Double, ball	Ball or roller	Ball	Ball or roller
High precision movement (positioning, repeatability, guiding), High feed forces, High rigidity, Feed movement without mechanical backlash	Long stroke length, High feed forces, Option to mount the load on the side of the profile or on the end blocks, High rigidity	Compact, Mobile structure with light travel weight	Long stroke length from a compact unit, High rigidity, High dynamic response
★★	★★★★	★★★★	★★★★
★★★★★	★★★	★★★	★★
150 kg	50 kg	18 kg	35 kg
2580 N	2150 N	705 N	1500 N
1 m/s	3 m/s	3 m/s	3 m/s
1500 mm	1200 mm	500 mm	2400 mm
± 0.02 mm	± 0.05 mm	± 0.05 mm	± 0.1 mm
Choice of pitch , Several different motor mounting options	Choice of guide type: Ball (for applications requiring high forces and torques) or roller (simple, cost-effective solution), Protective metal strip, Anti-corrosion version, Wide range of sensors	Anti-corrosion version, Anti-static belt	Choice of guide type: Ball (for applications requiring high forces and torques) or roller (simple, cost-effective solution), Choice of carriage type for adapting to the load
TAS 4	CAS 4	CAS 3	CAS 2



Lexium MAX P	Lexium MAX R2	Lexium MAX R3
Linear positioners	Portal robots	
2		3
Horizontal and vertical: Combination of one X-axis and one Z-axis	Horizontal: Combination of two perpendicular axes X and Y	Horizontal and vertical: Combination of two perpendicular axes X and Y and one Z-axis
On the side or on the end blocks of the Z-axis profile	On the Y-axis carriage	On the side or on the end blocks of the Z-axis profile
MAX S + CAS 4 axes MAX S + CAS 3 axes	MAX S + MAX H axes MAX S + PAS 4•B axes	MAX S + MAX H + CAS 4 axes MAX S + MAX H + CAS 3 axes
Toothed belt on each axis		
Ball or roller		
Dynamic load positioning	Long stroke length on both axes	Long stroke length on three axes
50 kg	130 kg	50 kg
5500 mm		
–	1500 mm	1500 mm
1200 mm	–	1200 mm
Choice of guide type: Ball (for applications requiring high forces and torques) or roller (simple, cost-effective solution), Wide range of sensors Supplied as standard: Protective metal strip , Anti-corrosion version		
MAX P	MAX R•2	MAX R•3

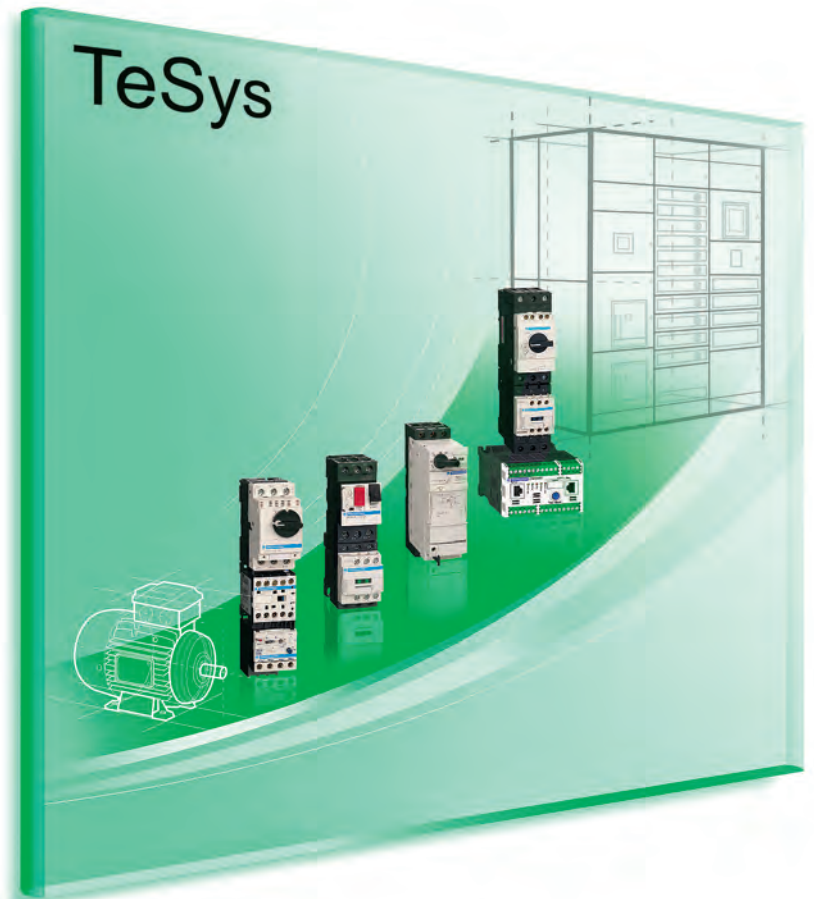
3

# Motor control

TeSys range provide you greater *simplicity, compactness, openness* and *flexibility*  
... so many enhancements and new items to aid your productivity.

*Accurate and reliable control of motors*

# 4



Increase your productivity, with our solutions which help to simplify set-up.

## Motor starters

- Ready-to-use component combinations, designed to work together in perfect harmony.
- Safe operation and level of coordination guaranteed by a major manufacturer.

## Power circuit control

- A wide range of components.
- Solutions for a variety of power control applications: heating, changeover contactor pairs, resistive loads, upstream protection.

# Contents

New

## TeSys Motor starters up to 65 A



The new **TeSys GV3** Type E Starters, **LC1D 40/50/65** contactors, **LRD3** thermal relays are equipped with the new terminal block:

EverLink



Long lasting connection quality. Schneider Electric patented technology.

## TeSys T Motor management system



TeSys protected

**TeSys T** is an advanced motor management and protection system. It is able to guard against all motor malfunctions: overload, current peak, excessive consumption, etc.

## TeSys U Communication modules



With open communication across CANopen, Profibus DP, Modbus, AS-interface, Advantys STB, DeviceNet and Ethernet networks, **TeSys U has openness in mind.**

## Motor control components

### TeSys contactors ..... 4/2 to 4/11

- Contactors, **TeSys K, D, F, B**
- Variable composition contactors, **TeSys CV**

### TeSys protection components ..... 4/12 to 4/25

- Thermal overload relays, **LR2K, LDR**
- Electronic thermal overload relays, **LR9**
- Electronic protection relays, **LT3**
- Motor management system, **TeSys T**
- Manual motor starters, group & type E, **GV2, GV3, GV7**
- Motor disconnect switches, **Vario**
- Fuse carriers, **DK, LS1**
- Disconnect switches, fusible & non-fused, **GS, LK**

### TeSys starters ..... 4/26 to 4/31

- Type E self protected starter, **TeSys U**
- Controller, **TeSys U**
- Enclosed motor starters, “**Instakits**”

### TeSys installation system ..... 4/32 to 4/33

- For motor starter components with spring terminals, **TeSys Quickfit** technology

### TeSys Application Information ..... 4/34 to 4/35

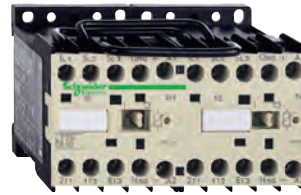
- Group motor, Type E, Elevator ratings, Safety applications

## Components for power control applications ..... 4/36 to 4/42

- Heating, 3 and 4 pole resistive loads changeover contactor pairs, **TeSys K, D, F, B**
- Industrial control relays, **CA2/3/4K, CAD**

# TeSys K Contactors

## 0.5...10 HP



### Connections

#### ■ screw clamp terminals

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

#### ■ 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 U<sub>c</sub>) (0.85–1.1 U<sub>c</sub> 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	<b>J7</b>	<b>Z7</b>	<b>B7</b>	<b>C7</b>	<b>D7</b>	<b>E7</b>	<b>F7</b>	<b>FE7</b>	<b>G7</b>	<b>FC7</b>	<b>L7</b>	<b>M7</b>	<b>P7</b>	<b>U7</b>
Volts	256	277	380/400	400	400/415	440	480	500	575	600	660/690			
50/60 Hz	<b>W7</b>	<b>UE7</b>	<b>Q7</b>	<b>V7</b>	<b>N7</b>	<b>R7</b>	<b>T7</b>	<b>S7</b>	<b>SC7</b>	<b>X7</b>	<b>Y7</b>			

Example of complete catalog number: **LC1K0910G7**

#### dc supply

**Contactors LP1K and LP2K** (0.8–1.15 U<sub>c</sub>)

Volts	12	20	24	36	48	60	72	100	110	125	155	174	200	220	230	240	250
Code	<b>JD</b>	<b>ZD</b>	<b>BD</b>	<b>CD</b>	<b>ED</b>	<b>ND</b>	<b>SD</b>	<b>KD</b>	<b>FD</b>	<b>GD</b>	<b>PD</b>	<b>QD</b>	<b>LD</b>	<b>MD</b>	<b>MPD</b>	<b>MUD</b>	<b>UD</b>

#### Low consumption

**Contactors LP4K and LP5K** (0.7–1.30 U<sub>c</sub>), coil suppression as standard

Volts	12	20	24	48	72	110	120
Code	<b>JW3</b>	<b>ZW3</b>	<b>BW3</b>	<b>EW3</b>	<b>SW3</b>	<b>FW3</b>	<b>GW3</b>



## Auxiliary contact blocks

### ■ instantaneous, screw clamp connections

	■ for LC1, LP1-K, LP4			■ for LC1, LP1-K				
Contact arrangement	2N/O	- 2N/C	1N/O 1N/C	4N/O	3N/O 1N/C	2N/C 2N/C	1N/O 3N/C	- 4N/C
Catalog number	LA1-KN20	LA1-KN02	LA1-KN11	LA1-KN40	LA1-KN31	LA1-KN22	LA1-KN13	LA1-KN04

### ■ electronic time delay

Relay outputs, with common point changeover contact,  $\sim$  or  $\equiv$  24...48, 2 A maximum

Control voltage 0.85...1.1Uc

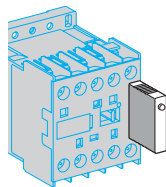
Maximum switching capacity 250 VA or 150 W

Operating temperature -10...+60°C

Reset time: 1.5 s for 0.5 s after the time delay period

Type	On-delay	
Timing range	1...30 s	
Composition	1 C/O (form C)	
Voltage	$\sim$ or $\equiv$ 24...48 V	$\sim$ 110...240
Catalog number	LA2-KT2E	LA2-KT2U

4



## Suppressor modules

### For LC1, LP1-K

Type	Varistor ( $\sim$ and $\equiv$ )				Diode ( $\equiv$ ) + zener		RC ( $\sim$ )
Voltage	12...24 V	32...48 V	50...129 V	130...250 V	12...24 V	32...48 V	220...250 V
Catalog number	LA4-KE1B	LA4-KE1E	LA4-KE1FC	LA4-KE1UG	LA4-KC1B	LA4-KC1E	LA4-KA1U



## Connections

### ■ screw clamp terminals or connectors

<b>Rated operational voltage</b>		690 V				
<b>Rated operational current</b>	le max AC-3	9 A	12 A	18 A	25 A	32 A
	Continuous current @600V max per UL / CSA	20 A	25 A	32 A	40 A	50 A
<b>Horsepower ratings</b>	115/120 V single phase	0.5 hp	1 hp	1 hp	2 hp	2 hp
<b>CSA / UL ratings</b>	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
<b>Contactor type (1)</b>		<b>LC1D09</b>	<b>LC1D12</b>	<b>LC1D18</b>	<b>LC1D25</b>	<b>LC1D32</b>
<b>Reversing contactor type (with mechanical interlock) (1)</b>		<b>LC2D09</b>	<b>LC2D12</b>	<b>LC2D18</b>	<b>LC2D25</b>	<b>LC2D32</b>

### ■ spring terminals up to D32 only

Add the number **3** before the voltage code. Example **LC1D09G7** becomes **LC1D093G7**

### ■ ring tongue

Add the number **6** before the voltage code. Example **LC1D09G7** becomes **LC1D096G7**

### ■ 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 **LC1D09G7** becomes **LC1D099G7**

(1) Catalog number to be completed by adding the coil voltage code from the table below. Example of complete catalog number: **LC1D09G7**.



LC1D183



LC1D186



LC1D189

## Standard control circuit voltages

### ac supply

Volts 24 42 48 110 120 208 220 230 240 380 440 480 575 600

**Contactors LC1D09–D150** (D09 through D32 and D150 available with 50/60 Hz only)

50/60 Hz **B7 D7 E7 F7 G7 LE7 M7 P7 U7 Q7 R7 T7 SC7 X7**

50 Hz **B5 D5 E5 F5 G5 - M5 P5 U5 Q5 R5**

60 Hz **B6 - E6 F6 - L6 M6 - U6 Q6 R6 T6 S6 X6**

### dc supply

Volts 12 24 36 48 60 72 110 125 220 440

**Contactors LC1D09–D65A** (coils with integral suppression device fitted as standard)

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

**Contactors LC1D80**

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 -**

**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**

### Low consumption

Volts dc 5 12 20 24 48 110 120 250

**Contactors LC1D09–D32** (coils with integral suppression device fitted as standard)

0.7–1.25 Uc **AL JL ZL BL EL FL ML UL**



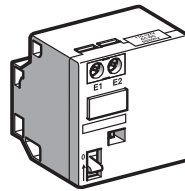
1 000 V on ~ supply, 690 V on === supply

40 A	50 A	65 A	80 A	115 A	150 A
60 A	70 A	80 A	110 A	175 A	200 A
3 hp	3 hp	5 hp	7.5 hp	–	–
5 hp	7.5 hp	10 hp	15 hp	–	–
10 hp	15 hp	20 hp	25 hp	30 hp	40 hp
10 hp	15 hp	20 hp	30 hp	40 hp	50 hp
30 hp	40 hp	40 hp	60 hp	75 hp	100 hp
30 hp	40 hp	50 hp	60 hp	100 hp	125 hp
<b>LC1D40A</b>	<b>LC1D50A</b>	<b>LC1D65A</b>	<b>LC1D80</b>	<b>LC1D115</b>	<b>LC1D150</b>
<b>LC2D40A</b>	<b>LC2D50A</b>	<b>LC2D65A</b>	<b>LC2D80</b>	<b>LC2D115</b>	<b>LC2D150</b>

### 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
<b>■ with an electrical interlocking kit for the contactors</b> LC1D09–D32	LAD9R1V	included
<b>■ with integral electrical interlocking</b> LC1D80 (ac) LC1D80 (dc) LC1D115 and D150	LA9D8069 LA9D8069 LA9D11569	LA9D4002 LA9D8002 LA9D11502
<b>■ without electrical interlocking</b> LC1D09–D32 LC1D40A - D65A LC1D80 (ac) LC1D80 (dc)	LAD9R1 LAD9R3 LA9D8069 LA9D8069	included included LA9D50978 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
LC1D09 - D65A ac or dc, LC1DT20 - DT80 ac or dc	LA6DK10•	B	E	F	M	Q
LC1D80–D150 ac, LC1D80 and D115	LA6DK20•	B	E	F	M	Q



Contact type			instantaneous, connection by screw terminals	
Mounting			Front mounting	Side mounting
Catalog number	Contact	1 "N/O"	LADN10	–
		1 "N/C"	LADN01	–
		1 "N/O" 1 "N/C"	LADN11	LAD8N11
		2 "N/O"	LADN20	LAD8N20
		2 "N/C"	LADN02	LAD8N02
		2 "N/O" 2 "N/C"	LADN22	–
		1 "N/O" 3 "N/C"	LADN13	–
		3 "N/O" 1 "N/C"	LADN31	–
		4 "N/O"	LADN40	–
		4 "N/C"	LADN04	–

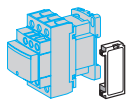


Contact type		Time delay, connection by screw terminals		
Mounting		Front mounting		
Time Range		0.1...3 s	0.1...30 s	10...180 s
Catalog number	On-delay	LADT0	LADT2	LADT4
	Off-delay	LADR0	LADR2	LADR4

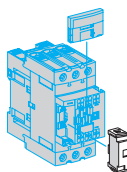
Maximum number of auxiliary contacts that can be fitted

Type	Number of poles and size		Instantaneous						Time delay
			Side mounting			Front mounting			Front mounting
			on left side	on right side	and	1 contact	2 contacts	4 contacts	
AC	3P	LC1D09...D32	1	–	and	–	1	or 1	or 1
		LC1D40A...D65A	1	or 1	and	–	1	or 1	or 1
		LC1D80 (50/60Hz)	1	1	or	2	and 1	or 1	or 1
		LC1D80 (50 or 60Hz)	1	1	and	2	and 1	or 1	or 1
	4P	LC1D115 and D150	1	–	and	–	1	or 1	or 1
		LC1DT20...DT40	1	–	and	–	1	or 1	or 1
		LC1DT60A...D80A	1	or 1	and	–	1	or 1	or 1
DC	3P	LC1D115	1	1	and	1	or 1	or 1	or 1
		LC1D09...D32	–	–		–	1	or 1	or 1
		LC1D40A...D65A	1	or 1	and	–	1	or 1	or 1
		LC1D80	–	–		1	or 1	or 1	or 1
	4P	LC1D115 and D150	1	–	and	–	1	or 1	or 1
		LC1DT20...DT40	–	–		–	1	or 1	or 1
		LC1DT60A...D80A	–	–		–	1	or 1	or 1
DC low consumption	3P	LC1D115	1	1	and	1	and 1	or 1	or 1
	4P	LC1D115	1	1	and	1	and 1	or 1	or 1



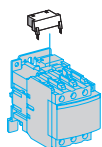


Type of module			RC circuits (Resistor-Capacitor)		
<b>Mounting</b>			Side clip-on	Front clip-on	Screw fixing
<b>For use with contactor</b>			D09...D32(3P) DT20...DT40(4P)	D40A...D65A(3P) DT60A...DT80A(4P)	D80...D150(3P) D40...D115(4P)
<b>Catalog number</b>	<b>Voltage</b>	24...48 VAC	LAD4RCE	LAD4RC3E	LA4DA2E
		50...127 VAC	LAD4RCG	LAD4RC3G	LA4DA2G
		110...240 VAC	LAD4RCU	LAD4RC3U	LA4DA2U
		380...415 VAC	–	LAD4RC3N	LA4DA2N

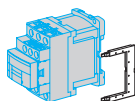


Type of module			Varistors (peak limiting)		
<b>Mounting</b>			Side clip-on	Front clip-on	Screw fixing
<b>For use with contactor</b>			D09...D32(3P) DT20...DT40(4P)	D40A...D65A(3P) DT60A...DT80A(4P)	D80...D150(3P) D40...D115(4P)
<b>Catalog number</b>	<b>Voltage</b>	24...48 VAC	LAD4VE	LAD4V3E	LA4DE2E
		50...127 VAC	LAD4VG	LAD4V3G	LA4DE2G
		110...240 VAC	LAD4VU	LAD4V3U	LA4DE2U
		24...48 VDC	–	–	LAD4DE3E (AC and DC)
		50...127 VDC	–	–	LAD4DE3G (AC and DC)
		110...240 VDC	–	–	LAD4DE3U (AC and DC)

4



Type of module			Flywheel diodes		
<b>Mounting</b>			Side clip-on	Front clip-on	Screw fixing
<b>For use with contactor</b>			D09...D32(3P) DT20...DT40(4P)	D40A...D65A(3P) DT60A...DT80A(4P)	D80...D150(3P) D40...D115(4P)
<b>Catalog number</b>	<b>Voltage</b>	24...250 VDC	LAD4DDL	LAD4D3U	LAD4DC3U



Type of module			Bidirectional peak limiting diode		
<b>Mounting</b>			Side clip-on	Front clip-on	Screw fixing
<b>For use with contactor</b>			D09...D32(3P) DT20...DT40(4P)	D40A...D65A(3P) DT60A...DT80A(4P)	D80...D150(3P) D40...D115(4P)
<b>Catalog number</b>	<b>Voltage</b>	24 VAC	LAD4TB	LAD4T3B	LA4DB2B
		24 VDC	LAD4TBDL	LAD4T3B	LA4DB2S
		72 VAC	LAD4TS	LAD4T3S	LA4DB3B
		72 VDC	LAD4TSDL	LAD4T3S	LA4DB3S
		125 VDC	LAD4TGD	LAD4T3G (AC and DC)	–
		250 VDC	LAD4TUDL	LAD4T3U (AC and DC)	–
		600 VDC	LAD4TXDL	LAD4T3R (AC and DC)	–

# TeSys F

## Contactors

### 30...900 HP



<b>Rated operational current</b>	$I_e$ max AC-3 ( $U_e \leq 440V$ )	185 A	225 A	265 A	330 A	400 A	500 A
	Continuous current @600V max per UL / CSA	200 A	250 A	285 A	370 A	420 A	700 A
<b>Rated operational voltage</b>		1 000 V	1 000 V	1 000 V	1 000 V	1 000 V	1 000 V
<b>Horsepower ratings</b>	208 V three phase	50 hp	(2)	60 hp	75 hp	100 hp	150 hp
<b>(UL/CSA ratings)</b>	240 V three phase	60 hp	(2)	75 hp	100 hp	125 hp	200 hp
	480 V three phase	125 hp	(2)	150 hp	200 hp	250 hp	400 hp
	600 V three phase	150 hp	(2)	200 hp	250 hp	300 hp	500 hp
<b>Contactor type (1)</b>		<b>LC1F185</b>	<b>LC1F225</b>	<b>LC1F265</b>	<b>LC1F330</b>	<b>LC1F400</b>	<b>LC1F500</b>
<b>Reversing contactor type (1)</b>		<b>LC2F185</b>	<b>LC2F225</b>	<b>LC2F265</b>	-		For customer assembly

(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.

4

#### Standard control circuit voltages

ac supply												
Volts	24	48	110	120	208	220	230	240	380	440	480	600
<b>Contactors LC1F115–F225 (0.85–1.1UC)</b>												
50 Hz (coil LX1)	B5	E5	F5	-	-	M5	P5	U5	Q5	-	-	-
60 Hz (coil LX1)	-	E6	F6	G6	L6	M6	-	U6	Q6	R6	Q5	-
40–400 Hz (coil LX9)	-	E7	F7	G7	L7	M7	P7	U7	Q7	R7	-	-
<b>Contactors LC1F265–F330 (0.85–1.1UC)</b>												
40–400 Hz (coil LX1)	B7	E7	F7	G7	L7	M7	P7	U7	Q7	R7	S7	X7
<b>Contactors LC1F400–F630 (0.85–1.1UC)</b>												
40–400 Hz (coil LX1)	-	E7	F7	G7 (1)	L7	M7	P7	U7	Q7	R7	-	X7
<b>Contactor LC1F780 (0.85–1.1UC)</b>												
40–400 Hz (coil LX1)	-	-	F7	F7	L7	M7	P7	U7	Q7	R7	N7	-
<b>Contactor LC1F800 (0.7–1.3UC)</b>												
40–400 Hz (coil LX1)	-	-	F7	F7	L7	M7	P7	U7	Q7	R7	-	-
<b>Contactor LC1F1250 - F2100 (0.85–1.1UC)</b>												
	-	-	F7	F7	L7	M7	P7	U7	Q7	R7	N7	
dc supply												
Volts	24	48	110	125	220	230	250	400	440			
<b>Contactors LC1F115–F330 (0.85–1.1UC)</b>												
(coil LX4F)	BD	ED	FD	GD	MD	-	UD	-	RD			
<b>Contactors LC1F400–F630 (0.85–1.1UC)</b>												
(coil LX4F)		ED	FD	GD	MD	-	UD	-	RD			
<b>Contactor LC1F780</b>												
(coil LX4F)	-	-	FD	GD	MD	-	UD	-	RD			
<b>Contactor LC1F800</b>												
(coil LX4F)	-	-	FW	FW	MW	MW	-	QW	-			
<b>Contactor LC1F1250</b>												
(coil LX4F)	-	ED	FD	-	MD	-	UD	-	-			
<b>Contactor LC1F1400 to LC1F2100</b>												
(coil LX4F)	-	-	F	GD	MD	-	UD	-	RD			

Example: For a 630 A contactor with a 110 V  $\sim$  coil, order **LC1F630F7**

(1) F7 for LC1F630



630 A	780 A	800 A	1250 A	1400 A	1700 A	2100 A
1 000 A	1 350 A	1 000 A	600 V	600 V	600 V	600 V
1 000 V	1 000 V	1 000 V	3	3	3	3
250 hp	-	-	(2)	(2)	(2)	(2)
300 hp	450 hp	450 hp	(2)	(2)	(2)	(2)
600 hp	900 hp	800 hp	(2)	(2)	(2)	(2)
800 hp	900 hp	900 hp	(2)	(2)	(2)	(2)
<b>LC1F630</b>	<b>LC1F780</b>	<b>LC1F800</b>	<b>LC1F1250</b>	<b>LC1F1400</b>	<b>LC1F1700</b>	<b>LC1F2100</b>



#### Auxiliary contact blocks

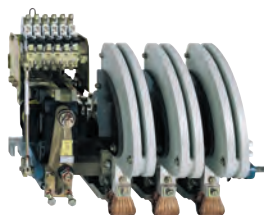
instantaneous				time delay 1N.O. + 1 N.C.				
Contact Arrangement	Catalog No.	Contact Arrangement	Catalog No.	Contact Arrangement	Catalog No.	Type	Range	Catalog No.
N.O. N.C.		N.O. N.C.		N.O. N.C.				
1 -	<b>LADN10</b>	1 1	<b>LADN11</b>	2 2	<b>LADN22</b>	On-delay	0.1–3 s	<b>LADT0</b>
- 1	<b>LADN01</b>	2 -	<b>LADN20</b>	1 3	<b>LADN13</b>		0.1–30 s	<b>LADT2</b>
		- 2	<b>LADN02</b>	4 -	<b>LADN40</b>		10–180 s	<b>LADT4</b>
				- 4	<b>LADN04</b>		1–30 s	<b>LADS2</b>
				3 1	<b>LADN31</b>	Off-delay	0.1–3 s	<b>LADR0</b>
				2 2	<b>LADC22</b>		0.1–30 s	<b>LADR2</b>
							10–180 s	<b>LADR4</b>

#### 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

Contact type	Set of connections	Mechanical interlock
<b>LC1F115</b>	<b>LA9FF976</b>	<b>LA9FF970</b>
<b>LC1F150</b>	<b>LA9F15076</b>	<b>LA9FF970</b>
<b>LC1F185</b>	<b>LA9FG976</b>	<b>LA9FG970</b>
<b>LC1F225</b>	<b>LA9F22576</b>	<b>LA9FG970</b>
<b>LC1F265</b>	<b>LA9FH976</b>	<b>LA9FJ970</b>
<b>LC1F330</b>	<b>LA9FJ976</b>	<b>LA9FJ970</b>
<b>LC1F400</b>	<b>LA9FJ976</b>	<b>LA9FJ970</b>
<b>LC1F500</b>	<b>LA9FK976</b>	<b>LA9FJ970</b>
<b>LC1F630 or LC1F800</b>	<b>LA9FL976</b>	<b>LA9FL970</b>
<b>LC1F1250 to LC1F2100</b>	-	-



<b>Rated operational current</b>	le max AC-3 (Ue ≤ 440V)	750 A	1000 A	1500 A	1800 A
	le AC-1 (θ ≤ 40° C)	800 A	1250 V	2000 A	2750A
<b>Rated operational voltage</b>		1 000 V	1 000 V	1 000 V	1 000 V
<b>Number of poles</b>		1 to 4	1 to 4	1 to 4	1 to 4
<b>Rated operational power in category AC3</b>	220/240 V	220 kW	280 kW	425 kW	500 kW
	380/400 V	400 kW	500 kW	750 kW	900 kW
	415 V	425 kW	530 kW	800 kW	900 kW
	440 V	450 kW	560 kW	800 kW	900 kW
	500 V	500 kW	600 kW	700 kW	900 kW
	660/690 V	560 kW	670 kW	750 kW	900 kW
	1000 V	530 kW	530 kW	670 kW	750 kW
<b>CSA approvals</b>					
	Max operational current	800A	1000A	1500A	2000A
	Max horsepower @ 600 V	620 HP	1000 HP	1500 HP	2100 HP
4 instantaneous contact configurations					
2 N/C + 2 N/O, 3 N/O + 1 N/C, 1 N/O + 3 N/C or 4 N/O					
<b>Contactor type*</b>		<b>LC1-BL</b>	<b>LC1-BM</b>	<b>LC1-BP</b>	<b>LC1-BR</b>

\* Basic reference to be completed by adding the coil voltage, followed by the instantaneous contact configuration.

#### Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

Volts	48	110	125	127	220	230	240	380	400	415	440	500
~ 50...400 Hz	-	<b>F</b>	-	<b>G</b>	<b>M</b>	<b>P</b>	<b>U</b>	<b>Q</b>	<b>V</b>	<b>N</b>	<b>R</b>	<b>S</b>
---	<b>ED</b>	<b>FD</b>	<b>GD</b>	-	<b>MD</b>	-	-	-	-	-	<b>RD</b>	-

Example: To order a 1500 A contactor with 127 V c coil with 3 N/O + 1 N/C, select **LC1-BP33G31**

#### Mounting accessories

Description	For contactor	Reference
<b>Bar support bracket</b>	<b>LC1-BL to BR</b>	<b>LA9-B103</b>
for mounting on 120 or 150 mm centres		
<b>Mechanical interlock and locking device components</b>	<b>LC1-B</b>	<b>EZ2-LB0601</b>

Reference to compiled by the customer										
<b>Contactor type, according to required use</b>										
~ supply 690 V, == supply 220 V/pole		CV1-B								
~ supply 1000 V, == supply 440 V/pole		CV3-B								
<b>Contactor rating</b>	CV1: 80 A    CV3: 80 A		F							
	CV1: 200 A    CV3: 170 A		G							
	CV1: 300 A    CV3: 250 A		H							
	CV1: 470 A    CV3: 320 A		J							
	CV1: 630 A    CV3: 500 A		K							
	CV1: 1000 A		L							
<b>Number of poles (PN1 main poles for CV1 and PA3 main poles for CV3)</b>										
Normally Open main poles	1 N/O			1						
	2 N/O			2						
	3 N/O			3						
	4 N/O			4						
	5 N/O			5						
Normally Closed main poles	1 N/C				1					
	2 N/C				2					
	3 N/C				3					
No main poles			0	Z	0	Z				
<b>Operational current</b>	10 A				E		E			
	20 A				N		N			
	40 A				P		P			
	80 A				F		F			
	125 A				R		R			
	170 A				W		W			
	200 A				G		G			
	250 A				S		S			
	300 A				H		H			
	320 A				T		T			
	470 A				J		J			
	500 A				V		V			
630 A				K		K				
1000 A				L		L				
<b>Control circuit voltage</b>	48 V						E			
	110 V						F			
	120 V						K			
	208 V						L			
	220 V						M			
	230 V						P			
	240 V						U			
	380 V						Q			
	400 V						V			
440 V						R				
<b>Operating frequency</b>	50 Hz							5		
	60 Hz							6		
	50/60 Hz							7		
	==							D		
== + economy resistor							R			
<b>Instantaneous auxiliary contacts</b>										
Normally Open	1 N/O								1	
	2 N/O								2	
	3 N/O								3	
	4 N/O								4	
Normally Closed	1 N/C									1
	2 N/C									2
	3 N/C									3
	4 N/C									4
Without instantaneous contact										
On-delay	1 C/O								0	0
Off-delay	1 C/O									J N

Example 1/ for single-phase capacitor switching: 400 V - 80 A - 1 N/O pole - Control circuit 220 V / 50 Hz, 1 N/O and 1 1N/C auxiliary contacts: **CV1-BF1F0ZM511**.  
 2/ for heating circuits, d.c. supply 800 V - 150 A - 2 N/O poles - Control circuit 48 V ==, 1 N/O + 1 N/O On-delay auxiliary contacts: **CV3-BG2W0ZED10J**



## Thermal overload relays, model k adjustable from 0.11 to 12 A

Connection by screw clamp terminals, direct mounting on contactors LC1K, manual or automatic reset

Relay setting range	Fuses to be used with selected relay—international applications (1)			Catalog Number
	aM	gG	BS88	
Class 10 A				
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–D32	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

### Everlink Terminal blocks

Separate terminal block	LRD-313*** LRD-365	LAD9R3
-------------------------	--------------------	--------

### Terminal block adapter

For mounting a relay beneath an LC1D115 or D150 contactor	LRD3***, LR3D3***, LRD35**	LA7D3058
---	----------------------------	----------

(1) Short circuit protection for North American applications: circuit breakers selected in accordance with CEC 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.



## Thermal overload relays, TeSys 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.

Connection by screw clamp terminals or connectors	Relay setting range	Fuses to be used with selected relay international applications			With contactor	Catalog number
		aM	gG	BS88		
<b>Class 10 A</b>	0.10...0.16 A	0.25 A	2 A	-	LC1-D09...D32	<b>LRD 01</b>
	0.16...0.25 A	0.5 A	2 A	-	LC1-D09...D32	<b>LRD 02</b>
	0.25...0.40 A	1 A	2 A	-	LC1-D09...D32	<b>LRD 03</b>
	0.40...0.63 A	1 A	1.6 A	-	LC1-D09...D32	<b>LRD 04</b>
	0.63...1 A	2 A	4 A	-	LC1-D09...D32	<b>LRD 05</b>
	1...1.7 A	2 A	4 A	6 A	LC1-D09...D32	<b>LRD 06</b>
	1.6...2.5 A	4 A	6 A	10 A	LC1-D09...D32	<b>LRD 07</b>
	2.5...4 A	6 A	10 A	16 A	LC1-D09...D32	<b>LRD 08</b>
	4...6 A	8 A	16 A	16 A	LC1-D09...D32	<b>LRD 10</b>
	5.5...8 A	12 A	20 A	20 A	LC1-D09...D32	<b>LRD 12</b>
	7...10 A	12 A	20 A	20 A	LC1-D09...D32	<b>LRD 14</b>
	9...13 A	16 A	25 A	25 A	LC1-D12...D32	<b>LRD 16</b>
	12...18 A	20 A	35 A	32 A	LC1-D18...D32	<b>LRD 21</b>
	16...24 A	25 A	50 A	50 A	LC1-D25...D32	<b>LRD 22</b>
	23...32 A	40 A	63 A	63 A	LC1-D25...D32	<b>LRD 32</b>
	30...38 A	50 A	80 A	80 A	LC1-D32	<b>LRD 35</b>
	55...70 A	80 A	125 A	125 A	D50...D80	<b>LRD 3361</b>
	63...80 A	80 A	125 A	125 A	D65...D80	<b>LRD 3363</b>
	80...104 A	100 A	160 A	160 A	D80...D80	<b>LRD 3365</b>
	<b>Class 20</b>	80...104 A	125 A	200 A	160 A	D115...D150
95...120 A		125 A	200 A	200 A	D115...D150	<b>LRD 4367</b>
110...140 A		160 A	250 A	200 A	D150	<b>LRD 4369</b>
80...104 A		100 A	160 A	160 A	Separate amount	<b>LRD 33656</b>
95...120 A		125 A	200 A	200 A	Separate amount	<b>LRD 33676</b>
110...140 A		160 A	250 A	200 A	Separate amount	<b>LRD 33696</b>
6 A		10 A	16 A		LC1-D09...D32	<b>LRD 1508</b>
4...6 A		8 A	16 A	16 A	LC1-D09...D32	<b>LRD 1510</b>
5.5...8 A		12 A	20 A	20 A	LC1-D09...D32	<b>LRD 1512</b>
7...10 A		16 A	20 A	25 A	LC1-D09...D32	<b>LRD 1514</b>
9...13 A		16 A	25 A	25 A	LC1-D12...D32	<b>LRD 1516</b>
12...18 A		25 A	35 A	40 A	LC1-D18...D32	<b>LRD 1521</b>
17...25 A	32 A	50 A	50 A	LC1-D25...D32	<b>LRD 1522</b>	
23...28 A	40 A	63 A	63 A	LC1-D25...D32	<b>LRD 1530</b>	
25...32 A	40 A	63 A	63 A	LC1-D25...D32	<b>LRD 1532</b>	
55...70 A	100 A	125 A	125 A	D65...D80	<b>LR2 D3561</b>	
63...80 A	100 A	160 A	125 A	D80	<b>LR2 D3563</b>	
<b>Connection by EverLink terminal blocks, with BTR screws</b>						
<b>Class 10 A</b>	9...13 A	16 A	25 A	25 A	LC1-D40A...D65A	<b>LRD 313 (1)</b>
	12...18 A	20 A	32 A	35 A	LC1-D40A...D65A	<b>LRD 318 (1)</b>
	17...25 A	25 A	50 A	50 A	LC1-D40A...D65A	<b>LRD 325 (1)</b>
	23...32 A	40 A	63 A	63 A	LC1-D40A...D65A	<b>LRD 332 (1)</b>
	30...40 A	40 A	80 A	80 A	LC1-D40A...D65A	<b>LRD 340 (1)</b>
	37...50 A	63 A	100 A	100 A	LC1-D40A...D65A	<b>LRD 350 (1)</b>
	48...65 A	63 A	100 A	100 A	LC1-D40A...D65A	<b>LRD 365 (1)</b>
<b>Class 20</b>	9...13 A	20 A	32 A	35 A	LC1-D40A...D65A	<b>LRD 313L (1)</b>
	12...18 A	25 A	40 A	40 A	LC1-D40A...D65A	<b>LRD 318L (1)</b>
	17...25 A	32 A	50 A	50 A	LC1-D40A...D65A	<b>LRD 325L (1)</b>
	23...32 A	40 A	63 A	63 A	LC1-D40A...D65A	<b>LRD 332L (1)</b>
	30...40 A	50 A	80 A	80 A	LC1-D40A...D65A	<b>LRD 340L (1)</b>
	37...50 A	63 A	100 A	100 A	LC1-D40A...D65A	<b>LRD 350L (1)</b>
	48...65 A	80 A	125 A	125 A	LC1-D40A...D65A	<b>LRD 365L (1)</b>

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

### Class 10A with connection by lug-clamps:

Select overload relay with screw clamp terminals or connectors from the table above and add one of following suffixes:

■ figure 6 for relays LRD01 to LRD35 and LRD313 to LRD365.

■ figure A66 for relays LRD3361 to LRD3365.

Relays LRD43 are suitable as standard, for use with lug-clamps

### Thermal overload relays for use with unbalanced loads Class 10A with connection by screw clamp terminals and lug-clamp terminals:

In the reference selected above, change LRD (except LRD 4●●●) by LR3D

Example: LRD01 becomes LR3D01

Example with screw clamp terminal: LRD340 becomes LR3D340

Example with lug-clamp terminal: LRD3406 becomes LR3D3406

(1) Independant mounting on a DIN rail, order an EverLink LAD96560 terminal block.



For use with contactor	LC1-D	LC1-F
Motor current	60...150 A	30...630 A
<b>Basic reference, to be completed</b>	<b>LR9-D</b>	<b>LR9-F</b>

Relay setting range	Fuse to be used with selected relay		For mounting beneath contactor LC1-	Compensated and differential		or not with alarm Class 10 or 20
	international applications			Class 10	Class 20	
	aM	gG				
60...100	100	160	D115 and D150	<b>LR9-D5367</b>	<b>LR9-D5567</b>	
90...150	160	250	D115 and D150	<b>LR9-D5369</b>	<b>LR9-F5569</b>	
30...50	50	80	F115...F185	<b>LR9-F5357</b>	<b>LR9-F5557</b>	<b>LR9-F57</b>
48...80	80	125	F115...F185	<b>LR9-F5363</b>	<b>LR9-F5563</b>	<b>LR9-F63</b>
60...100	100	200	F115...F185	<b>LR9-F5367</b>	<b>LR9-F5567</b>	<b>LR9-F67</b>
90...150	160	250	F115...F185	<b>LR9-F5369</b>	<b>LR9-F5569</b>	<b>LR9-F69</b>
132...220	250	315	F185...F400	<b>LR9-F5371</b>	<b>LR9-F5571</b>	<b>LR9-F71</b>
200...330	400	500	F225...F500	<b>LR9-F7375</b>	<b>LR9-F7575</b>	<b>LR9-F75</b>
300...500	500	800	F225...F500	<b>LR9-F7379</b>	<b>LR9-F7579</b>	<b>LR9-F79</b>
380...630	630	800	F400...F630 and F800	<b>LR9-F7381</b>	<b>LR9-F7581</b>	<b>LR9-F81</b>

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

### Accessories

#### Remote control

Function	Reset	Stop and/or Reset
Reset by flexible cable (length 0.5 m)	<b>LA7-D305</b>	
Adapter for door interlock mechanism		<b>LA7-D1020</b>

#### Operating head for pushbutton

Spring return	<b>ZA2-BL639</b>	<b>ZA2-BL432</b>
---------------	------------------	------------------

#### Rod with snap-off end

Adjustable from 17 to 120 mm	<b>ZA2-BZ13</b>	
------------------------------	-----------------	--

#### Insulated terminal blocks

For relays LR9-F5•57, F5•63, F5•67, F5•69, F57, F63, F67 and F69	Set of 2 blocks
	<b>LA9-F103</b>





For use with contactor	LC1-D or LC1-F
Motor current	No limit
<b>Basic reference, to be completed</b>	<b>LT3-S</b>

### Protection units with automatic reset with thermistor short-circuit detection without fault memory

Connection	Voltage	Output contact	Reference
by cage connectors	115 V	N/C	LT3-SE00F
	230 V	N/C	LT3-SE00M
---	24 V	N/C	LT3-SE00F
<b>On front panel: fault and voltage signalling indicator</b>			
~ 50/60 Hz	115/230 V	N/C + N/O	LT3-SA00M
---	24/48 V	N/C + N/O	LT3-SA00ED
~ 50/60 Hz or ---	24...230 V	2 C/O	LT3-SA00MW

### with fault memory

On front panel: fault and voltage signalling indicator, Test and Reset button			
~ 50/60 Hz	400 V	N/C + N/O	LT3-SM00V
	24/48 V	N/C + N/O	LT3-SM00E
	115/230 V	N/C + N/O	LT3-SM00M
---	24/48 V	N/C + N/O	LT3-SM00ED
~ 50/60 Hz or ---	24...230 V	2 C/O	LT3-SM00MW

### Accessories

#### PTC thermistor probes for LT3

Normal operating temperature (NOT)	90 °C	110 °C	120 °C	130 °C	140 °C	150 °C	160 °C	170 °C
<b>Integrated triple probes</b>	DA1-TT090	DA1-TT110	DA1-TT120	DA1-TT130	DA1-TT140	DA1-TT150	DA1-TT160	DA1-TT170
Normal operating temperature (NOT)	60 °C	70 °C	80 °C	90 °C	100 °C			
<b>Surface probes</b>	DA1-TS060	DA1-TS070	DA1-TS080	DA1-TS090	DA1-TS100			



Type of fieldbus			Ethernet TCP/IP		Modbus	
Supply voltage			24 VDC	100...240 VAC	24 VDC	100...240 VAC
References	Current range	0.4...8 A	LTMR08 EBD	LTMR08 EFM	LTMR08 MBD	LTMR08 MFM
		1.35...27 A	LTMR27 EBD	LTMR27 EFM	LTMR27 MBD	LTMR27 MFM
		5...100 A	LTMR100 EBD	LTMR100 EFM	LTMR100 MBD	LTMR100 MFM



4

Type of fieldbus			Profibus DP		CANopen		DeviceNet	
Supply voltage			24 VDC	100...240 VAC	24 VDC	100...240 VAC	24 VDC	100...240 VAC
References	Current range	0.4...8 A	LTMR08 PBD	LTMR08 PFM	LTMR08 CBD	LTMR08 CFM	LTMR08 DBD	LTMR08 DFM
		1.35...27 A	LTMR27 PBD	LTMR27 PFM	LTMR27 CBD	LTMR27 CFM	LTMR27 DBD	LTMR27 DFM
		5...100 A	LTMR100 PBD	LTMR100 PFM	LTMR100 CBD	LTMR100 CFM	LTMR100 DBD	LTMR100 DFM

## Extension module



Type of module	Extension 4 additional inputs + voltage measuring	
Inputs voltage	24 VDC	100...240 VAC
References	LTMEV40BD	LTMEV40FM

## Control Unit



Type of terminal	Compact display
Supply voltage	24 VDC
References	LTMCU



Type of transformer		External			
Operational current	primary	100 A	200 A	400 A	800 A
	secondary	1 A			
References		LT6CT1001	LT6CT2001	LT6CT4001	LT6CT8001

### Earth fault toroids

Type of toroid	Closed					Split		
	Maximum current	65 A	85 A	160 A	250 A	400 A	630 A	85 A
Internal diameter	Ø 30	Ø 50	Ø 80	Ø 120	Ø 200	Ø 300	Ø 46	Ø 110
References	50437	50438	50439	50440	50441	50442	50485	50486

### PTC thermistor probe

Type of probe	Triple							
Operating temperature	90°C	110°C	120°C	130°C	140°C	150°C	160°C	170°C
References	DA1TT090	DA1TT110	DA1TT120	DA1TT130	DA1TT140	DA1TT150	DA1TT160	DA1TT170

### Accessories (1)



Type of accessory	Connecting cable Controller / Extension module		
Length of cable	0.04 m	0.3 m	1 m
References	LTMCC004	LU9R03	LU9R10



Type of accessory	Connecting cable Controller / Display			Connection kit PC serial port
	Length of cable	1 m	3 m	5 m
References	VW3A1104R10	VW3A1104R30	VW3A1104R50	VW3A8106

(1) For other connection accessories, see [www.schneider-electric.com](http://www.schneider-electric.com)



The GV range of products are 3-pole, horsepower rated, CSA22.2 no. 14 and UL 508 listed, manual motor starters. They include a manual disconnect, class 10 ambient-compensated thermal overload relay, and an instantaneous magnetic trip mechanism in one compact unit. Any GV manual starter can be used alone for local manual control of a motor up to 220A.

### 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 Group motor or manual starter	
200 V	230 V	460 V	575 V			Pushbutton 600 V max	Rotary Handle 600 V (Type E 480 V max)
-	-	-	-	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	0.63-1	13	GV2ME05	GV2P05
-	-	0.75	0.75	1-1.6	22.5	GV2ME06	GV2P06
0.5	0.5	1	1.5	1.6-2.5	33.5	GV2ME07	GV2P07
0.75	0.75	2	3	2.5-4	51	GV2ME08	GV2P08
1	1.5	3	5	4-6.3	78	GV2ME10	GV2P10
2	3	5	7.5	3-10	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
7.5	7.5	15	20	20-25	327	GV2ME22	GV2P22
7.5	10	20	25	24-32	416	GV2ME32	GV2P32 (group motor installation only)

For common add on blocks and accessories for GV2/GV3 please see page 19.

## Manual motor starters

### 1 to 50HP

### with EverLink terminal blocks



The GV range may be used in group motor installations per CEC and NEC. Group motor applications do not require Type E devices but Type E devices can be used in Group applications if desired.

### Thermal-magnetic circuit-breakers GV3-P for connection by EverLink terminal blocks (2)

Control by rotary knob

Horsepower ratings of 3-phase motors 50/60 Hz						Setting range	Catalog Number
1ph		3ph				Thermal trips (A)	Type E 600V max
115V	230V	200V	230V	460V	575V		
1	2	3	3	7.5	10	9...13	GV3P13
1	3	5	5	10	15	12...18	GV3P18
2	3	7.5	7.5	15	20	17...25	GV3P25
2	5	10	10	20	30	23...32	GV3P32
3	5	10	10	30	30	30...40	GV3P40
3	7.5	15	15	40	40	37...50	GV3P50
5	10	20	20	50	50	48...65	GV3P65

(2) BTR screw of 4 mm

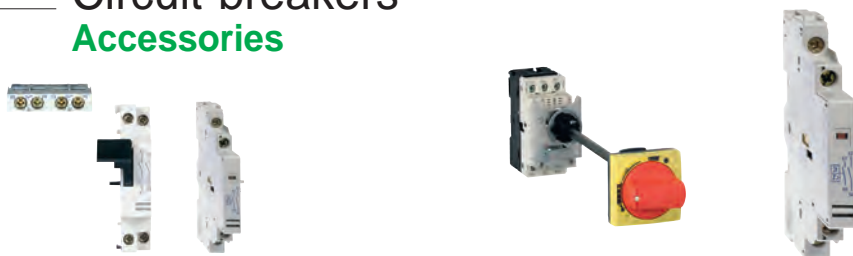
## GV3 add-on blocks and accessories

Add-on blocks (front)	Fault signalling contact + instantaneous auxiliary contact	
Contact type	N/O (fault) + N/C	N/O (fault) + N/O
Catalog number	GV-AED011	GV-AED101

Accessories						
Type	for contactor for lug type terminals	IP20 cover for lug type terminals	Set of 3-pole 115 A busbars	2-pole busbars	"Wide spacing" UL 508 type E cover	Side by side mounting busbars
Catalog number	LAD96575	LAD96570	GV3G364	GV36264	GV3G66	GV3S

(3) Common add-on blocks and accessories GV2 / GV3, see page 19

(4) For spring terminal version add 3 to the end of the reference. Example GV-AED011 becomes GV-AED0113



Accessories GV2							
<b>Combination block</b>							
For mounting on		LC1-K or LP1-K	LC1-D09...D38	LAD-31 and LC1-D09...D38			
		GV2-AF01	GV2-AF3	GV2-AF4			
<b>Sets of 3-pole busbars</b>							
63 A	Pitch	45 mm	54 mm	72 mm			
Number of tap-offs	2	GV2-G245	GV2-G254	GV2-G272			
	3	GV2-G345	GV2-G354				
	4	GV2-G445	GV2-G454	GV2-G472			
	5		GV2-G554				
<b>Protective end cover</b>							
For unused busbar outlets		GV1-G10					
<b>Terminal blocks</b>							
For supply to one or more GV2-G busbar sets		connection from the top	can be fitted with current limiter GV1-L3 (GV2-ME and GV2-P)				
		GV1-G09	GV1-G05				
<b>Padlockable external operator for GV2 and GV3 (150 to 290 mm)</b>							
Padlocking		In "On" and "Off" position	In "Off" position				
Handle		black	red				
Legend plate		blue	yellow				
IP 54	For GV2-ME/P/L	GV2-AP01	GV2-AP02				
	For GV3-P	GV3-AP01	GV3-AP02				
<b>TeSys rotating handles for</b>		<b>GV2-P</b>	<b>GV3-P</b>				
Kit IP54 black handle		GV2APN01	GV3APN01				
IP54 kid red/yellow handle		GV2APN02	GV3APN02				
IP65 kit red/yellow handle		GV2APN04	GV3APN04				
<b>Line Insulator</b>							
For GV2-P Type UL508E (not required by CSA)		GV2-GH7					
For GV3-P Type UL508E (not required by CSA)		GV3-G66					
<b>Add-on blocks common to GV2 / GV3</b>							
<b>Contact blocks</b>							
Contact types		N/O or N/C	N/O + N/C	N/O + N/O	(fault) + N/C	(fault) + N/O	C/O common point
<b>Instantaneous auxiliary contacts</b>							
Mounting	front	GV-AE1	GV-AE11	GV-AE20			
	LH side		GV-AN11	GV-AN20			
<b>Fault signalling contact + instantaneous auxiliary contact</b>							
	LH side				GV-AD1001	GV-AD1010	
					GV-AD0101	GV-AD0110	
<b>Short-circuit signalling contact</b>							
	LH side						GV-AM11
<b>Electric trips</b>							
<b>Undervoltage or shunt trips</b> (Replace • in catalog number with "S" for Shunt trip or "U" for Undervoltage trip )							
Side mounting (1 block on RH side of circuit-breaker)		50 Hz		60 Hz			
Voltage	24 V	GV-A•025		GV-A•026			
	110...115 V	GV-A•115		GV-A•116			
	120...127 V	GV-A 125					
	200...220 V			GV-A•207			
	220...240 V	GV-A•225		GV-A•226			
	380...400 V	GV-A•385		GV-A•386			
	480 V			GV-A•415			
	600 V			GV-A•505			
<b>Padlocking device</b>							
For use with up to 4 padlocks (padlocks not supplied) Ø 6 mm shank max		GV2-V03					



**Manual motor starters GV7R for connection by screw clamp terminals**  
Control by rocker lever

Horsepower ratings of 3-phase motors 50/60 Hz			Setting range of thermal trips	Catalog Number	
230 V	460V	575 V	A	25-35KA	65KA
5	10	15	12–20	<b>GV7RE20</b>	<b>GV7RS20</b>
7.5	15	20	15–25	<b>GV7RE25</b>	<b>GV7RS25</b>
10	30	30	25–40	<b>GV7RE40</b>	<b>GV7RS40</b>
15	30	40	30–50	<b>GV7RE50</b>	<b>GV7RS50</b>
30	60	75	48–80	<b>GV7RE80</b>	<b>GV7RS80</b>
30	75	100	60–100	<b>GV7RE100</b>	<b>GV7RS100</b>
50	100	150	90–150	<b>GV7RE150</b>	<b>GV7RS150</b>
75	150	200	132–220	<b>GV7RE220</b>	<b>GV7RS220</b>

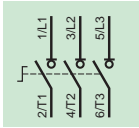
**Add-on blocks**  
Contact blocks

Auxiliary contacts						
Contact type		C/O				
		<b>GV7AE11</b>				
Thermal or magnetic fault discrimination						
		24–48 V or 24–72 V		110–240 V		
		<b>GV7AD111</b>		<b>GV7AD112</b>		
Electric trips						
Voltage	50/60 Hz	48 V	110–130 V	200–240 V	380–440 V	525 V
	50 Hz					
<b>Undervoltage trip (1)</b>		<b>GV7AU055</b>	<b>GV7AU107</b>	<b>GV7AU207</b>	<b>GV7AU387</b>	<b>GV7AU525</b>
<b>Shunt trip (1)</b>		<b>GV7AS055</b>	<b>GV7AS107</b>	<b>GV7AS207</b>	<b>GV7AS387</b>	<b>GV7AS525</b>

(1) For mounting of a GV7AD or a GV7AU or AS

**Accessories**

Terminal shields IP 405			
Supplied with the sealing accessory		<b>GV7AC01</b>	
Phase barriers			
Safety accessories		<b>GV7AC04</b>	
used when fitting of shields is impossible			
Insulating screens			
Ensure insulation between the connections and the backplate		<b>GV7AC05</b>	
Kit for combination with contactor			
Allowing link between the circuit-breaker and the contactor		LC1F115 to F185	LC1F225 and F26
		<b>GV7AC06</b>	<b>GV7AC07</b>
			<b>GV7AC08</b>
Rotary handles			
Handle		black	
Legend plate		black	
■ direct IP 40		<b>GV7AP03</b>	
■ extended IP 55		<b>GV7AP01</b>	
		<b>GV7AP04</b>	
		<b>GV7AP02</b>	
Conversion accessory			
for mounting on enclosure door IP 43		<b>GV7AP05</b>	
Locking device			
For circuit-breaker not fitted with a rotary handle		<b>GV7V01</b>	



### Varlo Switch Kits

Type		Door Mount				Rear Mount with Extension Shaft		Switch & Handle DIN Rail mount	
Color		red/yellow	red/yellow	black/grey	black/grey	red/yellow	red/yellow	red/yellow	
Front plate dimensions (mm)		60 x 60	90 x 90	60 x 60	90 x 90	90 x 90	60 x 60	-	
Mounting		1 Hole	4 Hole	1 Hole	4 Hole	4 Hole	1 Hole	DIN Rail	
Degree of protection		IP20	IP20	IP20	IP20	IP20	IP20	-	
Amps		1 Phase, HP rating		3 Phase, HP rating					
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V		
10	12	1	2	2	2	5	5	VCD02 VCF02 VBD02 VBF02 VCCF02 VCCD02 -	
16	20	1.5	3	3	3	7.5	7.5	VCD01 VCF01 VBD01 VBF01 VCCF01 VCCD01 -	
20	25	2	3	5	5	10	10	VCD0 VCF0 VBD0 VBF0 VCCF0 VCCD0 VVE0	
20	32	2	3	5	5	10	10	VCD1 VCF1 VBD1 VBF1 VCCF1 VCCD1 VVE1	
25	40	2	3	5	5	10	15	VCD2 VCF2 VBD2 VBF2 VCCF2 VCCD2 VVE2	
45	63	5	7.5	7.5	10	20	30	VCF3 VBF3 VCCF3 VVE3	
63	80	7.5	10	10	15	30	40	VCF4 VBF4 VCCF4 VVE4	
100	125	15	20	20	25	50	50	VCF5 VBF5 VCCF5	
110	175	15	25	25	30	50	60	VCF6 VBF6 VCCF6	

### Enclosed Varlo Switch

Amps		1 Phase, HP rating		3 Phase, HP rating				Non Metallic		Metallic		
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V	Type 1/ 12		Type 1	Type 12	Type 4 / 4X (indoor use only)
20	32	2	3	5	5	10	10	VC1GU		9421V1G30	9421V1A30	9421V1W30
25	40	2	3	5	5	10	15	VC2GU		9421V2G30	9421V2A30	9421V2W30
45	63	5	7.5	7.5	10	20	30	VC3GU				
63	80	7.5	10	10	15	30	40	VC4GU				
100	125	15	20	20	25	50	50	VC5GU				
110	175	15	25	25	30	50	60	VC6GU				

### Varlo Switch

Amps		1 Phase, HP rating		3 Phase, HP rating				Shaft Size	3 Pole	Add-On Power Pole
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V			
10	12	1	2	2	2	5	5	6mm	V02	VZ02
16	20	1.5	3	3	3	7.5	7.5	6mm	V01	VZ01
20	25	2	3	5	5	10	10	6mm	V0	VZ0
20	32	2	3	5	5	10	10	6mm	V1	VZ1
25	40	2	3	5	5	10	15	6mm	V2	VZ2
45	63	5	7.5	7.5	10	20	30	6mm	V3	VZ3
63	80	7.5	10	10	15	30	40	6mm	V4	VZ4
100	125	15	20	20	25	50	50	6mm	V5	-
110	175	15	25	25	30	50	60	6mm	V6	-

### Varlo Switch Accessories

#### Auxiliary Contacts (10A)

1 N.O. / 1 N.C. (early make, late break) VZ7

2 N.O. VZ20

#### Handle

Mounting	Single Hole				Four Hole					
Color	red yellow		black/grey		red/yellow		black/grey			
Front Plate Dimensions (mm)	45x45 mm	60x60 mm	45x45mm	60x60mm	45x45mm	60x60mm	90x90mm	45x45mm	60x60mm	90x90mm
Padlockable for base switch	V02 to V2	KCC1YZ	KCD1PZ		KCE1YZ	KCF1PZ	KCF3PZ	KAF1PZ	KAF2PZ	KAF3PZ
	V3 to V4			KAD1PZ	KCF2PZ	KAF3PZ				
	V5 to V6									
Non-Padlockable for base switch	V02 to V2	KCC1LZ	KDD1PZ	KAC1BZ	KBD1PZ	KCE1LZ	KDF1PZ	KAE1BZ	KBF1PZ	KBF3PZ
	V3 to V4					KDF2PZ	KBF2PZ	KBF2PZ		
	V5 to V6					KDF3PZ				

#### Shaft Kits & Plates

Base Switch	Maximum Panel Depth	Shaft Kit	Door Interlock Plate	Door Mounting Plate
V02 to V2	330mm	VZ17	KZ32	KZ83
	429mm	VZ30	KZ32	KZ83
V03 to V4	320mm	VZ18	KZ74	KZ81
	419mm	VZ30	KZ74	KZ81
V05 to V6	351mm	VZ18	KZ74	KZ81
	450mm	VZ31	KZ74	KZ81

# TeSys DF Fuse carriers

## 0.5...125 A



Type			Fuse carriers without "blown fuse" indicator				
Rated operational voltage (Ui)			600 V (UL & CSA)		690 V (cURus certified component)		
Fuse size			Class CC		10 x 38 mm	14 x 51 mm	22 x 58 mm
Conventional thermal current (Ith)			30 A		32 A	50 A	125 A
Catalog number	Number of poles	1P	DFCC1	DF101	DF141	DF221	
		N	–	DF10N	DF14N	DF22N	
		1P+N	–	DF101N	DF141N	DF221N	
		2P	DFCC2	DF102	DF142	DF222	
		3P	DFCC2	DF103	DF143C	DF223C	
		3P+N	–	DF103N	DF143NC	DF223NC	

4



Type			Fuse carriers with "blown fuse" indicator				
Rated operational voltage (Ui)			600 V (UL & CSA)		690 V (cURus certified component)		
Fuse size			Class CC		10 x 38 mm	14 x 51 mm	22 x 58 mm
Conventional thermal current (Ith)			30 A		32 A	50 A	125 A
References	Number of poles	1P	DFCC1V	DF101V	DF141V	DF221V	
		1P + N	–	DF101NV	DF141NV	DF221NV	
		2P	DFCC2V	DF102V	DF142V	DF222V	
		3P	DFCC3V	DF103V	DF143CV	DF223CV	
		3P + N	–	DF103NV	DF143NCV	DF223NCV	

## Accessories

Type	Auxiliary early break and blown fuse signalling contacts			
Fuse carrier to be equipped	DF14 (not UL or CSA)		DF22 (not UL or CSA)	
Size of cartridge fuse or link	14 x 51 mm		22 x 58 mm	
Number of contacts	1	2	1	2
References	DF14AM1	DF14AM2	DF22AM1	DF22AM2

Type	Fuse carrier assembly kits				
Fuse carrier to be assembled	DFCC	DF8	DF10	DF14	DF22
Size of cartridge fuse or link	Class C	8.5 x 31.5 mm	10 x 38 mm	14 x 51 mm	22 x 58 mm
Kit contents	1 pin, 2 clips		1 pin, 3 clips		
References	DF10AP		DF14AP	DF22AP	





### Fuse Carriers

<b>Rated operational voltage</b> with links, a.c. supply	600 V	690 V	690 V
<b>Maximum continuous current</b> for ambient temperature $\leq 40^\circ\text{C}$			
with CC or KTK-R (wire gauge/A)	2 - #8 AWG/30A max		
with links (mm <sup>2</sup> /A)		4/25A or 2.5/16A	6/32A or 4/25A or 2.5/16A
with aM fuses (mm <sup>2</sup> /A)		4/22A or 2.5/20A	6/32A or 4/22A or 2.5/20A
with gG fuses (mm <sup>2</sup> /A)		2.5/20A or 1.5/16A	6/32A or 2.5/20A or 1.5/16A
<b>Conforming to standards</b>			
CSA/UL	•		
NF EN 60947-3		•	•
IEC 947-3		•	•
<b>Product certifications</b>		<b>BV UR</b>	<b>BV UR</b>
<b>Fuse carrier type</b>	<b>LS1D30</b>	<b>LS1D323</b>	<b>LS1D32</b>



### Basic blocks connection

<b>Rating</b>	30A	25A	32A
<b>Cartridge fuse size</b>	Type CC or KTK-R	10 x 38	10 x 38
<b>Screw clamp connection</b>			
3-pole	<b>LS1D30</b>		<b>LS1-D32</b>
4-pole			<b>LS1-D32+LA8-D324</b>
<b>Spring terminal connection</b>			
3-pole	<b>LS1D303</b>	<b>LS1D323</b>	

### Add-on blocks

#### Contact blocks

<b>For use on</b>	LS1D30		LS1D32		LS1D323	
<b>Contact type</b>	N/O+N/C	N/O+N/O	N/O+N/C	N/O+N/O	N/O+N/C	N/O+N/O
<b>Instantaneous auxiliary contacts</b>						
<b>Front mounting</b>	<b>GVAE11</b>	<b>GVAE20</b>	<b>GVAE11</b>	<b>GVAE20</b>	<b>GVAE113</b>	<b>GVAE203</b>



**GS1/2 Fusible disconnect switch 30-800A**

Catalog Number	<b>S1DDU3</b>	<b>GS1DU3</b>	<b>GS2GU3N</b>	<b>GS2JU3N</b>
Switch Type	Compact Fused	Compact Fused	Fused	Fused
Fuses	CC	J	J	J
Amps	30	30	60	100
Poles	3	3	3	3
Operator Style	Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
Max. HP 3 Phase:				
HP at 240V	7.5	7.5	15	30
HP at 480V	15	15	30	60
HP at 600V	20	20	50	75

**Handle**

1,4,4X,12 Black	<b>GS2AH410</b>	<b>GS2AH410</b>	<b>GS2AH410</b>	<b>GS2AH430</b>
1,4,4X,12 Red / Yellow	<b>GS2AH420</b>	<b>GS2AH420</b>	<b>GS2AH420</b>	<b>GS2AH440</b>

**Shaft**

320mm	<b>GS2AE8</b>	<b>GS2AE8</b>	<b>GS2AE8</b>	<b>GS2AE2</b>
400mm	<b>GS2AE81</b>	<b>GS2AE81</b>	<b>GS2AE81</b>	<b>GS2AE21</b>

**Lugs (6 per kit)**

Catalog Number	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
----------------	-----------------	-----------------	-----------------	-----------------



**LK4 non-fused disconnect switch 30-1200A**

Catalog Number	<b>LK4DU3CN</b>	<b>LK4GU3CN</b>	<b>LK4JU3N</b>	<b>LK4MU3N</b>	<b>LK4QU3N</b>
Switch Type	Compact Non-fused	Compact 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:					
HP at 240V	10	20	30	75	125
HP at 480V	20	40	75	150	250
HP at 600V	25	50	100	200	350

**Handle**

1,4,4X,12 Black	<b>LK4AH410CN</b>	<b>LK4AH410CN</b>	<b>GS2AH430</b>	<b>GS2AH430</b>	<b>GS2AH430</b>
1,4,4X,12 Red / Yellow	<b>LK4AH420CN</b>	<b>LK4AH420CN</b>	<b>GS2AH440</b>	<b>GS2AH440</b>	<b>GS2AH440</b>

**Shaft**

320mm	<b>LK4AE12CN (1)</b>	<b>LK4AE12CN (1)</b>	<b>GS2AE2</b>	<b>GS2AE2</b>	<b>GS2AE2</b>
400mm			<b>GS2AE21</b>	<b>GS2AE21</b>	<b>GS2AE21</b>

**Lugs (6 per kit)**

Catalog Number	<b>Standard</b>	<b>Standard</b>	<b>GS1AW403</b>	<b>GS1AW403</b>	<b>GS1AW503</b>
----------------	-----------------	-----------------	-----------------	-----------------	-----------------

\*Note (1) Shaft Guide for compact Non-fused = LK4AEAH12CN



GS2MU3N	GS2QU3N	GS2SU3	GS2TU3
Fused	Fused	Fused	Fused
J	J	J	L
200	400	600	800
3	3	3	3
Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
60	125	200	200
125	250	400	500
150	350	500	500

GS2AH430	GS2AH430	GS2AH150	GS2AH150
GS2AH440	GS2AH440	GS2AH160	GS2AH160

GS2AE2	GS2AE2	GS2AE5	GS2AE5
GS2AE21	GS2AE21	GS2AE51	GS2AE51

GS1AW403	GS1AW503	GS1AW503	GS1AW503
----------	----------	----------	----------

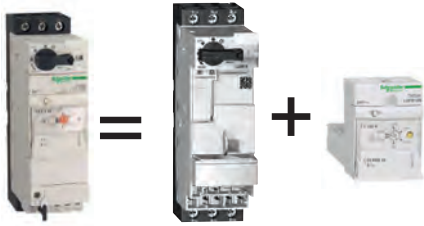


LK4SU3N	LK4TU3N	LK4UU3N	LK4WU3N
Non-fused	Non-fused	Non-fused	Non-fused
600	800	1000	1200
3	3	3	3
Thru-the-door	Thru-the-door	Thru-the-door	Thru-the-door
200	200	200	200
400	500	500	500
350	500	500	500

GS2AH150	GS2AH170	GS2AH170	GS2AH170
GS2AH160	GS2AH180	GS2AH180	GS2AH180

GS2AE6	GS2AE6	GS2AE6	GS2AE6
GS2AE61	GS2AE61	GS2AE61	GS2AE61

GS1AW503	GS1AW903	GS1AW903	GS1AW903
----------	----------	----------	----------



### Power base

	Single Phase			Three Phase			Type E self protected combination motor controller (1)		
	120V	240V	200/208V	230/240V	480V	600V	Current rating	Non Reversing	Reversing (2)
Horsepower	1/2	2	3	3	7.5	10	12A	LUB12	LU2B12**
CSA/UL	2	5	10	10	20	25	32A	LUB32	LU2B32**

(1) Current limiter LUALB1 required for 600V type E applications, Phase barrier LU9SP0 required for UL approval



## 4

### Control units

Setting Range (A)	Mounts on to	Standard (3)	Advanced (3)		Multifunction	
		Class 10 three phase	Class 10 three phase	Class 10 single phase	Class 20 three phase	Class 5 – 35 three phase
0.15 – 0.6	12 and 32	LUCA6X**	LUCB6X**	LUCC6X**	LUCD6X**	LUCM6XBBL
0.35 – 1.4	12 and 32	LUCA1X**	LUCB1X**	LUCC1X**	LUCD1X**	LUCM1XBBL
1.25 – 5	12 and 32	LUCA05**	LUCB05**	LUCC05**	LUCD05**	LUCM05BBL
3 – 12	12 and 32	LUCA12**	LUCB12**	LUCC12**	LUCD12**	LUCM12BBL
4.5 – 18	32	LUCA18**	LUCB18**	LUCC18**	LUCD18**	LUCM18BBL
8 – 32	32	LUCA32**	LUCB32**	LUCC32**	LUCD32**	LUCM32BBL

### Function characteristics

Standard = LUB... + LUCA...	Advanced = LUB... + LUCB/C/D...	Multifunction = LUB... + LUCM...
Thermal overload protection against: <ul style="list-style-type: none"> <li>• short-circuit, overcurrent,</li> <li>• phase failure or imbalance,</li> <li>• insulation breaks (equipment only).</li> </ul> Manual reset following thermal fault.	Thermal overload protection against: <ul style="list-style-type: none"> <li>• short-circuit, overcurrent,</li> <li>• phase failure or imbalance,</li> <li>• insulation breaks (equipment only).</li> </ul> Manual reset following thermal fault. Thermal overload test function.	Thermal overload protection against: <ul style="list-style-type: none"> <li>• short-circuit, overcurrent,</li> <li>• phase failure or imbalance,</li> <li>• insulation breaks (equipment only).</li> </ul> Manual reset following thermal fault. <ul style="list-style-type: none"> <li>• Thermal overload test function,</li> <li>• Overtorque and no-load running, alarm,</li> <li>• Motor operation log,</li> <li>• Motor parameters display on LUCM..., PC or HMI</li> <li>• Integrated Modbus communication.</li> </ul>

(2) Complete the references of the power bases according to the following table.

Example: **LU2B12**

\*\*

(3) Complete the references of the control units according to the following table.

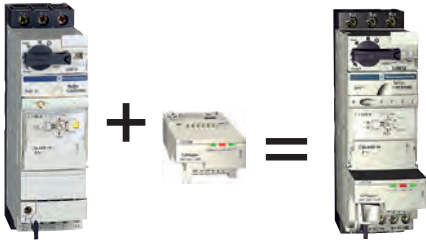
Example: **LUCA/B/D/M6X**

\*\*

### Standard control circuit voltages

24 V DC  
 24 V AC  
 48 V AC / 48...72 V DC  
 110...240 V AC / 110...220 V DC

BL  
 B  
 ES  
 FU



Type of optional function	Thermal		Thermal fault signalling		Motor load indication
	overload alarm				
Compatible with LUCA	NO	NO	NO	NO	NO
Compatible with LUCL	NO	NO	NO	NO	NO
Compatible with LUCB, LUCD	YES	YES	YES	YES	YES
Compatible with LUCM	NO	NO	NO	NO	YES
Output signal	1 NO	1 NO +1 NC	1 NC	1 NO	4...20 mA
Reset	NA	Manual	Automatic or remote		NA
References	LUFW10	LUFDH11	LUFDA01	LUFDA10	LUFV2

### Communication modules



Type of communication	Modbus	Advantys STB	Profibus DP	CANopen	DeviceNet	AS-Interface	Parallel wiring
Only compatible with 24 V DC control units LUCA..BL, LUCB..BL, LUCD..BL, LUCM..BL	YES	YES	YES	YES	YES	YES	YES
Transfer speed	19.2 Kbps	Dpg. on NIM (1)	9,6...12 Mbps	20 K...1 Mbps	125...500 Kbaud	167 Kbps	NA
Number of slaves	31 per Modbus master	Dpg. on Network Interface Module	125 per Profibus DP module	128 per CANopen module	63 per DeviceNet module	62 per AS-Interface master	8 per LU9GC02 splitter box
Pre-wired coil connection (A1 A2)	LU9BN11C, LU9MRC	LU9BN11L, LU9MRL	LU9BN11L, LU9MRL	LU9BN11L, LU9MRL	LU9BN11L, LU9MRL	LU9BN11C, LU9MRC	LU9Rxx
Connecting cable to PC	VW3 A8 306 R●●	LU9RCD●●, LU9RDD●●	TSXPBSCA●●	TSXCANC●●	DeviceNet standard	XZCG0142	TSXCDP●●●
References	LUFC033	LULC15	LULC07	LULC08	LULC09	ASILUFC51	LUFC00

(1) Network Interface Module.

### Information carried by the Modbus, Advantys STB or CANopen bus

Type of control unit	LUCA●●BL	LUCB●●BL, LUCD●●BL	LUCM●●BL
Start and Stop commands	X	X	X
Starter status (ready, running, fault)	X	X	X
Thermal alarm		X	X
Remote reset via the bus		X	X
Indication of motor load		X	X
Signalling and fault differentiation		X	X
Alarms (overcurrent, ...)			X
Remote programming and monitoring of all the functions			X
"Log" function			X
Monitoring function			X

### Contact blocks



Type of contact block	Add-on	Auxiliary				
Signalling contacts	of any fault	NC (95-96)	NO (97-98)	–	–	–
	position of control handle	NO (17-18)	NO (17-18)	–	–	–
2 auxiliary contacts module	–	–	–	NO (33-34)	NC (31-32)	NC (31-32)
	–	–	–	NO (43-44)	NO (43-44)	NC (41-42)
References	Screw clamp terminals	LUA1C11	LUA1C20	LUFN20	LUFN11	LUFN02
	Without connections	LUA1C110	LUA1C200	–	–	–



Function characteristics	Control base for use with contactors		Multifunction control unit Class 5 to 35
	TeSys D (LC1D..)	TeSys F (LC1F..)	
<ul style="list-style-type: none"> <li>- Thermal overload protection against: short-circuit, overcurrent, phase failure or imbalance, insulation breaks (equipment only).</li> <li>- Manual, automatic or remote reset,</li> <li>- Thermal overload test function,</li> <li>- Overtorque and no-load running, alarm,</li> <li>- Motor operation log,</li> <li>- Motor parameters display on LUCM..., PC or HMI,</li> <li>- Integrated Modbus communication.</li> </ul>	LUTM10BL	LUTM20BL	LUCMT1BL

### ADVANCED protection



Function characteristics	Control base for use with contactors		Advanced control unit	
	TeSys D (LC1D..)	TeSys F (LC1F..)	Class 10	Class 20
<ul style="list-style-type: none"> <li>- Thermal overload protection against: short-circuit, overcurrent, phase failure or imbalance, insulation breaks (equipment only).</li> <li>- Manual reset following thermal fault.</li> <li>- Thermal overload test function.</li> </ul>	LUTM10BL	LUTM20BL	LUCBT1BL	LUCDT1BL

### Current transformers

Type of transformer							
Supply voltage		24 V DC					
Operating current	Primary	30 A	50 A	100 A	200 A	400 A	800 A
	Secondary	1 A					
References		LUTC0301	LUTC0501	LUTC01001	LUTC02001	LUTC04001	LUTC05001

Above 32 A, the TeSys U controller provides a motor starter management system solution identical to that provided by the TeSys U starter-controller.

Used in conjunction with a short-circuit protection device and a contactor, it provides a motor starter whose functions are the same as those of a TeSys U starter-controller and, in particular, provides the following functions: overload protection, motor starter control and application monitoring.

It comprises a control unit, whose adjustment range is compatible with the secondary of current transformers, and a control base that also enables the fitting of a function module or communication module.

It requires a 24 V DC external power supply.



Type of optional function	Thermal overload alarm	Motor load indication
Compatible with LUCA	NO	NO
Compatible with LUCL	NO	NO
Compatible with LUCB, LUCD	YES	YES
Compatible with LUCM	NO	YES
Output signal	1 NO	4...20 mA
Reset	NA	NA
References	LUFW10	LUFV2

**Communication modules**



Type of communication	Modbus	Advantys STB	CANopen	DeviceNet	Parallel wiring
Only compatible with 24 V DC control units LUCA..BL, LUCB..BL, LUCD..BL, LUCM..BL	YES	YES	YES	YES	YES
Transfer speed	19.2 Kbps	Dpg. on NIM (1)	20 K...1 Mbps	125...500 Kbaud	NA
Number of slaves	31 per Modbus master	Dpg. on Network Interface Module	128 per CANopen module	63 per DeviceNet module	8 per LU9GC02 splitter box
Pre-wired coil connection (A1 A2)	LU9BN11C, LU9MRC	LU9BN11L, LU9MRL	LU9BN11L, LU9MRL	LU9BN11L, LU9MRL	LU9Rxx
Connecting cable to PC	VW3 A8 306 R●● LU9RDD●●	LU9RCD●●,	TSXCANC●●	DeviceNet standard	TSXCDP●●●
References	LUFC033	LULC15	LULC08	LULC09	LUFC00

Information carried by the Modbus, Advantys STB or CANopen bus		
Type of control unit	LUCBT1BL, LUCDT1BL	LUCMT1BL
Start and Stop commands	X	X
Starter status (ready, running, fault)	X	X
Thermal alarm	X	X
Remote reset via the bus	X	X
Indication of motor load	X	X
Signalling and fault differentiation	X	X
Alarms (overcurrent, ...)		X
Remote programming and monitoring of all the functions		X
"Log" function		X
Monitoring function		X



### Non Reversing

208V Hp	230V Hp	460V Hp	575V Hp	Non Combination		Combination Fusible		Combination Circuit Breaker	
				Type 1	Type 12	Type 1	Type 12	Type 1	Type 12
2	2	5	7.5	LE1D093A62OG70	LE1D093A72OG70	LE1D098B62OG70	LE1D098B72OG70	LE1D099E62OG70	LE1D099E72OG70
3	3	7.5	10	LE1D123A62OG70	LE1D123A72OG70	LE1D128B62OG70	LE1D128B72OG70	LE1D129E62OG70	LE1D129E72OG70
5	5	10	15	LE1D183A62OG70	LE1D183A72OG70	LE1D188B62OG70	LE1D188B72OG70	LE1D189E62OG70	LE1D189E72OG70
7.5	7.5	15	20	LE1D253A62OG70	LE1D253A72OG70	LE1D258C62OG70	LE1D258C72OG70	LE1D259E62OG70	LE1D259E72OG70
10	10	20	25	LE1D323A62OG70	LE1D323A72OG70	LE1D328C62OG70	LE1D328C72OG70	LE1D329F62OG70	LE1D329F72OG70
10	10	30	30	LE1D403A62OG70	LE1D403A72OG70	LE1D408C62OG70	LE1D408C72OG70	LE1D409F62OG70	LE1D409F72OG70
10	15	40	40	LE1D503A62OG70	LE1D503A72OG70	LE1D508D62OG70	LE1D508D72OG70	LE1D509G62OG70	LE1D509G72OG70
20	20	40	50	LE1D653A62OG70	LE1D653A72OG70	LE1D658D62OG70	LE1D658D72OG70	LE1D659G62OG70	LE1D659G72OG70
25	30	60	60	LE1D803A62OG70	LE1D803A72OG70	LE1D808D62OG70	LE1D808D72OG70	LE1D809G62OG70	LE1D809G72OG70
30	40	75	75	LE1D113A62OG70	LE1D113A72OG70	LE1D118E62OG70	LE1D118E72OG70	LE1D119J62OG70	LE1D119J72OG70
40	50	100	100	LE1D153A62OG70	LE1D153A72OG70	LE1D158E62OG70	LE1D158E72OG70	LE1D159J62OG70	LE1D159J72OG70
50	60	125	125	LE1F183A62OG70	LE1F183A72OG70	LE1F188E62OG70	LE1F188E72OG70	LE1F189J62OG70	LE1F189J72OG70
60	75	150	150	LE1F263A62OG70	LE1F263A72OG70	LE1F268F62OG70	LE1F268F72OG70	LE1F269J62OG70	LE1F269J72OG70
75	100	200	200	LE1F333A62OG70	LE1F333A72OG70	LE1F338F62OG70	LE1F338F72OG70	LE1F339K62OG70	LE1F339K72OG70
100	125	250	250	LE1F403A62OG70	LE1F403A72OG70	LE1F408F62OG70	LE1F408F72OG70	LE1F409K62OG70	LE1F409K72OG70

### Reversing

208V Hp	230V Hp	460V Hp	575V Hp	Non Combination		Combination Fusible		Combination Circuit Breaker	
				Type 1	Type 12	Type 1	Type 12	Type 1	Type 12
2	2	5	7.5	LE2D093A62OG70	LE2D093A72OG70	LE2D098B62OG70	LE2D098B72OG70	LE2D099E62OG70	LE2D099E72OG70
3	3	7.5	10	LE2D123A62OG70	LE2D123A72OG70	LE2D128B62OG70	LE2D128B72OG70	LE2D129E62OG70	LE2D129E72OG70
5	5	10	15	LE2D183A62OG70	LE2D183A72OG70	LE2D188B62OG70	LE2D188B72OG70	LE2D189E62OG70	LE2D189E72OG70
7.5	7.5	15	20	LE2D253A62OG70	LE2D253A72OG70	LE2D258C62OG70	LE2D258C72OG70	LE2D259E62OG70	LE2D259E72OG70
10	10	20	25	LE2D323A62OG70	LE2D323A72OG70	LE2D328C62OG70	LE2D328C72OG70	LE2D329F62OG70	LE2D329F72OG70
10	10	30	30	LE2D403A62OG70	LE2D403A72OG70	LE2D408C62OG70	LE2D408C72OG70	LE2D409F62OG70	LE2D409F72OG70
10	15	40	40	LE2D503A62OG70	LE2D503A72OG70	LE2D508D62OG70	LE2D508D72OG70	LE2D509G62OG70	LE2D509G72OG70
20	20	40	50	LE2D653A62OG70	LE2D653A72OG70	LE2D658D62OG70	LE2D658D72OG70	LE2D659G62OG70	LE2D659G72OG70

### 1 Phase - Non Reversing

120V Hp	240V Hp	Non Combination	
		Type 1	Type 12
0.3	1	LESD093A62OG70	LESD093A72OG70
0.5	2	LESD123A62OG70	LESD123A72OG70
1	3	LESD183A62OG70	LESD183A72OG70
2	3	LESD253A62OG70	LESD253A72OG70
2	5	LESD323A62OG70	LESD323A72OG70
3	5	LESD403A62OG70	LESD403A72OG70
3	7.5	LESD503A62OG70	LESD503A72OG70
5	10	LESD653A62OG70	LESD653A72OG70
7.5	15	LESD803A62OG70	LESD803A72OG70

Note: All starters listed are complete with 120VAC coils. For other control voltages, please consult your local Schneider Electric distributor.

Note: Overload relay must be ordered separately. Please consult you local Schneider Electric distributor for assistance.





Field Installable Operators	Description	Nameplate	Catalog Number
<b>One Operator</b>	Push button (double touch)	I-O	LA9CA06IO
	2 Position Selector Switch	OFF-ON	LA9CA06DT
	3 Position Selector Switch	HAND-OFF-AUTO	LA9CA06ET
	Pilot Light Full Voltage	POWER ON	LA9CA06ST
	Pilot Light Transformer	POWER ON	LA9CA06FT*
	Pilot Light LED	POWER ON	LA9CA16ST*
<b>Two Operators</b>	2 Push Buttons	START/STOP	LA9CA06GT
	2 Position Selector Switch + Full Voltage Pilot	OFF-ON/POWER ON	LA9CA06WT
	2 Position Selector Switch + Transformer Pilot	OFF-ON/POWER ON	LA9CA06HT*
	2 Position Selector Switch + LED Pilot	OFF-ON/POWER ON	LA9CA06WT*
	3 Position Selector Switch + Full Voltage Pilot	HAND-OFF-AUTO/POWER ON	LA9CA06UT
	3 Position Selector Switch + Transformer Pilot	HAND-OFF-AUTO/POWER ON	LA9CA06JT*
<b>Three Operators</b>	3 Position Selector Switch + LED Pilot	HAND-OFF-AUTO/POWER ON	LA9CA16UT*
	3 Push buttons	FORWARD/REVERSE/STOP	LA9CA06LT
	2 Push buttons + LED Pilot	START/STOP/POWER ON	LA9CA06VT*
	2 Pos. Selector Switch + 2 Transformer Pilots (480 or 600 V)	OFF-ON/RUN/TRIP	LA9CA06PT*
	2 Pos. Selector Switch + 2 LED Pilots (24, 120, or 240 V)	OFF-ON/RUN/TRIP	LA9CA06PT*
	3 Pos. Selector Switch + 2 Transformer Pilots (480 or 600 V)	HAND-OFF-AUTO/RUN/TRIP	LA9CA06QT*
	3 Pos. Selector Switch + 2 LED Pilots (24, 120, or 240 V)	HAND-OFF-AUTO/RUN/TRIP	LA9CA06QT*

\*Add the appropriate suffix to the catalogue number

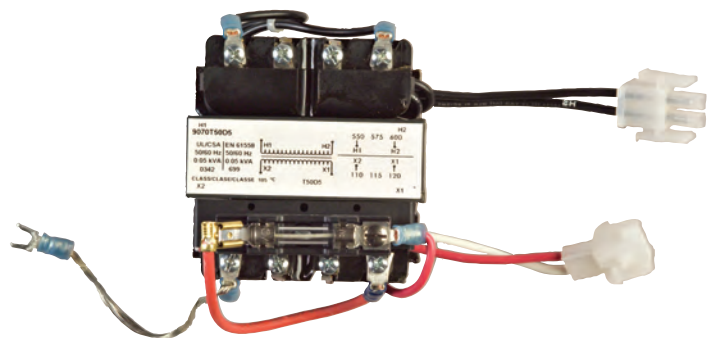
(volts)	24V	120V	208/240V	480V	600V
Code	B	G	M	T	X

Note LED type are only available for voltage codes: B,G &M. Above catalogue numbers specify green pilot lights as standard. Dual pilot lights are green and amber. For other colours please consult the catalogue.

Adapter for local + Remote Control Description	Catalog number
3 wire adaptor	LA9AADIS3
4 wire adaptor	LA9AADIS4
5 wire adaptor	LA9AADIS5

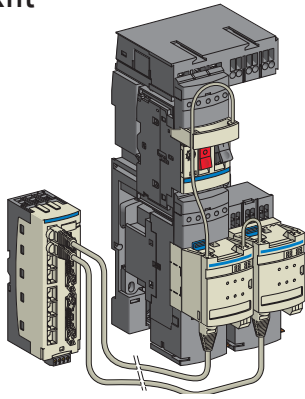
Control circuit transformer						
VA Rating	For LE1 starters		Catalogue			
50VA	D09-D32		LA9TFD32*			
100VA	D40-D80		LA9TFD80*			
Primary						
	Voltage	600V	480V	240V	208V	120V
Secondary	120V	X	T	M	L	-
	24V	A	B	C	D	E

Replace \* with Suffix from above table



# Installation system

## Presentation



TeSys Quickfit is a modular system which standardises and simplifies the implementation of motor starters with its pre-wired control and power circuits.

Installation of a motor starter becomes quick, simple, safe and flexible.

In addition, this system:

- enables the motor starter to be customised at a later date,
- reduces maintenance time and
- optimises panel space by reducing the number of terminals and intermediate interfaces and the amount of ducting.

The motor starters concerned are those created by combining:

- GV2 ME or GV3 P circuit-breakers, with an operating limit of 80% of the maximum current at an ambient temperature of 60 °C, up to 690 V
- with 9 to 65 A TeSys D (LC1) contactors.

This offer comprises components for pre-wiring

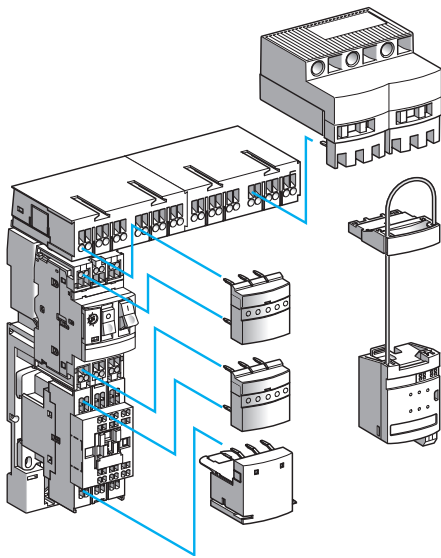
- the power part,
- the control part.

### Components for pre-wiring the power part

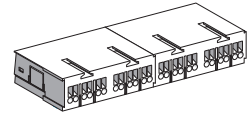
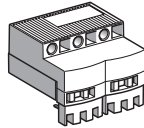
- a **power kit** comprising, for each starter, a plate for mounting the contactor and the circuit-breaker, and two power connection modules,
- a **power splitter box** for 2 or 4 starters,
- an **upstream terminal block** for a power supply up to 60 A (16 mm<sup>2</sup>),
- a **downstream terminal block** for connecting the motor power supply cables and the earth cables (6 mm<sup>2</sup>).

### Components for pre-wiring the control part

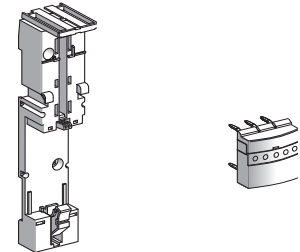
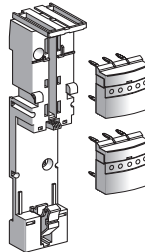
- a **control circuit connection module** that mounts directly on the contactor and the circuit-breaker of each starter. This module integrates the status and control information of this particular motor starter.
- a **parallel wiring module** enabling grouping of the information relating to each motor starter:
  - **HE 10**, intended for centralised applications. The information is transmitted to the PLC via the Advantys Telefast pre-wired system.
  - **STB**, intended for decentralised automation architectures. This module is integrated in an Advantys STB configuration for connection to the PLC via a fieldbus.



## 9...25 A power pre-wiring components



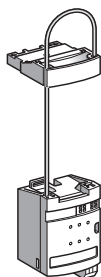
Type	Terminal block		60 A power splitter box	
	Upstream	Downstream	Extension by LAD32●	
Maximum c.s.a. of connection	16 mm <sup>2</sup>	6 mm <sup>2</sup>	–	–
Use	Splitter boxes supply	Motor cables	–	–
Number of starters	–	–	2	4
Reference	LAD3B1	LAD331	LAD322	LAD324



Type	Connection kit	Mounting plate for	Power connection
	For D.O.L. starter (1)	GV2 ME & contactor	module
Composition	1 mounting plate LAD311 for GV2ME 2 power connection modules LAD341	For 1 motor starter	
Reference	LAD252	LAD311	LAD341

(1) For a reversing starter order 2 connection kits **LAD252**

## Control-command pre-wiring components



Type	Connection module			
TeSys D coil voltage	12...250 V AC or 5...130 V DC		24 V DC	
Type of coil control relay	Electronic		Without relay	
Type of motor starter	Direct	Reversing	Direct	Reversing
Reference	LAD9AP31	LAD9AP32	LAD9AP3D1	LAD9AP3D2

Type	24 V DC parallel wiring module	
PLC/motor starter side connectors	Splitter box 2 x HE10/8 x RJ45	Advantys STB parallel interface module -4 x RJ45
Reference	LU9G02	STBEPI2145

4

## Accessories

Type	Connecting cables				
	(1)	From splitter box LU9G02 to the PLC			
Connectors	2 x RJ45	2 HE10		Bare wires and HE10	
Gauge / c.s.a.	-	22 / 0.324 mm <sup>2</sup>	28 / 0.080 mm <sup>2</sup>	22 / 0.324 mm <sup>2</sup>	
Reference	L = 0.3 m	LU9R03	-	-	
	0.5 m	-	TSXCDP053	-	
	1 m	LU9R10	TSXCDP103	ABFH20H100	
	2 m	-	TSXCDP203	ABFH20H200	
	3 m	LU9R30	TSXCDP303	ABFH20H300	TSXCDP301
	5 m	-	TSXCDP503	-	TSXCDP301

(1) From connection module LAD9AP3 to splitter box LU9G02 or module STBEPI2145

Type	Connectors		Connecting cable
	Spring terminals	Self-stripping	
Use	External contact, auxiliary power supply		Between communication module APP1C and splitter box LU9GG02
Reference	APE1PRE21	APE1PAD21	APP2AH40H060

Standard TeSys products can be used for elevator and safety applications when applied as followings:

## Elevator approvals per CSA22.2 / CSA B44.1 / ASME 17.5

File LR43364

Single Phase	Three Phase				TeSys Series	Previous Generation
	200/208V	230/240V	480V	600V		
240V						
1.5	2	3	7.5	7.5	LC1D12	LC1DFD**
3	5	7.5	15	20	LC1D25	LC1DLD**
5	10	-	-	-	LC1D32	
7.5	-	15	25	30	LC1D50	LC1DRD**
10	-	20	40	50	LC1D65	LC1DTD**
15	-	25	50	50	LC1D80	LC1DWD**
15	-	30	60	50	LC1D150	
20	30	30	75	75	LC1F185	LC1FGD3
-	40	40	-	-	LC1F265	
-	50	50	-	-	LC1F330	
-	60	60	-	-	LC1F400	
-	75	75	-	-	LC1F500	
-	100	100	-	-	LC1F630	

## Contactors in Safety Circuits



Contactors are an integral part of safety applications. Schneider Electric offers a wide variety of contactors which are suitable for use in safety applications due to mechanically linked power contacts and mirror contacts.

A number of standards have been published in recent years that use the concept of functional safety. Examples include IEC 61508, IEC 62061, IEC 61511, ISO 13849-1, and IEC 61800-5-2 which have all been adopted in Europe and published as ENs. Functional safety is a relatively recent concept that replaces the old 'Categories' of behavior under fault conditions that were defined in EN 954-1, and were often mistakenly described as 'Safety Categories'.

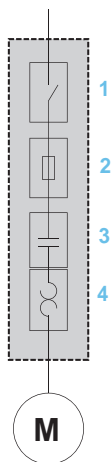
Now that EN 954-1 is withdrawn, the available alternatives are EN 62061 and EN ISO 13849-1. The performance of each safety function is specified as either a SIL (Safety Integrity Level) in the case of EN 62061 or PL (Performance Level) in the case of EN ISO 13849-1. In both cases the architecture of the control circuit which delivers the safety function is a factor, but unlike EN 954-1 these new standards require consideration of the reliability of the selected components.

In the past there has been a tendency for components specified to a high category of EN 954-1 to be chosen instead of components that have a lower category, but might actually have more suitable functions. This might be as a result of the misconception that the categories are hierarchical such that for example, category 3 is always "better" than category 2 and so on. Functional safety standards are intended to encourage designers to focus more on the functions that are necessary to reduce each individual risk, and what performance is required for each function, rather than simply relying on particular components.

For more information on Functional Safety, please visit our web site at: [www.schneider-electric.com](http://www.schneider-electric.com) under: Solutions > Machines for OEMs > Machine control solutions

## Combination Starters – Type E &amp; Type F

Combination Starters are the most common type of packaged motor starter. They are called 'Combination' because of their structure and their combined functions. The figure opposite shows the four combined functions that constitute a complete motor starter circuit, defined as a "Motor branch circuit" by the CEC and NEC. CSA 22.2 no 14 and UL508 currently give different types of combination starter that meet the requirements of a «Motor branch circuit».



- 1 Motor disconnect (disconnect switch)
- 2 Motor Branch Circuit Protection (short circuit protection)
- 3 Motor controller (contactor)
- 4 Motor Overload Protection (thermal overload relay)

**Type E**, called “**self-protected combination starter**”, covers all these functions and can be controlled manually (thermal-magnetic circuit-breaker) or remotely (starter-controller). Type E starters withstand faults within their declared nominal rating without sustaining damage, after which they can be put back into service. In addition, they can withstand more severe short-circuit and durability performance tests without welding or excessive wear of the contact tips.

**Type F**, called “**Combination motor starter**”, consists of a type E manual starter (thermal-magnetic circuit-breaker) combined with a contactor. These starters are evaluated by means of basic short-circuit tests, but are not considered as “self-protected”. For this combination, the type E starter must be marked “Combination Motor Controller when used with ...”, followed by the reference of the load side contactor.

**At present, CSA does not recognize Type F combinations. Manual starters used with contactors can be used in Group Protection as described below.**

## UL508A &amp; Control Panels

To help users properly coordinate their motor control equipment with their distribution system in the event of a fault, article 409 of the 2005 NEC requires panel builders to list the short-circuit withstand rating of their motor control panels. According to standard UL508A, manufacturers must use the short-circuit withstand value of the lowest rated device as the nominal withstand rating of the panel, unless the devices have been tested together for a higher coordinated rating. The minimum “**short-circuit current rating**” (SCCR), on motor control components for horsepower ratings of 50 hp or below is 5000 A. Using a **type E or type F** combination starter eliminates the coordination problems of using individual components for the “motor branch circuit protection”, “motor controller” and “motor overload protection” functions. The panel builder uses the declared short-circuit current rating for the combination starter. This value is generally higher than 5000 A. This makes it easier to list the short-circuit current ratings and to check the compatibility of a UL508A motor control panel within a given distribution system.

## Group Protection

Both the CEC and NEC allow a single short-circuit protection device to be used for more than one motor circuit if the components used are marked and listed for such use. Components suitable for use in group protection, known as “**motor group installations**”, can be marked in one of the following two ways:

**Case n° 1**

The contactor and the motor overload relay are both listed as suitable for group installation. An inverse time circuit-breaker can be used as the short-circuit protection device if it is also listed as suitable for group installation. The panel builder must therefore make sure that the short-circuit protection device selected (fuses or inverse time circuit-breaker) does not exceed the value allowed by rule 28-206 of the CEC or article 430.40 of the NEC for the smallest overload relay used in the circuit. Once these conditions have been met, the panel builder can reduce the size of the conductor connecting the short-circuit protection device to the individual motor contactor/overload relay, to one third of the size of the upstream circuit conductor supplying the protection device. The panel builder must limit the length of the motor starter conductor (connecting the short-circuit protection device to the motor contactor/overload relay) to a maximum of 7.5 m (25 feet).

**Case n° 2 (Not approved under the CEC for US export applications only)**

The motor contactor and overload relay are listed as suitable for “**tap conductor protection**” in group installations. This category allows the panel designer to reduce the size of the conductor connecting the short-circuit protection device to the individual motor contactor/overload relay, to one tenth of the size of the upstream circuit conductor supplying the protection device. The designer must limit the length of this conductor to a maximum of 3.05 m (10 feet). In both cases, the supply circuits must not be less than 125 % of the connected motor FLA (Full Load Amps) rating. For panel builders, using **type F** combination starters in group installations simplifies group motor considerations. Each starter is a fully coordinated motor branch circuit. The panel builder follows the same NEC requirements for sizing the supply conductors as those required for single motor branch circuits. The size of the supply conductors can be reduced in accordance with the specifications of article 430.28. This allows the same flexibility in conductor sizing as that offered in article 430.53 (D), without a requirement to check the short-circuit protection rating marked on the components and the overload relay limit. A UL508A panel does not need a short-circuit protection device when each motor starter installed is a **type F**. The upstream short-circuit protection device supplying the starter protects the panel. The panel builder only has to consider the panel/enclosure disconnect requirements specified by the NEC or local codes.



### Maximum operational current (device in open air)

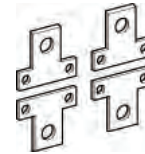
Contactors			LC1-/LP1-	LC1-/LP1-	LC1-	LC1-	LC1-	LC1-	LC1-	LC1-
■ 3-pole			K09	K12	D09	D12	D18	D25	D32	D40A
■ 4-pole					DT20	DT25	DT32	DT40		
LC2- changeover contactor pairs, factory assembled			K09004	K12004	DT20	DT25	DT32	DT40		DT60A
UL/CSA Maximum continuous	A		20	20	20	25	32	40	50	60
Operational current in AC-1, in A,	≤ 40° C	A	20	20	20	25	32	40	50	60
according to ambient temperature	≤ 60° C	A	20	20	20	25	32	40	50	60
	≤ 70° C									
Maximum operational	220/230 V	kW	8	8	8	9	11	14	18	21
power ≤ 60° C	240 V	kW	8	8	8	9	12	15	19	23
	380/400 V	kW	14	14	14	15	20	25	31	37
	415 V	kW	14	14	14	17	21	27	34	41
	440 V	kW	15	15	15	18	23	29	36	43
	500 V	kW	17	17	17	20	23	33	41	49
	660/690 V	kW	22	22	22	27	34	43	54	65

### Increase in operational current

#### by parallel connection of poles (Not for CSA/UL applications)

Apply the following coefficients to the currents or powers above; these coefficients take into account an often unbalanced distribution of current between the poles:

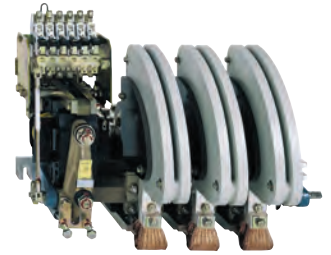
- 2 poles in parallel K = 1.6
- 3 poles in parallel K = 2.25
- 4 poles in parallel K = 2.8



### Connection accessories for heating applications

Paralleling links for:		Reference
■ TeSys K	2 poles	with screw clamp terminals LA9-E01
	4 poles	with screw clamp terminals LA9-E02
■ TeSys D	2 poles	D09...D38 LA9-D2561
		DT20 and DT25 (4P) LA9-D1261
		DT32...DT40 (4P) LAD-D96061
	3 poles	D40A...D65A LAD-9P32
		D80 LA9-D80961
		D09...D38 LAD-9P3 <sup>(1)</sup>
4 poles	D40A...D65A LAD-9P33	
	D80 LA9-D80962	
	DT20...DT25 LA9-D1263	
	D40A...D65A 2 x LAD-9P33	
■ TeSys F	2 to 2	D80 LA9-D80963
		LC1-F1154 LA9-FF602
		LC1-F1504, F1854 LA9-FG602
		LC1-F2254, F2654, F3304, F4004 LA9-FH602
		LC1-F5004 LA9-FK602
LC1-F6304 LA9-FL602		

(1) Link that can be split, allowing parallel connection of 2 poles



	LC1- D50A	LC1- D65A	LC1- D80	LC1- D115	LC1- F185	LC1- F225	LC1- F265	LC1- F330	LC1- F400	LC1- F500	LC1- F630	LC1- F780	LC1- F800	LC1- BL	LC1- BM	LC1- BP	LC1- BR
		<b>DT80A</b>	<b>D80004</b>	<b>D115004</b>	<b>F1854</b>	<b>F2254</b>	<b>F2654</b>										
	70	80	110	175	200	250	285	370	420	700	1000	1350	1000	800	1250	2000	2750
	80	80	125	200	275	315	350	400	500	700	1000	1600	1000	800	1250	2000	2750
	80	80	125	200	275	280	300	360	430	580	850	1350	850	700	1100	1750	2400
					180	200	250	290	340	500	700	1100	700	600	900	1500	2000
	29	29	45	80	90	100	120	145	170	240	350	550	350	300	425	700	1000
	31	31	49	83	100	110	125	160	180	255	370	570	370	330	450	800	1100
	50	50	78	135	165	175	210	250	300	430	600	950	600	500	800	1200	1600
	54	54	85	140	170	185	220	260	310	445	630	1000	630	525	825	1250	1700
	58	58	90	150	180	200	230	290	330	370	670	1050	670	550	850	1400	2000
	65	65	102	170	200	220	270	320	380	660	750	1200	750	600	900	1500	2100
	86	86	135	235	280	300	370	400	530	740	1000	1650	1000	800	1100	1900	2700

### Mounting accessories for changeover contactor pairs

(for customer assembly)

Contactor type	Set of power connections	Mechanical interlock	Contactor type	Set of power connections	Mechanical interlock
<b>2 contactors, vertically mounted</b>					
■ 4-pole changeover pairs with locking device components					
LC1-B		EZ2-LB0601			
<b>2 identical contactors, horizontally mounted</b>					
■ with electrical interlocking kit for the contactors					
LC1-DT20...DT40	LAD-T9R1V <sup>(1)</sup>				
■ mechanical interlock with integral electrical interlocking					
LP1-D80004	LA9-D8070	LA9-D8002	LC1-D115004	LA9-D11570	LA9-D11502
■ without electrical interlocking <sup>(2)</sup>					
LC1-DT20...DT32	LAD-T9R1 <sup>(2)</sup>		LC1-DT40 and DT60	LAD-T9R2 <sup>(2)</sup>	
LP1-D80004	LA9-D8070	LA9-D80978			
<b>2 contactors of identical rating, horizontally mounted</b>					
■ 4-pole changeover pairs					
LC1-F1154	LA9-FF977	LA9-FF970	LC1-F1504	LA9-F15077	LA9-FF970
LC1-F1854	LA9-FG977	LA9-FG970	LC1-F2254	LA9-F22577	LA9-FG970
LC1-F2654	LA9-FH977	LA9-FJ970	LC1-F3304	LA9-FJ977	LA9-FJ970
LC1-F4004	LA9-FJ977	LA9-FJ970	LC1-F5004	LA9-FK977	LA9-FJ970
LC1-F6304	LA9-FL977	LA9-FL970			
■ 3-pole changeover pairs with electrical interlocking					
LC1-D115 and D150	LA9-D11571	LA9-D11502			
<b>reversers assembled using 2 contactors, vertically mounted</b>					
■ 4-pole changeover pairs using contactors of identical rating <sup>(3)</sup>					
LC1-F1154 or F1505	(3)	LA9-FF4F	LC1-F115 or F1154	LC1-F185 or F1854	LA9-FG4F
LC1-F1854	(3)	LA9-FG4G	or LC1-F150 or F1504	LC1-F225 or F2254	LA9-FG4F
LC1-F2254	(3)	LA9-FG4G		LC1-F265 or F2654	LA9-FH4F
LC1-F2654 or F3304	(3)	LA9-FH4H		LC1-F300 or F3304	LA9-FH4F
LC1-F4004	(3)	LA9-FJ4J		LC1-F400 or F4004	LA9-FJ4F
LC1-F5004	(3)	LA9-FK4K		LC1-F500 or F5004	LA9-FK4F
LC1-F6304	(3)	LA9-FL4L		LC1-F630, F6304 or F800	LA9-FL4F
LC1-F7804	(4)	LA9-FX971 <sup>(4)</sup>	LC1-F185 or F1854	LC1-F265 or F2654	LA9-FH4G
			or LC1-F225 or F2254	LC1-F330 or F3304	LA9-FH4G
				LC1-F400 or F4004	LA9-FJ4G
				LC1-F500 or F5004	LA9-FK4G
				LC1-F630, F6304 or F800	LA9-FL4G
			LC1-F265 or F2654	LC1-F400 or F4004	LA9-FJ4H
			or LC1-F330 or F3304	LC1-F500 or F5004	LA9-FK4H
				LC1-F630, F6304 or F800	LA9-FL4H
			LC1-F400 or F4004	LC1-F500 or F5004	LA9-FK4J
				LC1-F630, F6304 or F800	LA9-FL4J
			LC1-F500 or F5004	LC1-F630, F6304 or F800	LA9-FL4K

(1) Including mechanical interlock.

(2) Order separately 2 auxiliary contact blocks LAD-N\*1 to obtain electrical interlocking between the two contactors.

(3) Power connections to be made by the customer.

(4) Double mechanical interlock mechanism with 2 interlock connecting rods and 4 power connecting links.





CA2KN40\*\*

Control relays						
<ul style="list-style-type: none"> <li>■ Mounting on 35 mm DIN 3 track or 4 screw direct mounting</li> <li>■ Screws in open "ready-to-tighten" position</li> <li>■ NEMA A600, Q600</li> <li>■ IEC AC15, DC13</li> </ul>	Control Circuit		Type of Termination	Contact Configuration		Catalog Number (1)
	Supply	Consumption		N.O.	N.C.	
<ul style="list-style-type: none"> <li>■ Compatible with programmable controller outputs</li> <li>■ LED indicator incorporated</li> <li>■ Wide range coil (70 to 130% U<sub>c</sub>), suppressor fitted as standard</li> <li>■ Mounting on 35 mm DIN 3 track or 4 screw direct mounting</li> <li>■ Screws in open "ready-to-tighten" position</li> </ul>	ac	4.5 VA	screw clamp	4	0	CA2KN40**
				3	1	CA2KN31**
				2	2	CA2KN22**
	ac	4.5 VA	spring terminals	4	0	CA2KN403**
				3	1	CA2KN313**
				2	2	CA2KN223**
	ac	4.5 VA	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA2KN407**
				3	1	CA2KN317**
				2	2	CA2KN227**
	ac	4.5 VA	solder pins for printed circuit board	4	0	CA2KN405**
				3	1	CA2KN315**
				2	2	CA2KN225**
dc	3 W	screw clamp	4	0	CA3KN40**	
			3	1	CA3KN31**	
			2	2	CA3KN22**	
dc	3 W	spring terminals	4	0	CA3KN403**	
			3	1	CA3KN313**	
			2	2	CA3KN223**	
dc	3 W	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA3KN407**	
			3	1	CA3KN317**	
			2	2	CA3KN227**	
dc	3 W	solder pins for printed circuit board	4	0	CA3KN405**	
			3	1	CA3KN315**	
			2	2	CA3KN225**	

### Low consumption control relays

<ul style="list-style-type: none"> <li>■ Compatible with programmable controller outputs</li> <li>■ LED indicator incorporated</li> <li>■ Wide range coil (70 to 130% U<sub>c</sub>), suppressor fitted as standard</li> <li>■ Mounting on 35 mm DIN 3 track or 4 screw direct mounting</li> <li>■ Screws in open "ready-to-tighten" position</li> </ul>	Supply	Consumption	Type of Termination	Contact Configuration		Catalog Number (1)
				N.O.	N.C.	
<ul style="list-style-type: none"> <li>■ Compatible with programmable controller outputs</li> <li>■ LED indicator incorporated</li> <li>■ Wide range coil (70 to 130% U<sub>c</sub>), suppressor fitted as standard</li> <li>■ Mounting on 35 mm DIN 3 track or 4 screw direct mounting</li> <li>■ Screws in open "ready-to-tighten" position</li> </ul>	dc	1.8 W	screw clamp	4	0	CA4KN40***
				3	1	CA4KN31***
				2	2	CA4KN22***
	dc	1.8 W	spring terminals	4	0	CA4KN403***
				3	1	CA4KN313***
				2	2	CA4KN223***
	dc	1.8 W	Slip-on 1 x 6.35 or 2 x 2.8	4	0	CA4KN407***
				3	1	CA4KN317***
				2	2	CA4KN227***
	dc	1.8 W	solder pins for printed circuit board	4	0	CA4KN405***
				3	1	CA4KN315***
				2	2	CA4KN225***

(1) Complete the catalog number by adding the proper voltage code from the table below. Example: CA4KN227BW3.

### CA2-K control relays (0.8–1.15 U<sub>c</sub>) (0.85–1.1 U<sub>c</sub>)

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 U<sub>c</sub>)

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 U<sub>c</sub>)

Volts dc	12	24	48	72
Code	JW3	BW3	EW3	SW3

## Instantaneous auxiliary contact blocks

<ul style="list-style-type: none"> <li>■ Clip-on front mounting, 1 block per control relay</li> <li>■ Auxiliary contact module not suitable for safety circuits</li> </ul>	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



CAD32\*\*

**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
				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 Sealed			Normal		Catalog Number
		N.O.	N.C.	(1)	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)

### 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
1 N.C. and 1 N.O.	1	Off-Delay	spring terminal	0.1 to 3 sec. (2)	LADR03
				0.1 to 30 sec.	LADR23
				10 to 180 sec.	LADR43

(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



# 5

Schneider Electric offers complete and compact ranges of power supplies (switch mode or filtered rectified) and transformers.

With the Phaseo range, your installations will be equipped with a high quality AC or DC power supply compliant with international standards.

## Phaseo

Phaseo offers universal power supplies and protection modules with a very wide operating range to provide continuity of service for your installations.

An innovative offer, Phaseo integrates numerous features which set the standard across this market.



# 5 | Power Supplies



## Power supplies

Regulated switch mode, filtered rectified power supplies

Accessories

**Phaseo ABL8, ABL1** ..... 5/2 to 5/5

## Transformers

**9070 Industrial control transformers** ..... 5/6 & 5/7

## Connection

Terminal blocks

**AB1** ..... 5/8 & 5/9

Cable ends

**DZ5/AZ5** ..... 5/10



Type of power supply	7 to 60 W Single-phase					
Rated input voltage	100...240 VAC					
Rated output voltage	24 V				5 V	12 V
Rated power / Rated output current	7.5 W / 0.3 A	15 W / 0.6 A	30 W / 1.2 A	60 W / 2.5 A	20 W / 4 A	25 W / 2 A
Reset	Auto					
Conformity to IEC 61000-3-2	Without					
Certifications	cULus, cCSAus, TUV, CE, C-Tick					
Dimensions W x D x H (mm)	36 x 59 x 90		54 x 59 x 90	72 x 59 x 90	54 x 59 x 90	
Fixing (mm)	DIN rail 35x7.5 or 35x15 or on panel mount by screw					
References	ABL8MEM24003	ABL8MEM24006	ABL8MEM24012	ABL7RM24025	ABL8MEM05040	ABL8MEM12020



5

Type of power supply	72 to 240 W Single-phase - Wide input range		
Rated input voltage	100...120 VAC and 200...500 VAC		
Rated output voltage	24 V		
Rated power / Rated output current	72 W / 3 A	120 W / 5 A	240 W / 10 A
Permissible temporary inrush current (boost)	1.5 In during 4 s		
Reset	Auto or manual		
Conformity to IEC 61000-3-2	Yes		
Diagnostic relay (output voltage > 21.6V)	No	Yes	
Certifications	cCSAus, CB scheme, CE		
Dimensions W x D x H (mm)	44 x 120 x 143	56 x 120 x 143	85 x 140 x 143
Fixing (mm)	DIN rail 35x7.5 or 35x15		
References	ABL8RPS24030	ABL8RPS24050	ABL8RPS24100





### 60 to 144 W single-phase

100...240 VAC			
24 V		12 V	
72 W / 3 A	120 W / 5 A	60 W / 5 A	48 V
Auto		Auto or manual	
No		Yes	
cULus, cCSAus, TUV, CE, C-Tick			
27 x 120 x 120		54 x 120 x 120	
DIN rail 75x7.5, 35x7.5 or 35x15			
<b>ABL8REM24030</b>	<b>ABL8REM24050</b>	<b>ABL7RP1205</b>	<b>ABL7RP4803</b>



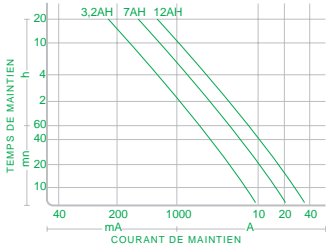
### 480 to 960 W single and 3-phases

100...120 VAC and 200...240 VAC	3 x 380...500 VAC	
24 V		
480 W / 20 A	960 W / 40 A	
1.5 In during 4 s		
Auto or manual		
Yes		
Yes		
cCSAus, CB scheme, CE		
145 x 140 x 143	95 x 155 x 143	165 x 155 x 143
DIN rail 35x7.5 or 35x15		
<b>ABL8RPM24200</b>	<b>ABL8WPS24200</b>	<b>ABL8WPS24400</b>

### Type of module

<b>Compatibility</b>	Output connection of power supplies ABL8RPS24..., ABL8WPS24..., ABL4RSM24... and ABL4WSR24...	
<b>Rated output voltage</b>	5 V	12 V
<b>Rated output current</b>	6 A	2 A
<b>Certifications</b>	cCSAus, CB scheme, CE	
<b>Dimensions W x D x H (mm)</b>	44 x 140 x 146	
<b>Fixing (mm)</b>	DIN rail 35x7.5 or 35x15	
<b>References</b>	<b>ABL8DCC05060</b>	<b>ABL8DCC12020</b>

### Converters DC/DC



Type of module	Microcuts and cuts network solutions. (1)		
<b>Compatibility</b>	Output connection of Universal power supplies ABL8RPS24..., ABL8WPS24..., ABL4RSM24..., ABL4WSR24...		
<b>Technology</b>	Buffer module	battery backup module + battery	
<b>Rated output voltage</b>	40 A	20 A	40 A
<b>Holding time 1A</b>	2 s typique	adjustable from 10 s to 24 H (battery depending)	
<b>Holding time for maximum current output</b>	100 ms typique	adjustable from 10 s to 30 mn (battery depending)	adjustable from 10 to 10 mn (battery depending)
<b>Certifications</b>	cCSAus, CB scheme, CE		
<b>Dimensions W x D x H (mm)</b>	85 x 140 x 146	86 x 175 x 143	86 x 175 x 143
<b>Fixing (mm)</b>	DIN rail 35x7.5 or 35x15 (1)		
<b>References Control module</b>	<b>ABL8BUF24400</b>	<b>ABL8BBU24200</b>	<b>ABL8BBU24400</b>
<b>References battery</b>	3,2AH (2)	<b>ABL8BPK24A03</b>	<b>ABL8BPK24A03</b>
	7AH (2)	<b>ABL8BPK24A07</b>	<b>ABL8BPK24A07</b>
	12AH (2)	<b>ABL8BPK24A12</b>	<b>ABL8BPK24A12</b>

(1) Battery module except 7AH and 12AH. For battery module 3.2AH with ABL1A02 kit.

(2) Battery to be chosen according to the graph page 6/2

5



Type of module	Redundancy power supplies solutions
<b>Compatibility</b>	Connection of 2 power supplies inputs ABL4... or ABL8RP, ABL8WP up to 20 A (1 power supply 40A)
<b>Rated output voltage</b>	24 V
<b>Rated output current</b>	40 A
<b>Certifications</b>	cCSAus, CB scheme, CE
<b>Dimensions W x D x H (mm)</b>	44 x 140 x 146
<b>Fixing (mm)</b>	DIN rail 35x7.5 ou 35x15
<b>References</b>	<b>ABL8RED24400</b>

Type of module	Starter protection solution
<b>Compatibility</b>	Output connection of Universal power supplies ABL8RPS24100..., ABL8RPM24200..., ABL8WPS24..., ABL4RSM24... and ABL4WSR24...
<b>Rated output current</b>	10A par voie
<b>Calibres</b>	1 / 2.5 / 4 / 5 / 7 / 8 / 10 A
<b>Number of channels</b>	4
<b>Diagnostic relay</b>	Yes
<b>Manual switch off (1 per channel)</b>	Two-pole
<b>Certifications</b>	cCSAus, CB scheme, CE
<b>Dimensions (mm)</b>	71 x 109 x 110
<b>Fixing (mm)</b>	DIN rail 35x7.5 or 35x15 or on panel mount by screw
<b>References</b>	<b>ABL8PRP24100</b>



Type of power supply	60W to 240W						
Input voltage	85...264 VAC			85...132 VAC / 170...264 VAC			
Output voltage	12 VDC		24 VDC		24 VDC		
Rated power / Rated output current	60 W / 5 A	100 W / 8.3 A	60 W / 2.5 A	100 W / 4.2 A	150 W / 6.2 A	240 W / 10 A	
Certifications	UL, c CSA us, CE, Ctick						
Dimensions W x D x H (mm)	150 x 38 x 98	200 x 38 x 98	150 x 38 x 98	200 x 38 x 98	200 x 50 x 98	200 x 65 x 98	
Fixing (mm)	Panel mount by scrow, by bracket ABL1A01 (1) , on DIN rail 35mm by panel ABL1A02 (1).						
References	Without filter	ABL1REM12050	–	ABL1REM24025	ABL1REM24042	ABL1REM24062	ABL1REM24100
	With filter (2)	–	ABL1RPM12083	–	ABL1RPM24042	ABL1RPM24062	ABL1RPM24100

(1) has to order separately.

(2) Anti harmonic IEC/EN 61000-3-2



Type of power supply	Control Circuit Transformers						
Rated UL/CSA	50VA	75VA	100VA	150VA	200VA	250VA	
Rated CE	50VA	75VA	100VA	150VA	200VA	160VA	
Inrush UL VA at 20% Power factor / at 40% Power factor	95% of secondary voltage	193/151	271/210	339/266	666/529	588/459	1416/1057
	90% of secondary voltage	266/215	396/318	499/404	893/731	815/659	1910/1494
	85% of secondary voltage	339/282	520/430	659/549	1120/942	1041/866	2388/1936
Certification	"UL-E612939, CSA LR 37055, EN61558/01.89 (TUV)"						
Catalogue Number	Non fused	9070T50*	9070T75*	9070T100*	9070T150*	9070T200*	9070T250*
	Fused (primary and secondary)	9070TF50*	9070TF75*	9070TF100*	9070TF150*	9070TF200*	9070TF250*

\* Complete the catalogue number by adding the voltage code from Table 1.

Table 1 - Voltage Codes

Primary Voltage	Secondary Voltage	Voltage Code	Accessory key
120	120	D24	I
120	12/24	D13	I
208	24	D14	I
208	120	D3	I
277	24	D25	I
277	120	D4	I
380	110	D6	I
415	110	D17	I
480	240	D12	I
480	277	D22	I
600	120	D5	I
600	12/24	D36	I
600	120/240	D37	I
120/240	24	D23	I
208/230/460	115	D20	II
208/240/277/380/480	24	D19	III
208/277	120	D51	I
208/277/380	95/115	D18	II
230/460/575	95/115	D32	II
240/480	24	D2	I
240/480	120	D1	I
240/480	120/240	D31	I
240/480	24/120	D15	I
380/400/415	12/24	D52	I
380/400/415	115/230	D33	I

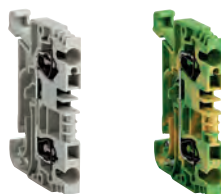




300VA	350VA	500VA	750VA	1000VA	1500VA	2000VA	3000VA	5000VA
200VA	300VA	350VA	500VA	750VA	1000VA	1500VA	2000VA	3000VA
1634/1194	1894/1392	3197/2374	3770/2887	6587/4706	19324/15066	31384/24794	26539/19355	53111/39368
2184/1681	2592/2005	4104/3195	5515/4391	9079/6886	23983/19361	38777/31630	39934/30721	85265/66309
2709/2169	3261/2621	4981/4019	7231/5945	11430/9051	28607/23756	46161/38667	52713/42216	116277/93882
"UL-E61293, cULE61239, EN61558/01.89 (TUV)"								
9070T50*	9070T350*	9070T500*	9070T750*	9070T1000*	9070T1500*	9070T2000*	9070T3000*	9070T5000*
9070TF50*	9070TF350*	9070TF500*	9070TF750*	9070TF1000*	9070TF1500*	9070TF2000*	-	-

Accessories	Accessory Key			Description
	I	II	III	
<b>Finger safe covers</b>				
9070FSC-1	25-200VA	25-100VA	n/a	2 covers per kit
9070FSC-2	250-5000VA	150-5000VA	n/a	
9070FSC-23	n/a	n/a	25-5000	
<b>Field Installable Fuse Options</b>				
<b>Primary Only</b>				
9070FB-2A	25-200VA	25-150VA	n/a	2 pole fuse block, 1-1/2in x 13/32in midget fuse
9070FB-2B	250-2000	200-1500	25-1500	
<b>Primary and Secondary</b>				
9070FB-3A	25-200VA	25-150VA	n/a	3 pole fuse blk , 1-1/2in x 13/32in midget fuse
9070FB-3B	250-2000	200-1500	25-1500	
<b>Secondary Only</b>				
9070FB-1A	25-200VA	25-150VA	n/a	1 pole fuse blk , 1-1/2in x 13/32in midget fuse
9070FB-1B	250-2000	200-1500	25-1500	
9070SF25A	25-200VA	25-150VA	n/a	1 pole fuse blk , 1-1/4in x 1/4in fuse
9070SF25B	250-2000	200-1500	25-1500	
9070SF41A (1)	25-200VA	25-150VA	n/a	secondary fuse clip , 1-1/2in x 13/32in midget fuse
9070SF41B (1)	n/a	200-2000	25-2000	
<b>Fuse Pullers</b>				
9070FP1		All		used with fuse blk , 1-1/2in x 13/32in fuses

(1) Cannot be installed on voltage codes D13, D15, D18, D31, D32, D33, D35, D36, D37, D39, D52.



Clip-on mounting on 35 mm $\mathcal{E}$ rails		Terminal blocks (sold in lots of 100)	End covers (sold in lots of 100)	Commoning link (sold in lots of 100)
2.5 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN235U2GR	AB1RRNAC242GR	AB1RRAL22 (1)
	Protective earth conductor	AB1RRNTP235U2	AB1RRNTPAC242	–
4 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN435U2GR	AB1RRNAC442GR	AB1RRAL42 (1)
	Protective earth conductor	AB1RRNTP435U2	AB1RRNTPAC442	–
6 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN635U2GR	AB1RRNAC642GR	AB1RRNAL62 (2)
	Protective earth conductor	AB1RRNTP635U2	AB1RRNTPAC642	–
10 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN1035U2GR (3)	AB1RRNAC1042GR	AB1RRNAL102
	Protective earth conductor	AB1RRNTP1035U2 (3)	AB1RRNTPAC1042	–
16 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN1635U2GR (3)	AB1RRNAC1642GR	AB1RRNAL162
	Protective earth conductor	AB1RRNTP1635U2 (3)	AB1RRNTPAC1642	–
35 mm <sup>2</sup> c.s.a.	Conducting	AB1RRN3535U2GR (4)	–	AB1RRAL352
	Protective earth conductor	AB1RRNTP3535U2 (4)	–	–

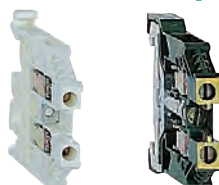
(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRAL22 becomes A1BRRAL23)

(2) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRNAL62 becomes A1BRRNAL64)

(3) Sold in lots of 50

(4) Sold in lots of 10

## Screw clamp technology



Clip-on mounting on 35 mm $\mathcal{E}$ rails		Terminal blocks (sold in lots of 100)	End covers (sold in lots of 100)	Commoning link (sold in lots of 100)
2.5 mm <sup>2</sup> c.s.a.	Conducting	AB1VV235U	AB1AC24	AB1ALN22 (1)
	Protective earth conductor	AB1TP235U	AB1AC25	–
4 mm <sup>2</sup> c.s.a.	Conducting	AB1VV435U	AB1AC24	AB1ALN42 (1)
	Protective earth conductor	AB1TP435U	–	–
6 mm <sup>2</sup> c.s.a.	Conducting	AB1VV635U	AB1AC6	AB1ALN62 (1)
	Protective earth conductor	AB1TP635U	–	–
10 mm <sup>2</sup> c.s.a.	Conducting	AB1VVN1035U (2)	AB1ACN10	AB1ALN102 (1)
	Protective earth conductor	AB1TP1035U (2)	–	–
16 mm <sup>2</sup> c.s.a.	Conducting	AB1VVN1635U (2)	AB1ACN16	AB1ALN162 (1)
	Protective earth conductor	AB1TP1635U (2)	–	–
35 mm <sup>2</sup> c.s.a.	Conducting	AB1VVN3535U (3)	–	AB1ALN352 (1)
	Protective earth conductor	AB1TP3535U (3)	–	–
70 mm <sup>2</sup> c.s.a.	Conducting	AB1VVN7035U (3)	–	AB1ALN702
150 mm <sup>2</sup> c.s.a.	Conducting	AB1VVN15035U (4)	–	AB1ALN1502 (1)

(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1ALN22 becomes AB1ALN23)

(2) Sold in lots of 50

(3) Sold in lots of 20

(4) Sold in lots of 10

## Insulation displacement technology



Clip-on mounting on 35 mm $\mathcal{E}$ rails		2-way terminal blocks (sold in lots of 100)	End covers (sold in lots of 10)	2-pole commoning link (1) (sold in lots of 10)
1 mm <sup>2</sup> c.s.a.	Conducting	AB1AA135U2GR	AB1AAAC122GR	AB1RRAL22
	Protective earth conductor	AB1AATP135U2	AB1AAAC122VE	–
2.5 mm <sup>2</sup> c.s.a.	Conducting	AB1AA235U2GR	AB1AAAC122GR	AB1RRAL22
	Protective earth conductor	AB1AATP235U2	AB1AAAC122VE	–

(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RAL22 becomes AB1RAL23).

# Terminal blocks

## Screw clamp technology



Mounting on 35mm 7 or Square D track	Terminal block (Sold in lots of 50)	End barrier (Sold in lots of 10)	2-pole jumper (Sold in lots of 10)
#22-10 AWG	9080GM6	9080GM6B	9080GH700 (3)
#22-8 AWG	9080GR6	9080GM6B	9080GH72
#22-10 AWG	9080GK6	9080GK6B (1)	9080GH72
#18-4 AWG	9080GC6	9080GC6B	9080GH74
#12 AWG-1/0	9080GD6 (2)	9080GD6B	9080GH76
#6 AWG-250 kcmil	9080GE6 (2)	-	-

(1) Sold in lots of 50.

(2) Sold in lots of 10.

(3) Sold in lots of 20.

## Power Distribution Blocks



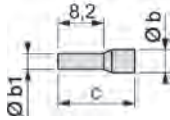
Splitter Blocks	Aluminum Lugs				Copper Lugs	
Main wire (Number of wires in)	(1) #14-2 AWG	(1) #14-2/0 AWG	(1) #6-350 kcmil	(1) #6-600 kcmil	(1) #18-1/0 AWG	(1) #6-250 kcmil
Branch wire (Number of wires out)	(1) #14-2 AWG	(1) #14-2/0 AWG	(1) #6-350 kcmil	(1) #6-600 kcmil	(1) #18-1/0 AWG	(1) #6-250 kcmil
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	-	-	-	-
3-pole	9080LBA361101	9080LBA362101	9080LBA363101	9080LBA364101	9080LBC362101	9080LBC363101

5



Splitter 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

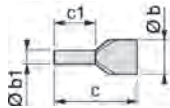
mm <sup>2</sup>	Øb	Øb1	c
22	3	1.4	13
20	3.1	1.6	13
18	3.4	1.8	13.5
16	4	2.1	13.5
14	4.6	2.7	14.5



Type		Single cable ends (2) Sold in lots of 10 x 100		
Packaging		Individual or "strings" of bags	Dispenser pack	Markable cable ends
Conductor AWG in mm <sup>2</sup>	22	White	<b>DZ5CE005</b>	<b>AZ5CE005</b>
	20	Grey	<b>DZ5CE007</b>	<b>AZ5CE007</b>
	18	Red	<b>DZ5CE010</b>	<b>AZ5CE010</b>
	16	Black	<b>DZ5CE015</b>	<b>AZ5CE015</b>
	14	Blue	<b>DZ5CE025</b>	<b>AZ5CE025</b>

(2) UL certified products. Not CSA certified.

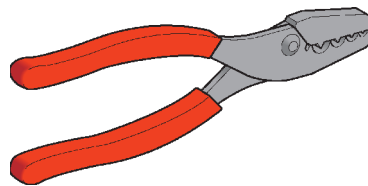
mm <sup>2</sup>	Øb	Øb1	c	c1
20	2.8 x 5	1.8	15	8
18	3.4 x 5.4	2.05	15	8
16	3.6 x 6.6	2.3	15	8
14	4.2 x 7.8	2.9	18.5	10



Type		Double cable ends Sold in lots of 5 x 100		
Packaging		Dispenser pack		
Conductor c.s.a. in mm <sup>2</sup>	2 x 20	Grey	<b>AZ5DE007D</b>	
	2 x 18	Red	<b>AZ5DE010D</b>	
	2 x 16	Black	<b>AZ5DE015D</b>	
	2 x 14	Blue	<b>AZ5DE025D</b>	

(1) For insulated cable ends conforming to DIN46228, please refer to your Schneider Electric agency.

## Cabling accessories



Type	Pliers/cutters				
Functions	Stripping	Cutting/stripping	Crimping	Crimping (ratchet)	Crimping
For cable AWG	28-12	20-12	22-6	0.25 to 6 mm <sup>2</sup>	8-2
References	<b>AT1PA7</b>	<b>AT2PE1</b>	<b>AT1PA2</b>	<b>AT2PA5</b>	<b>AT2PA4</b>





# 6

From simple connectors to integrated I/O platforms, monobloc products to modular solutions, Modicon I/O presents an extensive range of interfaces and I/O for any application.

## Modicon I/O

The compact dimensions and pre-wired system characteristic of the Modicon I/O range allow you to optimise installation time, minimise costs and the risk of error, as well as simplify maintenance.



# 6 | Interfaces and I/O



## Distributed I/O

<b>IP20</b>	
Optimum modular I/O system, for simple machines, <b>Modicon OTB</b> .....	6/2
Modular I/O system for complexes machines or installations, <b>Modicon TM5</b> .....	6/3
Modular I/O with device integration capabilities, <b>Modicon STB</b> .....	6/4 to 6/7
<b>IP67</b>	
Modular I/O system for machines or installations in harsh environment, <b>Modicon TM7</b> .....	6/8

## Distributed I/O with embedded control

<b>IP20</b>	
Block I/O, <b>Modicon Momentum</b> .....	6/9 to 6/12

## Pre-wired interfaces

<b>IP20</b>	
Sub-bases, <b>Modicon ABE7</b> .....	6/13 to 6/15
<b>IP67</b>	
Passive splitter boxes, <b>Modicon ABE9</b> .....	6/16

## Accessories and Cabling

Connection cables and jumper cables .....	6/17
---	------

# Modicon OTB \_\_\_\_\_ IP 20 distributed I/O, optimum system Interface modules



Discrete Type of bus	CANopen Machine bus	Ethernet TCP/IP network (2)	Modbus Series network
Number of I/Os	20 I/O		
Number of inputs	12 inputs 24 VDC IEC type 1		
Number of outputs	6 relay outputs and 2 solid state 24 VDC outputs		
Connection method	Removable terminal block		
Number of I/O expansion modules (1)	7 discrete or analogue input/output modules, or connection accessories		
Maximum I/O configuration	With interface module base: 132 with screw terminal I/O expansion; 244 with HE10 connector I/O expansion; up to 48 analogue channels		
Supply voltage	24 VDC		
Counting	5 kHz	2 channels, 32 bits (0...4 294 967 295 points) dedicated discrete inputs -up counting/down counting with preset	
	20 kHz	2 channels, 32 bits (0...4 294 967 295 points) up/down counting, up counting, down counting, frequency meter	
Pulse generator, 7 kHz	2 PWM function channels (output with pulse width modulation) or PLS function (pulse generator output)		
Dimensions W x D x H (mm)	55 x 70 x 90		
References	OTB1C0DM9LP	OTB1E0DM9LP	OTB1S0DM9LP

(1) for the references of discrete I/O and analogue expansion modules, refer to the Twido or Modicon OTB catalogue

(2) Transparent Ready : Class A10

6

## Accessories

Type of accessory	Commoning modules	Documentation
Usage	For grouping input or output commons, max 8 A	User guides for Modicon hardware and software, and Modicon Configuration Software for Modicon OTB/FTB/FTM. Provided on CD.
Positioning	Inter-module	-
Reference	OTB9ZZ61JP	FTXES01



Type of module	Bus base	CANopen electronic interface module	Power distribution electronic module	Terminal block
Max. number of addressable I/O modules	40 with 240 Digital Input, 240 Digital Output, 20 Input Analog & 20 Output Analog (1)			
Baud rate	10 K...1 Mbps			
Power supply	24 VDC			
Module color	White	White	Grey	Grey
Description	For TM5NCO1 and TM5SPS3 electronic modules	CANopen bus communication with CANopen protocol	For the CANopen bus interface and slice I/O expansion modules	12 spring terminals
References	<b>TM5ACBN1</b>	<b>TM5NCO1</b>	<b>TM5SPS3</b>	<b>TM5ACTB12PS</b>

(1) Only 3 configurations maximum on CANopen fieldbus

### Digital and analogue I/O expansion blocks (2)



Type of module	Input		Output			
	Digital	Analog	Digital	Analog		
Number of inputs	12 sink	–	–	–	–	–
Number of outputs	–	–	–	12 source	4 relay	–
Number of inputs	–	4	4	–	–	–
Number of outputs	–	–	–	–	–	4
Nominal input current	24 VDC	–	–	–	–	–
Nominal output current	–	–	–	24 VDC	30 VDC/ 230 VAC	–
Type	–	Thermal probe	Voltage / Current	–	–	Voltage / Current
Associated bus sub-bases (3)						
	TM5ACBM11	TM5ACBM11	TM5ACBM11	TM5ACBM11	TM5ACBM12	TM5ACBM11
Associated terminal block (3)						
	TM5ACTB12	TM5ACTB12	TM5ACTB12	TM5ACTB12	TM5ACTB32	TM5ACTB12
References	<b>TM5SDI12D</b>	<b>TM5SAI4PH</b>	<b>TM5SAI4L</b>	<b>TM5SDO12T</b>	<b>TM5SDO4R</b>	<b>TM5SAO4L</b>

(2) Wide range of I/O expansion modules ( digital I/O, analog, expert, non-functioning dummy, remote I/O modules...), please consult our catalogue pages on [www.schneider-electric.com](http://www.schneider-electric.com).

(3) To be ordered separately



Type of module NIM		EtherNet Modbus TCP	Modbus TCP, dual port	EtherNet/IP
<b>Baud rate</b>		10 Mbps	10/100 Mbps	10/100 Mbps
<b>Transparent Ready</b>	Class	B20	B15	N/A
	Embedded Web server	Standard services	Standard services	Standard services
	Ethernet services	SNMP agent, FDR, BootP & DHCP client	SNMP agent, RSTP, BootP & DHCP client	SNMP agent, BootP & DHCP client
<b>Max. number of addressable I/O modules</b>		32 per island	32 per island	32 per island
<b>Dimensions W x D x H (mm)</b>		40 x 70 x 128.3	40 x 70 x 128.3	40 x 70 x 128.3
<b>Reference</b>	Standard	<b>STBNIP2212</b>	<b>STBNIP2311</b>	<b>STBNIC2212</b>



Type of module NIM		Machine bus CANopen	Fieldbus Fipio	INTERBUS	Profibus DP
<b>Max. number of addressable I/O modules</b>		32 per island (1) (2)	32 per island (1)	32 per island (1) (2)	32 per island (1) (2)
<b>Baud rate</b>		10 K...1 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
<b>Dimensions W x D x H (mm)</b>		40 x 70 x 128.3			
<b>Reference</b>	Standard	<b>STBNCO2212</b>	<b>STBNFP2212</b>	<b>STBNIB2212</b>	<b>STBNDP2212</b>
	Basic	<b>STBNCO1010</b>	–	<b>STBNIB1010</b>	<b>STBNDP1010</b>

- (1) On 1 primary segment and 6 expansion segments max.  
(2) 12 max on 1 primary segment for basic versions.



Type of module		Other networks Modbus Plus	DeviceNet
<b>Max. number of addressable I/O modules</b>		32 per island	32 per island 12 per island
<b>Baud rate</b>		1 Mbps	125, 250 or 500 Kbps 125, 250 or 500 Kbps
<b>Dimensions W x D x H (mm)</b>		40 x 70 x 128.3	
<b>Reference</b>	Standard	<b>STBNMP2212</b>	<b>STBNDN2212</b>
	Basic	–	– <b>STBNDN1010</b>

### Connection accessories

Type of accessory		Removable terminals for 24 VDC power supply	DeviceNet
<b>Use</b>		All communication modules	Network link DeviceNet module
<b>Reference</b>	Screw terminals	<b>STBXTS1120</b> (1)	<b>STBXTS1111</b>
	Spring terminals	<b>STBXTS2120</b> (1)	<b>STBXTS2111</b>

(1) To be ordered separately, sold in lots of 10 only for spares parts. (STBXTS1120 are delivered systematically with STBN●●●●●●)

<b>Marking label sheets</b>	<b>STBXMP6700</b>
<b>Screwdriver</b>	<b>STBXTT0220</b>



Type of module		PDM				Auxiliary Power supply	
Connection by removable terminals		Screw STBXTS1130 (2) (3) Spring STBXTS2130 (2) (3)				Screw STBXTS1120 (2) Spring STBXTS2120 (2)	
Supply voltage		24 VDC		115...230 VAC		24 VDC	
Maximum current	Inputs (4)	4 A at 30°C, 2.5 A at 60°C		5 A at 30°C, 2.5 A at 60°C		–	
	Outputs (4)	8 A at 30°C, 5 A at 60°C		10 A at 30°C, 5 A at 60°C		–	
	Inputs/Outputs (4)	–		4 A at 30°C, 2.5 A at 60°C		4 A at 30°C, 2.5 A at 60°C	
	Logic internal 5 V	–		–		1.2 A	
Sensor/actuator bus voltage range		19.2...30 VDC		85...265 VAC		–	
Dimensions W x D x H (mm)		18.4 x 70 x 128.3					
Reference	Module (5)	Standard	STBPDT3100K	–	STBPDT2100K	–	STBCPS2111K
		Basic	–	STBPDT3105K	–	STBPDT2105K	–
	Base	STBXBA2200	–	STBXBA2200	–	STBXBA2100	–

- (1) Process power supplies see chapter 6 "Power supply"
- (2) To be ordered separately, sold in lots of 10.
- (3) PDM connector keying pin kit STBXMP7810.
- (4) PDM fuse kit STBXMP5600.
- (5) Kit reference including module, base and terminal

## Bus extension modules for standard range



Type of module	"EOS" End of segment	"BOS" Beginning of segment	Extension for CANopen connection devices		
Connection by removable terminals	–	Screw STBXTS1120 (1) Spring STBXTS2120 (1)	Screw STBXTS1110 (2) Spring STBXTS2110 (2)		
Use	For placing at end of segment (except for the last)	For placing at head of each extension segment	For placing at end of last segment		
Dimensions W x D x H (mm)	18.4 x 70 x 128.3				
Reference	Module (3)	Standard	STBXBE1100K	STBXBE1300K	STBXBE2100K
	Base	STBXBA2300K	–	STBXBA2400	STBXBA2000

- (1) To be ordered separately, sold in lots of 10.
- (2) To be ordered separately, sold in lots of 20.
- (3) Kit reference including module, base and terminal

## Software and memory card



Type	Modicon STB, OTB, FTM, FTB configuration software (PC connection cable supplied)					Removable memory card
Software User Guide	Single station	3 pack	10 pack	Unlimited Site	System Alliance Integrator	–
Memory size	–					32 KB
Reference	STBSPU1000	STBSPU1003	STBSPU1011	STBSPU1130	STBSPU1010	STBXMP4440
	Hardware User Guide					STBSUS8800

## Connection accessories

Type of accessory	Island bus expansion cable				
Length	0.3 m	1 m	4.5 m	10 m	14 m
Reference	STBXCA1001	STBXCA1002	STBXCA1003	STBXCA1004	STBXCA1006
Type of accessory	Bus termination module or plug		Programmation connection cable L= 2 m		
Reference	STBXMP1100		STBXCA4002		

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)



Type of module			Discrete inputs							
Connection by removable terminals (1)	Screw (2)		STBXTS1100			STBXTS1180	STBXTS1110			
	Spring (2)		STBXTS2100			STBXTS2180	STBXTS2110			
Number of channels			2	4	6	16	2	2 (isolated)	2	
Input voltage			24 VDC			115 VAC		230 VAC		
Dimensions W x D x H (mm)			13.9 x 70 x 128.3						18.4 x 70 x 128.3	
Reference	Module (6)	Standard	STBDDI3230K	STBDDI3420K	STBDDI3610K	–	STBDIAI5230K	STBDIAI5260K	STBDIAI7220K	
		Basic	–	STBDDI3425K	STBDDI3615K	STBDDI3725KS/KC*	–	–	–	
	Base (3)		STBXBA1000			STBXBA3000	STBXBA2000			

\* KS with base and screw terminals,  
KC with base and spring terminals

\*\* Without base and terminal



Type of module			Discrete solid state outputs							
Connection by removable terminals (1)	Screw (2)		STBXTS1100			STBXTS1180				
	Spring (2)		STBXTS2100			STBXTS2100				
Number of channels			2	4	6	16				
Output voltage			24 VDC			24 VDC		24 VDC		
Output current			0.5 A	2 A	0.25 A	0.5 A	0.25 A	0.5 A	0.5 A	
Dimensions W x D x H (mm)			13.9 x 70 x 128.3							
Reference	Module (6)	Standard	STBDDO3200K	STBDDO3230K	–	STBDDO3410K	–	STBDDO3600K	–	
		Basic	–	–	STBDDO3415K	–	STBDDO3605K	–	STBDDO3705KS/KC*	
	Base (3)		STBXBA1000			STBXBA3000				

\* KS with base and screw terminals,  
KC with base and spring terminals

\*\* Without base and terminal



Type of module			Discrete outputs			
			Triac		Relay	
Connection by removable terminals (1)	Screw (2)		STBXTS1100			
	Spring (2)		STBXTS2100			
Number of channels			2	2 (isolated)	2 NO/NC and common	2NC+NO
Output voltage			115...230 VAC		115 VAC	
Output current			2 A à 30°C, 1 A à 60°C		24 VDC ou 115...230 VAC	
Dimensions W x D x H (mm)			18.4 x 70 x 128.3		2 A per contact	
Reference	Module (6)	Standard	STBDAO8210K	STBDAO5260K	STBDRC3210K	STBDRA3290K
		Base (3)	STBXBA2000			STBXBA3000

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

(2) I/O connector keying pin kit STBXMP7800

(3) Module keying pin kit STBXMP7700

(4) if connection on Telefast2 order STBXTS6510 or connection on Telefast Twido order STBXTS5510

(5) if connection on Telefast2 order STBXTS6610 or connection on Telefast Twido order STBXTS5610

(6) Kit reference including module, base and terminal

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)





Type of module (1)		Analog inputs (*)									
Connection by removable terminals		Screw STBXTS1100 (2) / Spring STBXTS2100 (2)									
Number of channels		2				4		8		2	
Input signal		- 10...+10 V	0...+10 V	0...20 mA	4...20 mA	4...20 / 0...20 mA	Selectable	Selectable	Multirange (3)		
Resolution		11 bits + sign	10 bits	12 bits	10 bits	15 bits + sign					
Dimensions W x D x H (mm)		13.9 x 70 x 128.3				18.4 x 70 x 128.3				13.9 x 70 x 128.3	
Reference	Module (8)	Standard	-	-	STBACI1230K	-	STBACI0320K	STBAVI0300K	STBACI1400K (5)	STBART0200K	
		Basic	STBAVI1270K	-	-	-	STBACI8320K (4)	-	STBAVI1400K (6)	-	
	Base	STBXBA1000	STBAVI1255K	-	STBACI1225K	-	-	-	-	STBXBA2000	STBXBA1000

(\*) For other references, see catalogue or visit our website: [www.schneider-electric.com](http://www.schneider-electric.com)



Type of module (1)		Analog outputs								
Connection by removable terminals		Screw STBXTS1100 (2) / Spring STBXTS2100 (2)								
Number of channels		1	2							
Output signal		4...20 mA	0...+10, -10...+10 V	0...+10 V	-10 V...+10 V	0...20 mA	4...20 mA	4...20 mA	Selectable (6)	
Resolution		15 bits + sign	11 bits + sign or 12 bits	10 bits	9 bits + sign	12 bits	10 bits	15 bits + sign		
Dimensions W x D x H (mm)		18.4 x 70 x 128.3		13.9 x 70 x 128.3			18.4 x 70 x 128.3			
Reference	Module (8)	Standard	STBACO0120K	STBAVO1250K	-	-	STBACO1210K	-	STBACO0220K	STBAVO0200K
		Basic	-	-	STBAVO1255K	STBAVO1265K	-	STBACO1225K	-	-
	Base	STBXBA2000	STBXBA1000					STBXBA2000		

## Application-specific modules



Type of module (1)		For motor starters TeSys model U		Counter	
Connection by connector		4 RJ45		Spring STBXTS2150 (2)	
Number of inputs/outputs		12 I / 8 O		4 I / 2 O	
Input voltage		24 VDC		24 VDC	
Output voltage/current		24 VDC/0.1 A per channel		24 VDC/0.5 A	
Number of channels		4 starters-controllers		1 counter channel 40 kHz	
Dimensions W x D x H (mm)		28.1 x 70 x 128.3			
Reference	Module (8)	Standard	STBEPI2145K		STBEHC3020K
	Base	STBXBA3000			
	Connection cables	(7)		-	

(1) Grounding kit (conseilled for counter > 40 kHz): STBXSP3000 (connecting support) + STBXSP3010 (1.5...6 mm<sup>2</sup> cables) + STBXSP3020 (5...11 mm<sup>2</sup> cables)

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

(3) Multirange temperature probe thermocouples B, E, J, K, R, S, T. Thermal probe Pt 100, Pt 1000, Ni 100, Ni 1000, cu 10, ± 80 mV.

(4) 4 HART-tolerant channels (5) Input signal selectable / channel 0...20 mA and 4...20 mA (6) Input signal selectable / channel 1...5 VDC, 0...5 VDC, 0...10 VDC, ± 5 VDC and ± 10 VDC

(7) LU9R03 (0,3 m), LU9R10 (1 m), 490NTW00002 (2 m), LU9R30 (3 m), 490NTW00005 (5 m), 490NTW00012 (12 m)

(8) Kit reference including module, base and terminal



Type of module	CANopen interface blocks with digital I/O		
Number of channels	8 I/O	16 I/O	16 I/O
Number, type of inputs	8 sink (1)	16 sink (1)	16 sink (1)
Number, type of outputs	8 transistor / source (2)	16 transistor / source (2)	16 transistor / source (2)
Sensor / actuator connection	8 female M8 connectors	16 female M8 connectors	8 female M12 connectors
Communication bus	CANopen TM7 bus		
References	<b>TM7NCOM08B</b>	<b>TM7NCOM16B</b>	<b>TM7NCOM16A</b>

(1) Sink inputs: positive logic

(2) Source outputs: positive logic

### Digital I/O expansion blocks



Type of module	Analog I/O expansion blocks		
Input voltage	24 VDC IEC type 1		
Output voltage	24 VDC		
Type of inputs	Sink (positive logic)		
Type of outputs	Transistor / source (positive logic)		
Diagnostics	By expansion block, channel, communication on TM7 bus		
Communication bus	TM7 bus		
Output current	0.5 A		2A
Sensor / actuator connection	M8 connectors	M12 connectors	M8 connectors
References	8 inputs <b>TM7BDI8B</b>	–	–
	8 configurable I/O <b>TM7BDM8B</b>	–	–
	16 inputs <b>TM7BDI16B</b>	<b>TM7BDI16A</b>	–
	16 configurable I/O <b>TM7BDM16B</b>	<b>TM7BDM16A</b>	–
	8 outputs –	–	<b>TM7BDO8TAB</b>

### Analog I/O expansion blocks



Type of module	Analog I/O expansion blocks			
Input range	Voltage	Current 0...20 mA	Temperature probe Pt100 / Pt1000	J, K, S thermocouple
Output range	Voltage -10... + 10 V DC	Current 0...20 mA	–	–
Type of inputs	Sink (positive logic)			
Type of outputs	Transistor / source (positive logic)			
Diagnostics	By expansion block, channel, communication on TM7 bus			
Communication bus	TM7 bus			
Sensor / actuator connection	M12 connectors			
Resolution	11 bit + sign	12 bit	16 bit	16 bit
References	2 inputs/2 outputs <b>TM7BAM4VLA</b>	<b>TM7BAM4CLA</b>	–	–
	4 inputs <b>TM7BAI4VLA</b>	<b>TM7BAI4CLA</b>	<b>TM7BAI4TLA</b>	<b>TM7BAI4PLA</b>
	4 outputs <b>TM7BAO4VLA</b>	<b>TM7BAO4CLA</b>	–	–

# Modicon Momentum \_\_\_\_\_ Distributed I/O and processors

## Discrete I/O modules



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)	
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)			
Reference	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 pts)	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	0,5 A
	Per group of channels	4 A	8 A	4 A	4 A	4 A
	Per module	8 A	16 A	8 A	8 A	8 A
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)					
Reference	170ADO34000	170ADO35000	170ADO53050	170ADO54050	170ADO73050	170ADO74050

6



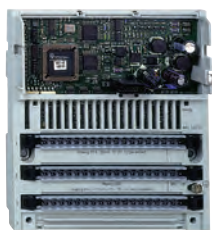
Type of module	Multibus discrete I/O							
	Solid state			Relay		Triac		
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)							
Number of channels	Inputs	16 (1 common pt)	16 (4 com. pts)	16 (1 com. pt)	10 (1 common pt)			
	Input logic	Positive	Positive (2)	Negative	Positive			–
	Outputs	16 (1 common pt)	16 (2 common pts)	8/4 (1 com. pt)	12	8 (2 common pts)		8 (1 com. pt)
Input voltage	12...48 VDC	24 VDC					120 VAC	
Output voltage	12...48 VDC	24 VDC		24...230 VAC/20...115 VDC			120 VAC	
Output current	Per output	0,5 A	0,5 A	2 A	0,5 A	2 A	0,5 A	
	Per group of channels	–	4 A	4 A	4/2 A	8 A	4 A	
	Per module	8 A	8 A	8 A	6 A	16 A	4 A	
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)							
Reference	170ADM85010	170ADM35010	170ADM35015	170ADM37010	170ADM39010	170ADM39030	170ARM37030	170ADM69051

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

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

# Modicon Momentum \_\_\_\_\_ Distributed I/O and processors

## 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
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)		
Reference	<b>170AAI03000</b>	<b>170AAI14000</b>	<b>170AAI52040</b>

(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 170XTS00100 or spring terminals 170XTS00200 (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)	2 + 2 discrete (12VDC)	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	
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)					
Reference	<b>170AAO12000</b>	<b>170AAO92100</b>	<b>170AMM09000</b>	<b>170AMM09001</b>	<b>170ANR12090</b>	<b>170ANR12091</b>

## Application-specific I/O modules



Type of module	High-speed counter	Discrete I/O with Modbus port
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	
Type of inputs for	Incremental or absolute encoders	RS 485 Modbus port
Operating voltage	24 VDC	120 VAC
Counting frequency	200 kHz	–
Number of channels	2 independent	–
Number of discrete I/O	2 x 3 inputs/2 x 2 outputs	6 inputs/3 outputs
Dimensions W x D x H (mm)	125 x 47.5 x 141.5 (with communication modules or M1/M1E processors) 144 x 70 x 141.5 (with M1/M1E processors and optional modules)	
Reference	<b>170AEC92000</b>	<b>170ADM54080</b>

# Modicon Momentum \_\_\_\_\_ Distributed I/O and processors

## Communication modules



Type of module	Ethernet TCP/IP network		Fipio fieldbus	INTERBUS (1) fieldbus	Profibus DP fieldbus
Speed	10 Mbps	10/100 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
Manager PLC	-		Premium	-	-
Redundancy	No		No	No	No
Standard services	Modbus TCP/IP		-	-	-
Reference	<b>170ENT11002</b>	<b>170ENT11001</b>	<b>170FNT11001</b>	<b>170INT11000 (1)</b>	<b>170DNT11000</b>

(1) Generation 4, twisted pair medium: **170INT11003**, with optical fiber medium: **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	-		-
Reference	<b>170PNT11020</b>	<b>170PNT16020</b>	<b>170LNT71000</b>

## Optional modules for M1/M1E processors



Type of module (2)	Modbus Plus		Asynchronous serial link
Communication ports	1 Modbus Plus	2 redundant Modbus Plus	RJ45
Real-time clock	Integrated, ± 13 sec/day accuracy		
Connection	By 9-way SUB-D connector		
Reference	<b>172PNN21022</b>	<b>172PNN26022</b>	<b>172JNN21032</b>

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

## Connection accessories

Type	RS 232C communication cable		
Length	1 m	3 m	6 m
Reference	<b>110XCA28201</b>	<b>110XCA28202</b>	<b>110XCA28203</b>

## Power supply module (3)



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

(3) Process power supplies see chapter 6 "Power supply"

# Modicon Momentum \_\_\_\_\_ Distributed I/O and processors

## M1/M1E processors



Type of processor		M1			
Number of I/O	Discrete	2048 I/O		2048 I/2048 Q	
	Registers	2048 words		4096 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	
	Flash	256 Kb		256 Kb	
	User, 984 LL language (2)	2.4 K		12 K	
	User, IEC language (3)	–		160 K	
	Data	2 K		4 K	
Cycle time		1 ms/K	1 ms/K	0.63 ms/K	1 ms/K
Reference		<b>171CCS70000</b>	<b>171CCS78000</b>	<b>171CCS76000</b>	<b>171CCC78010</b>

(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 (class A10)	
Memory capacity	RAM	512 Kb		544 Kb	
	Flash	512 Kb		1 Mb	512 Kb
	User, 984 LL language (2)	18 K			
	User, IEC language (3)	240 K	–	200 K	–
	Data	24 K			
Cycle time		1 ms/K	0.3 ms/K		
Reference		<b>171CCC76010</b>	<b>171CCC98020</b>	<b>171CCC98030</b>	<b>171CCC96020</b>
				<b>171CCC96030</b>	



Type of processor		171 CBB97030
Integrated communication ports	Modbus	1 RS 232/485
	Ethernet TCP/IP	4 integrated Ethernet port
Transparent Ready	Embedded Web server	Standard services (class B)
Memory capacity	RAM	512 Kb
	Flash	1 Mb
	User, 984 LL language (2)	18 K
	User, IEC language (3)	200 K
	Data	24 K
Cycle time		0.25 ms/K
Reference		<b>171CBB97030</b>

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)



Type of connection sub-base	Optimum			
Number of channels	16	16		
Max. current per channel	0.5 A	0.5 A		
Control voltage / output voltage	24 VDC / 24 VDC	24 VDC / 24 VDC		
LED per channel	–	With		
Number of terminals per channel/on row number	1/2	1/1	2/2	3/3
Dimensions W x D x H (mm)	55 x 59 x 67	106 x 60 x 49		
References	–	ABE7H16C11	ABE7H16C21	ABE7H16C31
Cable L = 1 m	ABE7H20E100 (1)	–	–	–
Cable L = 2 m	ABE7H20E200 (1)	–	–	–
Cable L = 3 m	ABE7H20E300 (1)	–	–	–
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (2)	ABFH20H100			

(1) Connection cable supplied for PLCs.

(2) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m 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	–	With	–	–	With	With
Number of terminals per channel/on row number	1/1	1/1	1/2	2/2	2/2	3/3
Dimensions W x D x H (mm)	125 x 58 x 70		84 x 58 x 70	125 x 58 x 70		
References	ABE7H16R10	ABE7H16R11	ABE7H16R50	ABE7H16R20	ABE7H16R21	ABE7H16R31
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: ABFH20H100 (2)						

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



Type of connection sub-base	For counter and analogue channels	Passive distribution with shielding continuity	Distribution and supply of analogue 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)	143 x 58 x 70	125 x 58 x 70	125 x 58 x 70
References	ABE7CPA01	ABE7CPA02	ABE7CPA03
Connection cable recommended for Modicon PLCs (4)	TSX Micro L = 2.5 m Premium L = 3 m	TSXCCPS15	–
		TSXCAP030	–

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

(4) Connection cables available for other PLCs, please refer to your Schneider Electric agency.



Type of connection sub-base	With soldered solid-state relay inputs		With soldered solid-state relay outputs		With soldered electro-mechanical relay outputs	
Number of channels	16		16		16	
Max. current per channel	12 mA		0.5 A		2 A	5 A
Input voltage / output voltage	24 VDC / -	110 VAC / -	- / 24 VDC		- / 5...30 VDC, 250 VAC	
Number of contacts	-		-		1 N/O	
Polarity distribution	-		-		(1)	Volt-free
Number of terminals per channel	2		-		-	
Dimensions W x D x H (mm)	206 x 58 x 77		-		-	
References	<b>ABE7S16E2B1</b>	<b>ABE7S16E2F0</b>	<b>ABE7S16S2B0(2)</b>	<b>ABE7S16S1B2</b>	<b>ABE7R16S111</b>	<b>ABE7R16S210</b>

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (3)

(1) Contact common per group of 8 channels.

(2) With fault detection signal (can only be used with modules with protected outputs).

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



Type of connection sub-base	With plug-in electromechanical relays						
Number of channels	16						
Max. current per channel	5 A	2.5 A				4 A	5 A
Control voltage / output voltage	24 VDC / 5...24 VDC, 230 VAC						
Number of contacts	1 N/O			1 C/O		2 C/O	
Polarity distribution	(4)	(5)	Volt-free				
Number of terminals per channel	2	2 or 3				2 to 6	
Dimensions W x D x H (mm)	110 x 54 x 89	211 x 64 x 89				272 x 74 x 89	
References	<b>ABE7R16T111</b>	<b>ABE7R16T212</b>	<b>ABE7R16T210</b>	<b>ABE7R16T230</b>	<b>ABE7R16T330</b>	<b>ABE7R16T370</b>	

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (6)

(4) Contact common per group of 4 channels.

(5) Common on both poles.

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

### Connection cables for PLCs (7)



Input/Output functions		Discrete	Analogue	Analogue and counter	Counter	Axis control
References	Cable L = 1 m	<b>ABFH20H100</b>	-	-	-	-
	Cable L = 2 m	<b>ABFH20H200</b>	<b>ABFY25S200</b>	-	-	<b>TSXCXP213</b>
	Cable L = 2.5 m	-	-	<b>TSXCCPS15</b>	<b>TSXCCPH15</b>	-
	Cable L = 3 m	<b>ABFH20H300</b>	<b>TSXCAP030</b>	-	-	-
	Cable L = 6 m	-	-	-	-	<b>TSXCXP613</b>

(7) Modicon, TSX Micro and Premium PLCs.

For other connection cables and accessories, please refer to your Schneider Electric agency.





Type of connection sub-base	Discrete outputs			Relay
	Number of channels	16	16	16
Type of outputs	16 I (1 common for 16 channels)	16 O (1 common for 16 channels)	16 O, fuse protected (1 common for 16 channels)	16 O (1 common for 4 channels)
Voltage / current of outputs	24 VDC / 5 mA	24 VDC / 0.1 A		Relay: 5...30 VDC, 250 VAC / 3 A
LED per channel	–		With	–
Number of terminals per channel/row number	2/2			
Dimensions W x D x H (mm)	106 x 60 x 49		130 x 62.5 x 83	
References	<b>ABE7E16EPN20</b>	<b>ABE7E16SPN20</b>	<b>ABE7E16SPN22</b>	<b>ABE7E16SRM20</b>

## Connection cables for Twido and Modicon M238



Type of cable	For linking Twido base and Modicon Telefast sub-base	For linking discrete I/O expansion modules Twido or Modicon M238 and Modicon Telefast sub-base
For use with	TWDLMDA20DTK/40DTK	TM2DI16DK/32DK/DDO16TK/32TK
Type of connectors	HE10, 26-pin, at either end	HE10, 20-pin, at either end
References	Cable L = 0.5 m L = 1 m L = 2 m	
	<b>ABFT26B050</b> <b>ABFT26B100</b> <b>ABFT26B200</b>	<b>ABFT20E050</b> <b>ABFT20E100</b> <b>ABFT20E200</b>

## Accessories

Type of accessory	Optional clip-in terminals	
Number of linked terminals	20	12 + 8
References	<b>ABE7BV20</b>	<b>ABE7BV20TB</b>



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 <sup>2</sup> )		
Product certification		cULus		
Dimensions W x D x H (mm)		50.2 x 42 x 92.2	50.2 x 42 x 149.2	
References	Without LEDs	Cable L = 5 m	ABE9C1240L05	ABE9C1280L05
		Cable L = 10 m	ABE9C1240L10	ABE9C1280L10
	With LEDs (1)	Cable L = 5 m	ABE9C1241L05	ABE9C1281L05
		Cable L = 10 m	ABE9C1241L10	ABE9C1281L10

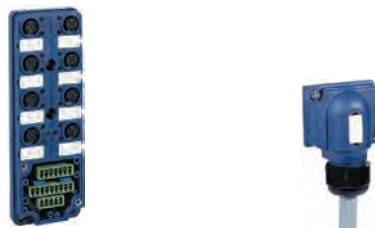
(1) Green LED: power supply status, yellow LED: channel status.



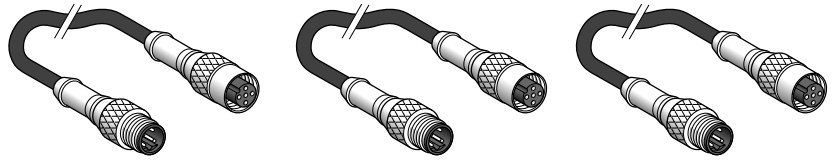
Type of connection		To PLC using M23 connector	
Number of channels		4	8
Type of female connector		M12, 5-pin	M12, 5-pin
Max. number of signals		8	16
Max. current per channel		4 A	
Max. current per splitter box		16 A	
Product certification		cULus	
Dimensions, W X D x H		50.2 x 36.5 x 92.2	50.2 x 36.5 x 149.2
References	Without LEDs	ABE9C1240C23	ABE9C1280C23
	With LEDs (1)	ABE9C1241C23	ABE9C1281C23

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

## Accessories

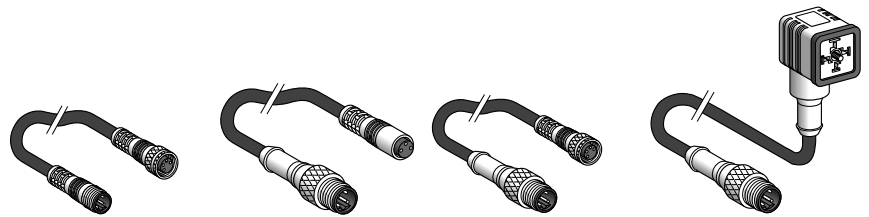


Type of accessory	Splitter boxes w/o cable		Terminal connectors		Sealing plugs (sold in lots of 10)	
	Without LEDs	With LEDs	Cable L = 5 m	Cable L = 10 m		
References	4-channel	ABE9C1240M	ABE9C1241M	ABE9XCA1405	ABE9XCA1410	–
	8-channel	ABE9C1280M	ABE9C1281M	ABE9XCA1805	ABE9XCA1810	–
	for Ø12 connector	–	–	–	–	FTXCM12B



Type			Male / Female jumper cables		
Type of male connector, interface side			M12, 4-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Type of female connector, sensor side			M12, 3-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Cable			PUR, black	PUR, black	PUR, black
References	Cable	L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
		L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

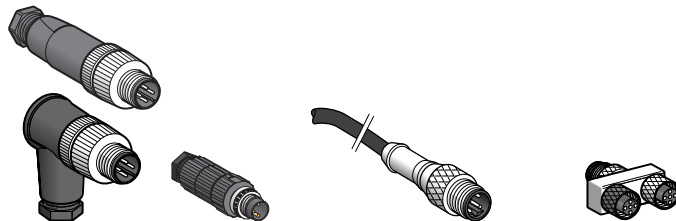
M8/M8, M8/M12 and M12/DIN jumper cables



Type			Male / Female jumper cables			
Type of male connector, interface side			M8, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread
Type of female connector, sensor side			M8, 3-pin straight, screw thread	M8, 3-pin straight, clip together	M8, 3-pin straight, screw thread	DIN 43650A elbowed, screw thread
Cable			PUR, black	PUR, black	PUR, black	PUR, black
References	Cable	L = 1 m	XZCR2705037R1	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
		L = 2 m	XZCR2705037R2	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

6

Pre-wired connectors and splitter box



Type			Connectors		Pre-wired connectors	Splitter box "Y"	
Type of male connector, interface side			M12, 4-pin	M8, 3-pin	M12, 5-pin, straight, screw thread	1 x M12	1 x M12
Type of female connector, sensor side			-	-	-	2 x M12	2 x M8
Cable			-	-	PUR, black	-	-
References	Straight connector, screw thread		XZCC12MDM40B	XZCC8MMDM30V	-	FTXCY1212	FTXCY1208
	Elbowed connector, screw thread		XZCC12MCM40B	-	-	-	-
	Cable	L = 0.5 m	-	-	XZCP1564L05	-	-
		L = 2 m	-	-	XZCP1564L2	-	-

# Modicon FactoryCast

Modicon FactoryCast PLC modules and the Modicon FactoryCast Gateway combine the benefits of open Web technologies with the reliability of industrial control.

In the areas of distributed infrastructure, RTU installations, industry, machinery and energy, the Modicon FactoryCast ranges offer an ideal solution for all your remote diagnostics and maintenance, monitoring, control and programming needs.



Schneider Electric's communication solutions for industrial networks monitor your control system applications to give you precise control and maintenance data in real time.

Remote intelligent modules or in-rack modules for PLCs, standalone products and devices - the Modicon FactoryCast, AS-Interface and Modicon Connexium ranges provide access to advanced functions, flexible tools and services for optimising communication between all your automation products.



## AS-Interface

AS-Interface is a quick expandable cabling system which connects all components in a control system with just a single cable. Intelligent, it features built-in communication management.



## Modicon Connexium

Designed for open industrial solutions, Modicon Connexium products are the Ethernet-ready network hubs, switches, transceivers, gateways and cables which provide you with integrated Ethernet solutions to unite everything in your installation, from device level all the way to your corporate intranet. Modicon Connexium boosts network performance and reliability.

# 7 | Networks connectivity and Web servers



## ConneXium cabling system

Hub, Transceiver, IP 67 Switch .....	7/2
Switches .....	7/3 to 7/6
Gateways & Converters .....	7/7 to 7/8
Cables & Connectors .....	7/9

## AS-Interface cabling system

<b>Modicon interfaces for generic products</b> .....	7/12 and 7/13
IP20 interfaces	
IP67 interfaces	
<b>Dedicated components</b> .....	7/14 and 7/15
For control	
For dialogue	
<b>Installation system</b> .....	7/16 to 7/18
Master modules, power supply units	
Cables, repeaters	
Accessories	
<b>Tools</b> .....	7/19
Adjustment and addressing terminals	
<b>Safety solutions</b>	
Safety monitors	
Safety interfaces	
see Chapter 8 “Machine safety”	

## Servers and Gateways

Data server software,	
<b>OPC Factory Server</b> .....	7/20
Embedded Web Servers,	
<b>FactoryCast and FactoryCast HMI</b> .....	7/21 and 7/22
Web Gateways for Remote control,	
<b>FactoryCast Gateway and FactoryCast HMI Gateway</b> .....	7/23



Hub			
<b>Interfaces</b>	Copper cable ports	Number and type	4 x 10BASE-T ports
		Shielded connectors	RJ45
		Medium	Shielded twisted pair, category CAT 5E
		Total length of pair	100 m
<b>Power supply</b>	Voltage	24 V (18...32) DC, safety extra low voltage (SELV)	
<b>Degree of protection</b>		IP 30	
<b>Dimensions W x H x D</b>		40 x 125 x 80 mm	
<b>Conformity to standards</b>		cUL 60950, UL 508 and CSA 142, UL 1604 and CSA 213 Class 1 Division 2, C€, GL FM 3810, FM 3611 Class 1 Division 2, C-TICK	
<b>Reference</b>		<b>499 NEH 104 10</b>	



Transceiver			
<b>Interfaces</b>	Copper cable ports	Number and type	1 x 100BASE-TX port
		Shielded connectors	RJ45
		Medium	Shielded twisted pair, category CAT 5E
		Total length of pair	100 m
	Fiber optic ports	Number and type	1 x 100BASE-FX port
		Connectors	SC
		Medium	Multimode optical fiber
Length of optical fiber			
50/125 µm fiber		3000 m (1)	
62.2/125 µm fiber		3000 m (1)	
<b>Power supply</b>	Voltage	24 V (18...32) DC, safety extra low voltage (SELV)	
		<b>Degree of protection</b>	
		IP 20	
<b>Dimensions W x H x D</b>		47 x 135 x 111 mm	
<b>Conformity to standards</b>		cUL 60950, UL 508 and CSA 142, UL 1604 and CSA 213 Class 1 Division 2, C€, GL, C-TICK	
<b>Reference</b>		<b>499 NTR 101 00</b>	

(1) Length dependent on the attenuation analysis and attenuation of the optical fiber (typical value: 2000 m).



IP 67 switch		Twisted pair, unmanaged	
<b>Interfaces</b>	Copper cable ports	Number and type	5 x 10BASE-T/100BASE-TX ports
		Shielded connectors	M12 (type D)
		Medium	Shielded twisted pair, category CAT 5E
		Total length of pair	100 m with rated cable
<b>Power supply</b>	Voltage	24 VDC (18...32 VDC), safety extra low voltage (SELV)	
<b>Degree of protection</b>		IP 65/67	
<b>Dimensions W x H x D</b>		60 x 126 x 31 mm	
<b>Conformity to standards</b>		cUL 508 and CSA 22.2 14, C-TICK	
<b>Reference</b>		<b>TCS ESU 051 F0</b>	



Switches			Copper twisted pair, unmanaged			
<b>Interfaces</b>	Copper cable ports	Number and type	3 x 10BASE-T/ 100BASE-TX ports	4 x 10BASE-T/ 100BASE-TX ports	5 x 10BASE-T/ 100BASE-TX ports	8 x 10BASE-T/ 100BASE-TX ports
		Shielded connectors	Type RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	–	1 x 100BASE-FX ports	–	–
		Connectors	–	Duplex SC	–	–
		Medium	–	Multimode optical fiber	–	–
		Length of optical fiber				
		50/125 µm fiber	–	5000 m (1)	–	–
		62,2/125 µm fiber	–	4000 m (1)	–	–
Attenuation analys	50/125 µm fiber	–	8 dB	–	–	
	62,2/125 µm fiber	–	11 dB	–	–	
<b>Power supply</b>	Voltage, safety extra low voltage (SELV)	~ 24 VDC (≈ 9,6...32 VDC)				
	Power consumption	Max. 2,2 W	Max. 3,9 W	Max. 2,2 W	Max. 4,1 W	
	Connector	3 way removable connector				
<b>Degree of protection</b>		IP 30				
<b>Dimensions</b>		W x H x D	25 x 114 x 79 mm		35 x 138 x 121 mm	
<b>Weight</b>			0,113 kg	0,120 kg	0,113 kg	0,246 kg
<b>Conformity to standards</b>		UL 508 and CSA 22.2 N° 142 IEC/EN 61131-2, IEC 60825-1 class 1, CISPR 11A				
<b>Alarm relay</b>		–				
<b>Reference</b>		<b>TCS ESU 033FN0</b>	<b>TCS ESU 043F1N0</b>	<b>TCS ESU 053FN0</b>	<b>TCS ESU 083FN0</b>	

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).



Switches			Copper twisted pair and fibre optic, unmanaged				
<b>Interfaces</b>	Copper cable ports	Number and type	4 x 10BASE-T/ 100BASE-TX ports	3 x 10BASE-T/ 100BASE-TX ports	4 x 10BASE-T/ 100BASE-TX ports	3 x 10BASE-T/ 100BASE-TX ports	8 x 10BASE-T/ 100BASE-TX ports
		Shielded connectors	RJ45				
		Medium	Shielded twisted pair, category CAT 5E				
		Total length of pair	100 m				
	Fiber optic ports	Number and type	1 x 100BASE-FX port	2 x 100BASE-FX ports	1 x 100BASE-FX port	2 x 100BASE-FX ports	–
		Connectors	SC				–
		Medium	Multimode optical fiber		Single mode optical fiber		–
		Length of optical fiber					
		50/125 µm fiber	5000 m (1)		–		–
		62,2/125 µm fiber	4000 m (1)		–		–
	9/125 µm fiber	–		32 500 m (2)		–	
<b>Power supply</b>	Voltage	24 VDC (18...32), safety extra low voltage (SELV)					
<b>Degree of protection</b>		IP 20					
<b>Dimensions</b>		W x H x D	47 x 135 x 111 mm				
<b>Conformity to standards</b>		cUL 60950, cUL 508 and CSA 142, UL 1604 and CSA 213 Class 1 Division 2, CE, GL, C-TICK					
<b>References</b>		<b>499 NMS 251 01</b>	<b>499 NMS 251 02</b>	<b>499 NSS 251 01</b>	<b>499 NSS 251 02</b>	<b>499 NES 181 00</b>	

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).

(2) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 15,000 m).



Switches			Copper twisted pair and fiber optic, managed			
<b>Interfaces</b>	Copper cable ports	Number and type	3 x 10/100BASE-TX ports	2 x 10/100BASE-TX ports	3 x 10/100BASE-TX ports	2 x 10/100BASE-TX ports
		Shielded connectors	RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	1 x 100BASE-FX port	2 x 100BASE-FX ports	1 x 100BASE-FX port	2 x 100BASE-FX ports
	Connectors	Duplex SC				
	Medium	Multimode optical fiber		Single mode optical fiber		
	Length of optical fiber					
	50/125 µm fiber	5,000 m (1)		–		
	62.2/125 µm fiber	4,000 m (1)		–		
	9/125 µm fiber	–		32,500 m (2)		
<b>Power supply</b>	Voltage	Operation	9.6...60 VDC/18...30 VAC, safety extra low voltage (SELV)			
<b>Degree of protection</b>		IP 20				
<b>Dimensions W x H x D</b>		47 x 131 x 111 mm				
<b>Conformity to standards</b>		IEC 61131-2, IEC 61850-3, UL 508, UL 1604 Class 1 Division 2, CSA C22.2 14 (cUL), CSA C22.2 213 Class 1 Division 2 (cUL), CE, GL, C-TICK				
<b>References</b>		<b>TCSESM043F1CU0</b>	<b>TCSESM043F2CU0</b>	<b>TCSESM043F1CS0</b>	<b>TCSESM043F2CS0</b>	

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).

(2) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 15,000 m).



Switches			Copper twisted pair, managed	
<b>Interfaces</b>	Copper cable ports	Number and type	4 x 10/100BASE-TX ports	8 x 10/100BASE-TX ports
		Shielded connectors	RJ45	
		Medium	Shielded twisted pair, category CAT 5E	
		Total length of pair	100 m	
<b>Power supply</b>	Voltage	Operation	9.6...60 VDC/18...30 VAC, safety extra low voltage (SELV)	
<b>Degree of protection</b>		IP 20		
<b>Dimensions W x H x D</b>		47 x 131 x 111 mm	74 x 131 x 111 mm	
<b>Conformity to standards</b>		IEC 61131-2, IEC 61850-3, UL 508, UL 1604 Class 1 Division 2, CSA C22.2 14 (cUL), CSA C22.2 213 Class 1 Division 2 (cUL), CE, GL, C-TICK		
<b>References</b>		<b>TCSESM043F23F0</b>	<b>TCSESM083F23F0</b>	





Switches			Copper twisted pair and fiber optic, managed			
<b>Interfaces</b>	Copper cable ports	Number and type	7 x 10/100BASE-TX ports	6 x 10/100BASE-TX ports	7 x 10/100BASE-TX ports	6 x 10/100BASE-T ports
		Shielded connectors	RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	1 x 100BASE-FX port	2 x 100BASE-FX port	1 x 100BASE-FX port	2 x 100BASE-FX port
		Connectors	Duplex SC			
		Medium	Multimode optical fiber (MM)		Single mode optical fiber (SM)	
Length of optical fiber						
	50/125 µm fiber	5,000 m (1)	-			
	62.2/125 µm fiber	4,000 m (1)	-			
	9/125 µm fiber	-	32,500 m (2)			
<b>Power supply</b>	Voltage	Operation	9.6...60 VDC/18...30 VAC, safety extra low voltage (SELV)			
<b>Degree of protection</b>	IP 20					
<b>Dimensions W x H x D</b>	74 x 131 x 111 mm					
<b>Conformity to standards</b>	IEC 61131-2, IEC 61850-3, UL 508, UL 1604 Class 1 Division 2, CSA C22.2 14 (cUL), CSA C22.2 213 Class 1 Division 2 (cUL), CE, GL, C-TICK					
<b>References</b>			<b>TCSESM083F1CU0</b>	<b>TCSESM083F2CU0</b>	<b>TCSESM083F1CS0</b>	<b>TCSESM083F2CS0</b>

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).

(2) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 15,000 m).



Switches			Copper twisted pair, managed	Copper twisted pair and fiber optic, managed		
<b>Interfaces</b>	Copper cable ports	Number and type	16x 10/100BASE-TX ports	14x 10/100BASE-TX ports	22x 10/100BASE-TX ports	14 ports 10/100BASE-TX
		Shielded connectors	RJ45			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	-	2 x 100BASE-FX ports		
		Connector	-	Duplex SC		
		Medium	-	Multimode optical fiber		Optical fiber
		Length of optical fiber				
	50/125 µm fiber	-	5,000 m (1)	-		
	62.2/125 µm fiber	-	4,000 m (1)	32 500 M (2)		
<b>Power supply</b>	Voltage	Operation	9.6...60 VDC/18...30 VAC, safety extra low voltage (SELV)			
<b>Degree of protection</b>	IP 20					
<b>Dimensions W x H x D</b>	111 x 131 x 111 mm					
<b>Conformity to standards</b>	cUL60950, UL508 and CSA142, UL1604 and CSA213 Class 1 Division 2, CE, GL, C-TICK					243F2CU0
<b>References</b>			<b>TCSESM163F23F0</b>	<b>TCSESM163F2CU0</b>	<b>TCSESM243F2CU0</b>	<b>TCSESM16F2CS0</b>

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).



Switches			Copper twisted pair and fibre optic, managed - extended features			
<b>Interfaces</b>	Copper cable ports	Number and type	8 x 10/100 BASE-TX ports	6 x 10/100 BASE-TX ports	6 x 10/100 BASE-TX ports	
		Shielded connectors	RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	–	2 x 100BASE-FX ports	2 x 100BASE-FX ports	
		Connectors	–	Duplex SC	Duplex SC	
		Medium	–	Multi mode optical fibre	Single mode optical fibre	
		Length of optical fiber	50/125 µm fiber	–	5,000 m (1)	–
			62.2/125 µm fiber	–	4,000 m (1)	–
			9/125 µm fiber	–	–	32,500 m (2)
		Attenuation analysis	50/125 µm fibre	–	8 dB	–
			62.2/125 µm fiber	–	11 dB	–
			9/125 µm fiber	–	–	16 dB
		Ethernet services	FDR, SMTP V3, SNMP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, VLAN, IGMP Snooping, RSTP (Rapid Spanning Tree Protocol), priority port, data stream control, secure port.			
<b>Topology</b>	Number of switches	Cascaded	Unlimited			
		Redundant in a ring	max. 50			
<b>Redundancy</b>	Redundant power supplies, redundant single ring, ring coupling					
<b>Power supply</b>	Voltage	Operation	18 - 60 V safety extra low voltage (SELV)			
	Power consumption		10 W	12 W	12 W	
<b>Degree of protection</b>	IP30					
<b>Dimensions W x H x D</b>	120 x 137 x 115 mm					
<b>Conformity to standards</b>	IEC/EN 61131-2, IEC 61850-3, UL 508, UL ISA-12.12.-01 Class 1 Div 2 Group A, B, C, D, CSA 22.2 No. 142 (cUL), CSA 22.2 No. 213 Class 1 Division 2 (cUL), CE, GL, C-Tick					
<b>Alarm relay</b>	Power supply fault, Ethernet network fault or communication port fault (2 A max. volt-free contact at 30 VDC)					
<b>References</b>			<b>TCSESM083F23F1</b>	<b>TCSESM063F2CU1</b>	<b>TCSESM063F2CS1</b>	

(1) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 2,000 m).

(2) Length dependent on the attenuation analysis and attenuation of the fiber optic (typical value: 15,000 m).

Switches			Copper twisted pair and fiber optic, managed			Copper twisted pair, managed
<b>Interfaces</b>	Copper cable ports	Number and type	8 x 10/100 BASE-TX ports			8 x 10/100 BASE-TX ports 2 x 100 BASE-TX ports (Gigabits)
		Shielded connectors	RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	2 x 100BASE-SX ports (1)	2 x 100BASE-LH ports (2)	2 x 100BASE-LX ports (3)	-
		Connectors	LC			-
		Medium	Multimode optical fiber	Single optical fibre	Single mode and multi-mode optical fiber	-
		Length of optical fiber				-
		50/125 µm fiber	550 m	-	550 m	-
		62.2/125 µm fiber	275 m	-	550 m	-
		9/125 µm fiber	-	8 - 72,000 m	20,000 m	-
		Attenuation analysis				-
		50/125 µm fibre	7,5 dB	-	11 dB	-
		62.2/125 µm fiber	7,5 dB	-	11 dB	-
		9/125 µm fiber	-	6 - 22 dB	11 dB	-
Ethernet services	FDR, SMTP V3, SNMP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, VLAN, IGMP Snooping, RSTP (Rapid Scanning Tree Protocol), priority port, data stream control, secure port.					
<b>Topology</b>	Number of switches	Cascaded	Unlimited			
		Redundant in a ring	max. 50			
<b>Redundancy</b>	Redundant power supplies, redundant single ring, ring coupling					
<b>Power supply</b>	Voltage	Operation	9,6...60 VDC/18...30 VAC, safety extra low voltage (SELV)			
<b>Degree of protection</b>	IP20					
<b>Dimensions W x H x D</b>	111 x 113 x 111 mm					
<b>Conformity to standards</b>	cUL 60950, UL 508 and CSA 22.2, UL 1604 and CSA 213 CSA 22.2 No. 213 Class 1 Division 2, CÉ, GL					
<b>References</b>	TCSESM103F2LG0			TCSESM103F23G0		

(1) With TCSEAAF1LFU00 fiber optic module to be ordered separately

(2) With TCSEAAF1LFH00 fiber optic module to be ordered separately

(3) With TCSEAAF1LFS00 fiber optic module to be ordered separately

Switches			Copper twisted pair and fiber optic, managed			Copper twisted pair, managed
<b>Interfaces</b>	Copper cable ports	Number and type	6 x 10/100 BASE-TX ports			8 x 10/100 BASE-TX ports
		Shielded connectors	RJ45			
		Total length of pair	100 m			
	Fiber optic ports	Number and type	2 x 100 BASE-SX ports	3 x 100 BASE-LX ports		-
		Connector	Duplex SC			-
		Medium	Multimode optical fiber			-
		Length of optical fiber				-
		50/125 µm fiber	5,000 m (1)			-
		62.2/125 µm fiber	4,000 m (1)			-
		9/125 µm fiber	-	-		-
		Attenuation analysis				-
		50/125 µm fiber	8 dB			-
		60.2/125 µm fiber	11 dB			-
		9/125 µm fiber	-	-		-
	Ethernet services	FDR, SNMP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, IGMP Snooping, RSTP (Rapid Scanning Tree Protocol), priority port, data stream control, secure port.				
<b>Topology</b>	Number of switches	Cascaded	Unlimited			
		Redundant in a ring	Max. 50			
<b>Redundancy</b>	Redundant power supplies					
<b>References</b>	TCSESB083F23F0		TCSESB083F2CU0	TCSESB093F2CU0		



Type of gateway		TSX ETG 100	
<b>Transparent Ready services</b>	Class	B10	
	Standard Web services	Configuration	Predefined Web pages
		Read/Write	Acces to connected products list, reading of Modbus devices registers
		Diagnostic	Via predefined Web pages : diagnostic on Ethernet and Modbus links
	Ethernet TCP/IP communication management services	Modbus messaging	Read/Write Modbus registers of connected devices
		SNMP	SNMP Agent, device administration with a SNMP manager
		BOOTP protocol	FDR Client (replacement of defective product)
Security		Miniature firewall on-board (IP address filtering) and password protection	
<b>Ethernet connectivity</b>	Physical interface	10BASE-T/100BASE-TX (RJ45)	
	Data rate	10/100 Mbps with automatic recognition	
	Medium	Twisted pair	
<b>Modbus connectivity</b>	Type of port	RS 485 (2 or 4-wire) or RS 232	
	Protocol	Modbus (RTU and ASCII)	
	Maxi transmission speed	38,4 Kbps (RS 485), 57,6 Kbps (RS 232)	
	Number of devices	32 max.	
<b>Power supply</b>		24 VDC, 4 W or by power supply device PoE (Power Over Ethernet - IEEE 802.3af)	
<b>Degree of protection</b>		IP 30	
<b>Dimensions W x H x D</b>		72 x 81 x 76 mm, mounting on symmetrical DIN rail	
<b>Conformity to standards</b>		UL, cUL (conforming to CSA C22-2 no. 14-M91), UL508 , C-TICK, CE	
<b>Reference</b>		<b>TSX ETG 100 (1)</b>	

(1) Fonctions: Twido, Compact, Momentum, TSX Micro, Altivar, Altistart, Magelis, ... All products compatible with Modbus standard.



Type of gateway		Ethernet/Modbus Plus gateway/router Class B10	
<b>Transparent Ready services</b>	Class	B10	
	Standard Web services	Configuration	Predefined Web pages
		Read/Write	Acces to connected products list, reading of Modbus Plus devices registers
		Diagnostic	Via predefined Web pages : diagnostic on Ethernet and Modbus Plus links
	Standard Ethernet TCP/IP communication services		Modbus TCP messaging
			SNMP Agent
	<b>Functions</b>	Communication gateway	Ethernet/Modbus Plus (many-to-many Modbus Plus)
Interface for programming		Ethernet/Modbus Plus	
<b>Interfaces</b>	Ethernet TCP/IP port	Type	1 x 10BASE-T/100BASE-TX
		Shielded connectors	RJ45
		Medium	Shielded twisted pair
	Serial port	Max. distances	100 m (327 ft)
		Type	1 x Modbus Plus
		Shielded connectors	9-way SUB-D connector
	Medium	Shielded twisted pair (single or double)	
<b>Power supply</b>	Voltage	110/220 VAC (93.5 VAC...242 VAC), 47...63 Hz	
<b>Degree of protection</b>		IP 20	
<b>Dimensions W x H x D</b>		122 x 229 x 248 mm	
<b>Conformity to standards</b>		UL 508, CSA 142, CE	
<b>Reference</b>		<b>174 CEV 200 40 (2)</b>	

(2) Fonctions: 1 Ethernet port, 10BASE-T/100BASE-TX, 1 Modbus Plus port

ConneXium shielded connection cables are available in two versions to meet the various current standards and approvals:

These cables conform to:

- EIA/TIA-568 standard, category CAT 5E,
- IEC 11801/EN 50173 standard, class D.

Their fire resistance conforms to:

- NFC 32070# C2 classification
- IEC 322/1 standards
- Low Smoke Zero Halogen (LSZH).

### EIA/TIA 568 shielded twisted pair cables



#### EIA/TIA 568 shielded twisted pair cables for CE market

Length	m / (ft)	2 (6.6)	5 (16.4)	12 (39.4)	40 (131.2)	80 (262.5)
<b>Straight cables</b>	Preformed at both ends	2 RJ45 connectors for connection to terminal devices (DTE)				
<b>References</b>		490 NTW 000 02	490 NTW 000 05	490 NTW 000 12	490 NTW 000 40	490 NTW 000 80
<b>Crossed cord cables</b>	Preformed at both ends	2 RJ45 connectors for connections between hubs, switches and transceivers				
<b>References</b>		-	490 NTC 000 05	-	490 NTC 000 40	490 NTC 000 80

### EIA/TIA 568 shielded twisted pair cables



Cable material is :

- CEC type FT-1
- NEC type CM

#### EIA/TIA shielded twisted pair cables for UL markets

Length	m / (ft)	2 (6.6)	5 (16.4)	12 (39.4)	15 (49.2)	40 (131.2)	80 (262.5)
<b>Straight cables</b>	Preformed at both ends	2 RJ45 connectors for connection to terminal devices (DTE)					
<b>References</b>		490 NTW 000 02U	490 NTW 000 05U	490 NTW 000 12U	-	490 NTW 000 40U	490 NTW 000 80U
<b>Crossed cord cables</b>	Preformed at both ends	2 RJ45 connectors for connections between hubs, switches and transceivers					
<b>References</b>		-	490 NTC 000 05U	-	490 NTC 000 12U	490 NTC 000 40U	490 NTC 000 80U

### Cables M12



Cables M12						
<b>M12 / M12</b>	Length (m)	1	3	10	25	40
<b>Reference</b>		TCSECL1M1M●●S2●●				
<b>RJ45 / M12</b>	Length(m)	1	3	10	25	40
<b>Reference</b>		TCSECL1M3M●●S2●●				

### Glass fiber optic cables



These glass fiber optics are for making connections:

- To a terminal device (DTE)
- Between hubs, transceivers and switches

#### Glass fiber optic cables

Length	m / (ft)	5 (16.4)	5 (16.4)	3 (9.8)	5 (16.4)
<b>Glass fiber optic cables</b>	Preformed at both ends	1 SC connector 1 MT-RJ connector	1 ST connector (BFOC) 1 MT-RJ connector	2 MT-RJ connectors	
<b>References</b>		490 NOC 000 05	490 NOT 000 05	490 NOR 000 03	490 NOR 000 05



Access Points and Clients		Dual band industrial wireless LAN Access Point/Client based on IEEE 802.11a/b/g/h/i		Dual band industrial high performance wireless LAN Access Point/Client based on IEEE 802.11a/b/g/h/n	
<b>Wireless standard</b>		IEEE 802.11a/b/g/h/i	IEEE 802.11a/b/g/h/i	IEEE 802.11a/b/g/h/n	IEEE 802.11a/b/g/h/n
<b>Operating frequencies</b>		2.4GHz & 5GHz	2.4GHz & 5GHz	2.4GHz & 5GHz	2.4GHz & 5GHz
<b>IP Rating</b>		IP 40	IP 67	IP 40	IP 67
<b>Mounting</b>		Din Rail	Wall / Mast	Din Rail	Wall / Mast
<b>Radios</b>		Access Point: 2 Client: 1	2	1	1
<b>Nominal Data rate</b>		54 Mbps	54 Mbps	300 Mbps	300 Mbps
<b>Antenna connections</b>		4 x RP-SMA	4 x N-type	3 x RP-SMA	4 x N-type
<b>Ethernet connections (10/100BASE-TX)</b>		Access Points: 2 Client: 1	1	2	2
<b>Wireless connections</b>		2 x WLAN Interfaces 8 SSIDs per interface	2 x WLAN Interfaces 8 SSIDs per interface	1 x WLAN Interfaces 8 SSIDs per interface	1 x WLAN Interfaces 8 SSIDs per interface
<b>References</b>	<b>Global</b>	<b>TCSGWA242</b>	<b>TCSGWA272</b>	<b>TCSNWA241</b>	<b>TCSNWA271</b>
	<b>North America (FCC approved)</b>	<b>TCSGWA242F</b>	–	<b>TCSNWA241F</b>	<b>TCSNWA271F</b>
	<b>Client only</b>	<b>TCSGWC241</b>	–	–	–
	<b>ATEX Compliant</b>	–	–	–	<b>TCSNWA2A1</b>

Antennas		TSCG**** Compatible References (1)	TSCN**** Compatible References (1)
2.4 GHz	2.4 GHz Omni Directional (6dBi)	<b>TCSWAB20</b>	–
	2.4 GHz Directional (14dBi)	<b>TCSWAB2D</b>	–
	2.4 GHz Dual Slant (8dBi)	<b>TCSWAB2S</b>	<b>TCSWAB2S</b>
	Leaky Cable – 50 meter	<b>TCSWABC5</b>	–
	Leaky Cable – 100 meter	<b>TCSWABC10</b>	–
5 GHz	5 GHz Omni Directional (5dBi)	<b>TCSWAB50</b>	–
	5 GHz Directional – Medium (18.5dBi)	<b>TCSWAB5D</b>	–
	5 GHz Directional – Long (23dBi)	<b>TCSWAB5V</b>	<b>TCSWAB5V</b>
	5 GHz Directional – 802.11n (23dBi)	<b>TCSWAB5VN</b>	<b>TCSWAB5VN</b>
	5 GHz Dual Slant (9dBi)	<b>TCSWAB5S</b>	–
	5 GHz Directional – 802.11n (9dBi)	–	<b>TCSWAB5DN</b>
Dual Band	Dual Band Hemispherical (6dBi/8dBi)	<b>TCSWABDH</b>	–
	Dual Band Omni (3.5dBi/5.5dBi)	–	<b>TCSWABDON</b>

(1) Consult [www.schneider-electric.com](http://www.schneider-electric.com) for a complete list of antenna cables and accessories for WiFi products

Large area with horizontal green and light green stripes, serving as a template for notes.

# AS-Interface Modicon interfaces for generic products IP20 for mounting in enclosure



Modular interface, width 25 mm V2.1 with standard addressing	Analogue		Digital		
	Number of inputs	2 (0...10V)	2 (0/4...20mA)	4	4
Number of outputs	–	–	4 relay, 2A	4 solid state, 0.5A	4 solid state, 0.5A
Type of addressing	Standard				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.)				–
Supply by 24 VDC external source (black AUX cable)	–	–	–	Outputs	(2)
AS-Interface profile	S.7.3.F.D	S.7.3.F.D	S.7.0.F.E	S.7.0.F.E	S.7.0.F.E
Maximum consumption from AS-Interface (excluding sensor supply)	60 mA	60 mA	110 mA	50 mA	20 mA
Dimensions (WxDxH)	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm
References	<b>ASI20MA2VU</b>	<b>ASI20MA2VI</b>	<b>ASI20MT4I4OR</b>	<b>ASI20MT4I4OS</b>	<b>ASI20MT4I4OSA</b>
Accessory (1) for connection to flat cables	<b>TCSATN01N2</b>	<b>TCSATN01N2</b>	<b>TCSATN01N2</b>	<b>TCSATV01N2</b>	<b>TCSATV01N2</b>

(1) Or direct screw terminal connection (without accessory).

(2) Inputs, outputs and sensor supply (200 mA max.).



Modular interface, width 25 mm V2.1 with Extended (A/B) addressing	Digital				
	Number of inputs	4	2	4	4
Number of outputs	–	1 triac, 2A	3 relay, 2A	3 solid state, 0.5A	3 solid state, 0.5A
Type of addressing	Extended (A/B)				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.) (3)				–
Supply by 24 VDC external source (black AUX cable)	–	–	–	Outputs	(2)
AS-Interface profile	S.0.A.7.0	S.3.A.7.0	S.7.A.7.0	S.7.A.7.0	S.7.A.7.0
Maximum consumption from AS-Interface (excluding sensor supply)	50 mA	40 mA	90 mA	50 mA	20 mA
Dimensions (WxDxH)	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm
References	<b>ASI20MT4IE</b>	<b>ASI20MT2I1OTE</b>	<b>ASI20MT4I3ORE</b>	<b>ASI20MT4I3OSE</b>	<b>ASI20MT4I3OSAE</b>
Accessory (1) for connection to flat cables	<b>TCSATN01N2</b>	<b>TCSATN01N2</b>	<b>TCSATN01N2</b>	<b>TCSATV01N2</b>	<b>TCSATV01N2</b>

(1) Or direct screw terminal connection (without accessory).

(2) Inputs, outputs and sensor supply (200 mA max.).

(3) Except ASI20MT4I3ORE (170 mA max.).

7



## IP67 for mounting on machine



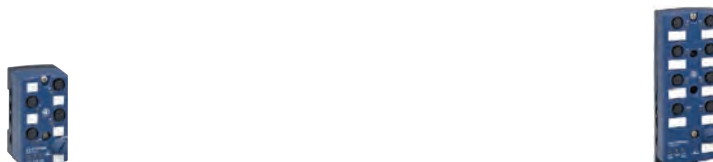
Interface			Digital						
V2.1 with extended (A/B) addressing									
Number of inputs			4	2	–	4	4	8	
Input cabling			Standard (1 x M12)			"Y" (2 x M12)		"Y" (4 x M12)	
Number of outputs			–	2 solid-state, 2A	3 solid-state, 2A	3 solid-state, 2A	–	3 solid-state, 2A	
Type of addressing			Extended (A/B)						
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22*: 100 mA)						
Supply by 24 VDC external source (black AUX cable)			–	Outputs	–	Outputs	–	Outputs	
AS-Interface profile			S.0.A.7.0	S.B.A.7.0	S.8.A.7.0	S.7.A.7.0	S.0.A.7.2	S.7.A.7.E	S.0.A.7.2 (2x)
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	18 mA	48 mA	45 mA	48 mA	90 mA
Dimensions			45X42X80mm	45X42X80mm	45X42X80mm	60x30,5X151mm	45X42X80mm	60x30,5X151mm	60x30,5X151mm
Connection	IDC	Interface	ASI67FFP40E	ASI67FFP22E	ASI67FFP03E	ASI67FFP43E	ASI67FFP40EY	ASI67FFP43EY	ASI67FFP80EY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB03
	M12 connector	Interface + Connection base	ASI67FMP40E	ASI67FMP22E	ASI67FMP03E	ASI67FMP43E	ASI67FMP40EY	ASI67FMP43EY	–

(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference **ASI67FFB02**.



Interface			Digital					
V2.1 with standard addressing								
Number of inputs			4	2	–	4	4	8
Input cabling			Standard (1 x M12)			"Y" (2 x M12)		"Y" (4 x M12)
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A	–
Type of addressing			Standard					
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22*: 100 mA)					
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs	Outputs	–
AS-Interface profile			S.0.0.F.E	S.3.0.F.E	S.8.0.F.E	S.7.0.F.E	S.7.1.F.E	S.0.1.F.F (2x)
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA	49 mA	90 mA
Dimensions (WxDxH)			45X42X80mm	45X42X80mm	45X42X80mm	60x30,5X151mm	60x30,5X151mm	60x30,5X151mm
Connection	IDC	Interface	ASI67FFP40D	ASI67FFP22D	ASI67FFP04D	ASI67FFP44D	ASI67FFP44DY	ASI67FFP80DY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB03	ASI67FFB03
	M12 connector	Interface + Connection base	ASI67FMP40D	ASI67FMP22D	ASI67FMP04D	ASI67FMP44D	ASI67FMP44DY	–

(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference **ASI67FFB02**.



Interface			Digital			
V2.1 (V1 compatible) with standard addressing						
Number of inputs			4	2	–	4
Input cabling			Standard (1 x M12 input)			
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A
Type of addressing			Standard			
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22*: 100 mA)			
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs
AS-Interface profile			S.0.0.F.F	S.3.0.F.F	S.8.0.F.F	S.7.0.F.F
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA
Dimensions			45x42x80 mm	45x42x80 mm	45x42x80 mm	60x30.5x151 mm
Connection	IDC	Interface	ASI67FFP40A	ASI67FFP22A	ASI67FFP04A	ASI67FFP44A
		Standard connection base	ASI67FFB01	ASI67FFB01	ASI67FFB01	ASI67FFB03



TeSys U Control Starter Power base for D.O.L. Starter				Non reversing		Reversing	
				Catalogue Number	Current Rating	Catalogue Number	Current Rating
Connection by screw clamp							
Operational voltage	200/208 V	230/240 V	480 V				
Horse power ratings (CSA/UL ratings)	3	3	7.5	LUB12	12 A	LU2B12●●	12 A
	10	10	20	LUB32	32 A	LU2B32●●	32 A



TeSys U Control units advanced		class 10		class 20
Starting range	Clip-in mounting on power base	Catalogue Number (1)		
		three-phase	single-phase	three-phase
0.15-0.6	12 and 32	LUCBX6●●	LUCX6●●	LUCDX6●●
0.35-1.4	12 and 32	LUCB1X●●	LUCX1X●●	LUCD1X●●
1.25-5	12 and 32	LUCB05●●	LUCX05●●	LUCD05●●
3-12	12 and 32	LUCB12●●	LUCX12●●	LUCD12●●
4.5-18	32	LUCB18●●	LUCX18●●	LUCD18●●
8-32	32	LUCB32●●	LUCX32●●	LUCD32●●

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

Standard control circuit voltages			
Volts	24	48-72	110-240
dc	-	-	-
ac	Coil	-	-
dc or ac	S.7.D.F.0	ES (1)	FU (2)

(1) dc: 48-72 V, ac: 48 V.

(2) dc: 110-220 V, ac: 110-240 V.



Keypads and Control stations V1	TeSys Model U V2.1	
Type of addressing	Standard	Extended (A/B)
Supply by AS-Interface	-	-
Supply by external source (AUX)	Coil	Coil
AS-Interface profile	S.7.D.F.0	7.A.7.E
Maximum consumption from AS-Interface	30 mA/280 mA	30 mA
Dimensions (WxDxH)	Depending on LU model	depending on LU model
Catalogue numbers	ASILUFC5	ASILUFC51
Recommended accessory for connection to AS-Interface cable (4)		TCSATV01N2

For TeSysU information, please refer to catalogue #T8500CT0602EP R3.

(4) Or direct screw terminal connection to AS-Interface and external supply (AUX).

## For dialogue



Control stations V2.1	Control stations with 2 pushbuttons		
	Black and white	Green and red	Green and red illuminated
Type of addressing	Extended (A/B)	Extended (A/B)	Extended (A/B)
Supply by AS-Interface	Buttons	Buttons	Buttons and pilot lights
Supply by external source (AUX)	–	–	–
AS-Interface profile	S.B.A.E.	S.B.A.E.	S.B.A.E.
Consumption from AS-Interface	< 45 mA	< 45 mA	< 80 mA
Dimensions (WxDxH)	68x62x118 mm	68x62x118 mm	68x65x118 mm
References	XALS2001H	XALS2002H	XALS2003H
Recommended accessory for connection to AS-Interface cable (5)	TCSATN011F1	TCSATN011F1	TCSATN011F1

(5) Or direct screw terminal connection to AS-Interface and external supply (AUX).



Interface (6) V2.1	For 2 control units and 2 pilot lights
Number of pages available	–
Number of inputs	2
Number of outputs	2 solid state, 0.5 A
Type of addressing	Standard
Supply by AS-Interface	Inputs and pilot lights
AS-Interface profile	S.B.A.E.
Maximum consumption from AS-Interface	80 mA
Dimensions (WxDxH)	52x15x38 mm
References	XALSZ1E

(6) Direct screw terminal connection to AS-Interface or by accessory for flat cable: TCSATN01N2.



Indicator banks, Ø 70 mm (9) V2.1	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	(7)	(7)	–	–	–
Supply by external source (AUX)	(7)	(7)	–	–	–
AS-Interface profile	S.7.F	S.7.F	–	–	–
Consumption from AS-Interface, supply by AS-Interface / external	250 / 30 mA	250 / 30 mA	–	–	–
Light source	–	–	5 Joule	LED	–
Buzzer	–	–	–	–	70...80 dB at 1m
References	XVBC21A	XVBC21B	XVBC6B● (8)	XVBC2B● (8)	XVBC9B
Recommended accessory for connection to AS-Interface cable & AUX	TCSATN011F1	TCSATN011F	–	–	–

(7) Illuminated units supplied by AS-Interface or externally, configurable by shunt.

(8) 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.

(9) To obtain a complete indicator bank, order a base unit + the illuminated or audible units (5 units maximum).

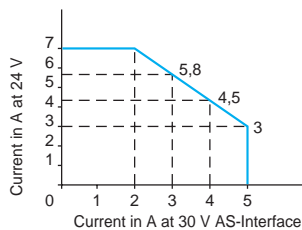
# AS-Interface Installation system

## Master modules



Platform	Twido	Premium	Micro	Quantum	Ethernet GW
Maximum number of master modules per PLC	2	2, 4 or 8 depending on processor	1	8 (1)	–
Compatibility with AS-Interface interfaces and components	V1 / V2.1	V1 / V2.1	V1	V1	V1 / V2.1 / V3.0
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block	by terminal block
Maximum number of addresses	62	62	31	31	62
Type of addressing	Standard / Extended (A/B)	Standard / Extended (A/B)	Standard	Standard	Standard / Extended (A/B)
Compatibility with analogue interfaces	Yes	Yes	–	–	Yes
Compatibility with safety interfaces	Yes	Yes	Yes	Yes	Yes
AS-Interface profile	M.3	M.2.E	M.2	M.2	M.4
References	<b>TWDNOI10M3</b>	<b>TSXSAY1000</b>	<b>TSXSAZ10</b>	<b>140EIA92100</b>	<b>TCSAGEA1SF13F</b>

(1) 4 per local rack, 4 per remote I/O, 2 per distributed I/O.



## Power supply units



Type of supply	AS-Interface		AS-Interface + Auxiliary
Input voltage	100...240 VAC	100...240 VAC	100...240 VAC
AS-Interface output voltage	30 VDC	30 VDC	30 VDC
Auxiliary output voltage	–	–	24 VDC
AS-Interface nominal power	73 W	146 W	73 W
Auxiliary nominal power	–	–	72 W
AS-Interface nominal current	2.4 A	4.8 A	2.4 A
AUX nominal current	–	–	3 A
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block
Dimensions (WxDxH)	54x120x120 mm	81x120x120 mm	81x120x120 mm
References	without earth fault detection with earth fault detection	<b>ASIABL3002</b> <b>ASIABLD3002</b>	<b>ASIABL3004</b> <b>ASIABLD3004</b> <b>ASIABLM3024</b>

(2) Power supply unit with constant maximum output, see curve above.

## Insulation control relay



Type	For AS-Interface line
Degree of protection	IP20
Number of C/O contacts	2 relays, each with 1 N/O contact
Rated operational voltage	50 VDC
Dimensions (WxDxH)	90x58x76 mm
References	<b>RM0PAS101 (3)</b>

(3) Provided with an impedance adapter.

## Cables, repeater and line extension



Type	Yellow AS-Interface cable	Black Auxiliary cable	Repeater (5)	Line Extension	
Wire c.s.a.	2 x 1.5 mm <sup>2</sup>	2 x 1.5 mm <sup>2</sup>	–	–	
References	Cable	L = 20 m	XZCB10201 (4)	XZCB10202 (4)	–
		L = 50 m	XZCB10501 (4)	XZCB10502 (4)	–
		L = 100 m	XZCB11001 (4)	XZCB11002 (4)	–
Reference of repeater	–	–	ASIRPT01	TCSARR011M	

(4) Standard cable. For TPE cable (oil and vapour resistant) add the letter **H** to the end of the reference, example: XZCB10201 becomes **XZCB10201H**.

(5) Enables an AS-Interface network to be extended by 100 m. Direct connection to the AS-Interface yellow cable by IDC

## Tap-offs for flat cable

(For connecting interfaces and components)



Connection to cable by IDC	AS-Interface IP67	AS-Interface + Auxiliary IP67				
Connection to the AS-Interface component	M12 connector (6)	Bared wires (7)				
References	Cable	L = 1 m	TCSATN011F1	–	TCSATV011F1	–
		L = 2 m	TCSATN011F2	TCSATN01N2	TCSATV011F2	TCSATV01N2

(6) Female 5-pin M12 end connector, screw threaded for connection with M12 male connector.

(7) 2 x 0.34 mm<sup>2</sup> for product with terminal block.

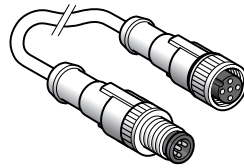
(8) 4 x 0.34 mm<sup>2</sup> for product with terminal block.

7

## T connectors

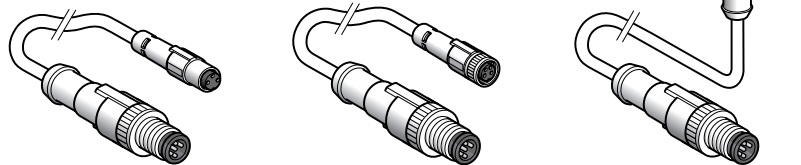


Connection to cable by IDC	T connector AS-Interface IP 67	Branch AS-Interface or Auxiliaires IP 67
Connection to the AS-Interface sensor or actuator	1 x M12 connector 5-pin female, screw threaded	Extension for 2 flat cables
References	TCSATN011F	TCSATN02V



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
References	Cable L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
	L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

## Jumper cables M12 / M8 or DIN

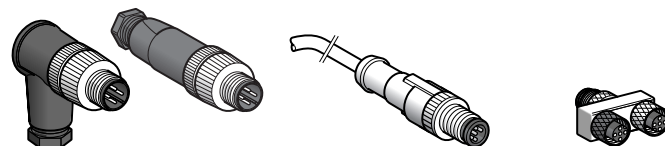


Type		Male / Female jumper cable		
Male connector type, interface side		M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.
Female connector type, sensor side		M8, 3-pin, straight (1)	M8, 3-pin, straight, screw thread.	DIN 43650A, elbowed, screw thrd.
Cable		PUR, black	PUR, black	PUR, black
References	Cable L = 1 m	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
	L = 2 m	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

(1) Clip together connector.

7

## Connectors, splitter box



Type		Connectors	Pre-wired connectors	Splitter box
Male connector type, interface side		M12, 4-pin	M12, 5-pin, straight, screw thread.	1 x M12, 5-pin, straight, screw thrd.
Female connector type, sensor side		–	–	2 x M12, 5-pin, straight, screw thrd.
Cable		–	PUR, black	–
References	Straight connector, screw thread.	XZCC12MDM40B	–	FTXCY1212
	Elbowed connector, screw thread.	XZCC12MCM40B	–	–
	Cable L = 0.5 m	–	XZCP1564L05	–
	Cable L = 2 m	–	XZCP1564L2	–

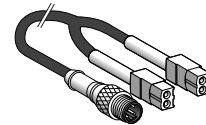
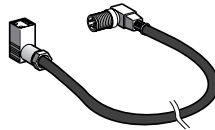
# Tools

## Adjustment and addressing terminals



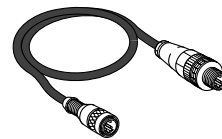
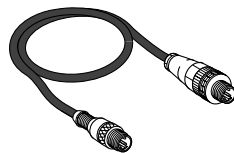
<b>Display</b>	<b>25 mm LCD screen</b>
Degree of protection	IP40
AS-Interface voltage / current measurement	yes
Addresses stored in memory	yes
Access to functions	direct by selector switch
Compatibility	V1/V2
Operating time	2500 addressing operations
References	<b>ASITERV2</b>
Reference with set of 7 leads + protective cover for terminal	<b>ASITERV2SET</b>

## Addressing accessories for terminals ASITERV2 and XZMC11



Product connection	Infrared addressing	Socket
For products	ASISL...	ABE8... / APP1 / ASILUF... / XBZS43 / ASI20M
References	<b>ASITERIR1</b>	<b>XZMG12</b>

7

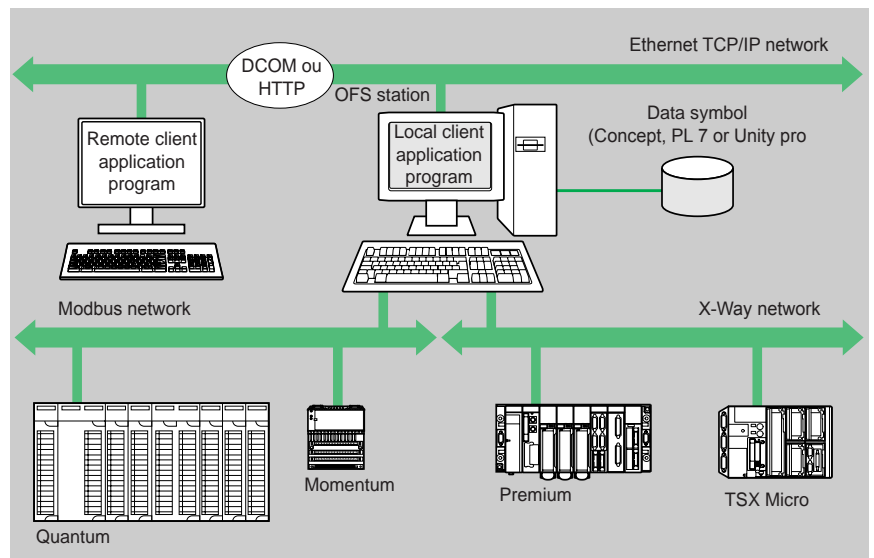


Product connection	M12, male	M12, female	Jack plug
For products	(2)	ASI67FMP XVB... / XAL... / LF...	ASI20M... / ASI67FFP...
References	<b>ASITERACC1M</b>	<b>ASITERACC1F</b>	<b>ASITERACC</b>

(2) Possibility to connect AS-Interface cable using T connector TCSATN011F.



Type	OPC data server	
	OFS Small	OFS Large
Items number	1000 items	Unlimited
OPC protocols	OPC DA	OPC DA, OPC XML DA,
References	Single station licence	<b>TLX CD SU OFS 33</b>
	10 stations licence	<b>TLX CD ST OFS 33</b>
	200 stations licence	<b>TLX CD LF OFS 33</b>



**Description:**

Based on the OPC protocols, Schneider-Electric's OFS software (**OPC Factory Server**) enables local or remote OPC client applications such as SCADA, supervisors or custom interfaces, to access Schneider devices and PLCs data in real time.

OFS software is a multi-device data server which provides simultaneous use of various communication protocols, and allows client applications to access control data via physical addresses or via symbols

**Supported devices :**

- Modicon Quantum, Premium, Micro, Compact and Momentum PLCs
- TSX Series 7 and April Series 1000 Schneider-Electric PLCs
- Serial Modbus or Uni-Telway devices connected via Schneider-Electric and Merlin Gerin gateways TSX ETG 10xx, EGX xxx ranges etc.

**Supported networks and protocols :**

- Modbus: Serial Modbus, Modbus Plus, Modbus TCP/IP.
- XWAY/UNI-TE: Uni-Telway, FIPWAY, ETHWAY, ISAWAY, PCIWAY.

**Openess:**

OFS V3.3, integrates the most recent specifications of the OPC Foundation:

- **OPC-DA** (OPC Data Access)
- **.NET API interface**
- **OPC XML-DA V1.0** (OPC XML Data Access)

The development of specialized interfaces is even more easy and open.

Developers and System integrators can develop custom applications (in Visual Basic, VBA for Excel, C++, etc) requiring access to Schneider Electric control devices. The OPC XML-DA V1.0 interface is designed to provide an interface for Windows and non-Windows client applications and remote access via the Internet through firewalls.





## FactoryCast modules for PLC

*“Ready to use” diagnostic and monitoring functions embedded in a PLC module accessible remotely via a simple Internet browser:*

- Real-time communication based on Ethernet TCP/IP (Modbus and Uni-TE)
- Secure access to the PLC system and application diagnostics
- Numerical or graphical data monitoring and control
- E-mail notifications
- Web server open to user customization and creation of Web pages for diagnostics suited to your needs
- Library of animated graphic objects
- Open communications using SOAP/XML protocol as a server interface (Web services)

## FactoryCast HMI modules for PLC

*Diagnostic functions identical as FactoryCast modules + Built-in HMI / SCADA functions embedded in a PLC module:*

- Visualization of Unity Pro PLC program and Operator screens via Web pages
- PLC data acquisition
- Calculations scripts for data-processing Real-time database (1000 variables)
- Alarm and report notifications via E-mail
- Archiving of data directly into database servers (SQL, Oracle, MySQL)
- Data logging in CSV files in the module.
- Recipe management with read Database
- Dynamic HTML Reporting function
- Web server open to user Web pages customization
- Built-in Supervision via graphic screens and custom Web pages
- Data monitoring and Graphic monitoring (read/write)
- Library of animated graphic objects
- Open communication using SOAP/XML protocol as a server interface (Web services)

## FactoryCast Gateways - ETG 1000 / 10.. modules

*Cost-effective web gateways offer integrating in a stand-alone module:*

- All Communications network interfaces: Ethernet TCP/IP, Modbus and Uni-Telway
- Remote access functions, RAS server,
- Transparent gateway / Router functions
- Notification of alarms via E-mail
- Data monitoring and Graphic monitoring (read/write)
- A user customizable Web server for creating an interface fully adapted to your needs
- Library of animated graphic objects

## FactoryCast HMI Gateways - ETG 3000 / 30.. modules

*“All in one” Web gateway module integrating in a stand-alone device:*

- a built-in modem (PSTN or GSM/GPRS) depending on the reference
- Secured access : VPN, data encryption and IP filtering.
- A Remote Access server function (RAS)
- 2 Ethernet ports and a Modbus serial port
- Transparent gateway router functions NAT to Ethernet or Modbus serial devices
- I/O card : 6 discrete inputs/ 2 discrete outputs
- Operating temperature : -25°C to +75°C
- User customizable Web server
- Built-in Supervision via graphic screens and custom Web pages
- Data monitoring and Graphic monitoring (read/write)
- Data Acquisition, Data Processing and Data logging in the module (CSV files)
- Archiving of data directly into database servers (SQL, Oracle, MySQL)
- Alarms and reports via E-mail / SMS
- Open communication using SOAP/XML protocol as a server interface



Embedded in the TCP/IP communication modules for Modicon M340, Premium and Quantum PLCs, FactoryCast Web servers provide secured access to the diagnostics, monitoring and maintenance functions of your automation installations via a simple web browser.



In the areas of distributed infrastructures, transport, RTU installations, industry and machines, ETG 1000 / 3000 modules more than satisfy your requirements for remote diagnostics and maintenance, remote monitoring and control, and remote programming.



Applications		Web Server modules for PLCs					
		FactoryCast				FactoryCast HMI	
Target devices	Type	TSX Micro PLCs	Modicon M340 PLCs	Modicon Premium PLCs	Modicon Quantum PLCs	Modicon Premium PLCs	Modicon Quantum PLCs
Network & Remote access services	Remote access	Intranet or via external RAS/modem					
		Remote programming, downloading via FTP, access to Web server via Internet browser					
	Gateway function	-					
	Serial protocols	-					
	Ethernet protocols	Modbus TCP, Uni-TE	Modbus TCP	Modbus TCP, Uni-TE	Modbus TCP	Modbus TCP, Uni-TE	Modbus TCP
	TCP/IP protocols	BootP/DHCP, DNS, SNMP agent, SMTP client, NTP client, FTP					
	Security	Protection by IP address filtering and passwords					
Web server	Characteristics	HTTP and FTP server, 8 Mb memory available for user, hosting of user Web pages and documents (Doc, Pdf, Excel)					
Predefined services	Configuration	Via Web Designer software or predefined Web pages					
	Diagnostics	System, rack and PLC I/O diagnostics via predefined Web pages					
	Monitoring of variables	Monitoring of devices and application via animated data (read/write variables)					
	Alarm management	PLCs and applications alarms monitoring via predefined Web pages					
Customizable services	Graphic views	Graphic monitoring via animated pages (integrated graphic editor)					
	Unity Pro operator screen	-				Display in the form of Web pages	
	User Web pages	Graphic monitoring via animated Web pages created by the user					
Advanced services and HMI	Calculation scripts	-				Arithmetic and logical scripts	
	E-mail service	Alarm notification by E-mail					
	Data logging	-				Data logging in the module with time stamping (CSV files)	
	Database connection	-				Direct logging in an SQL, Oracle, MySQL database servers	
	Report service	-				Dynamic HTML report management	
	Recipe service	-				Management of "Recipe" data (storage and read locally or on remote database)	
	PLC programme visualization by Web page	-				All the languages supported by Unity Pro, are accessible by Web page on Runtime, without Unity Pro	

## Application development software

## Web Designer

Supplied with each module



## References

TSXETZ510	BMXNOE0110	TSXETY5103	140NOE77111	TSXWMY100	140NWM10000
-----------	------------	------------	-------------	-----------	-------------

# FactoryCast Gateway

## Web Gateways for Remote control



### Standalone Gateway, Web Server for Remote Access FactoryCast Gateway ETG 1000

### FactoryCast HMI Gateway ETG3000

All equipment supporting Modbus	All equipment supporting Uni-Telway	All Modicon PLCs and third-party equipment supporting Modbus	
Intranet or via external Modem, integrated RAS function		Intranet or Modem External modem, integrated RAS	Intranet or Modem Integrated PSTN/RTC/GSM modem and RAS modem, NAT
Remote programming, downloading via FTP, access to Web server via		Internet browser	
Ethernet to Modbus serial Modem to Modbus serial and Ethernet	Ethernet to Uni-Telway serial Modem to Uni-Telway and Ethernet	Ethernet to Modbus serial Modem to Modbus serial and Ethernet (Modbus, UNITE)	
Modbus (Master)	Uni-Telway (Slave)	Modbus (Master)	
Modbus TCP	Modbus TCP, Uni-TE (Modicon Premium, Modicon TSX Micro)	Modbus TCP Uni-TE TCP	
BootP/DHCP, SNMP agent, SMTP client, NTP client, FTP		DHCP, DNS, SNMP agent, SMTP client, NTP client, FTP	
Protection by IP address filtering and password		Protection by IP address filtering and password + Tunnels VPN & encryption of the datas.	
HTTP and FTP server, 8 Mb memory available for user, hosting of user Web pages and documents (Doc, Pdf, Excel)		HTTP and FTP server, 32 Mb memory available for user Web pages, memory extension using Compact Flash cards 1 Gb max., hosting of user Web pages and documents (Doc, Pdf, Excel)	
Via Web Designer software or predefined Web pages			
Diagnostics of serial devices via predefined Web pages		Network diagnostics, diagnostics of serial devices and Ethernet via predefined Web pages	
Monitoring of devices and application via data tables (read/write variables)			
Via E-mail		Via E-mail/SMS	
Graphic monitoring via animated views (integrated graphic editor)			
-			
Graphic monitoring via animated Web pages created by the user		Arithmetic and logical scripts	
Alarm notification by E-mail		Alarm notification by E-mail/SMS	
-		Data logging in the module with time stamping (CSV files)	
-		Direct recording in SQL, Oracle, MySQL database servers	
-		Dynamic HTML report management	
-		Management of "Recipe" data (storage and revad locally or on remote database)	
-		-	

### Web Designer

Supplied with each module



TSXETG1000

TSXETG1010

TSXETG3000

TSXETG3010 (Modem RTC)

**TSXETG3021**  
Modem GSM/GPRS  
(Bands 900/1800MHz)  
**TSXETG3022**  
Modem GSM/GPRS  
(Bands 850/1900 MHz)

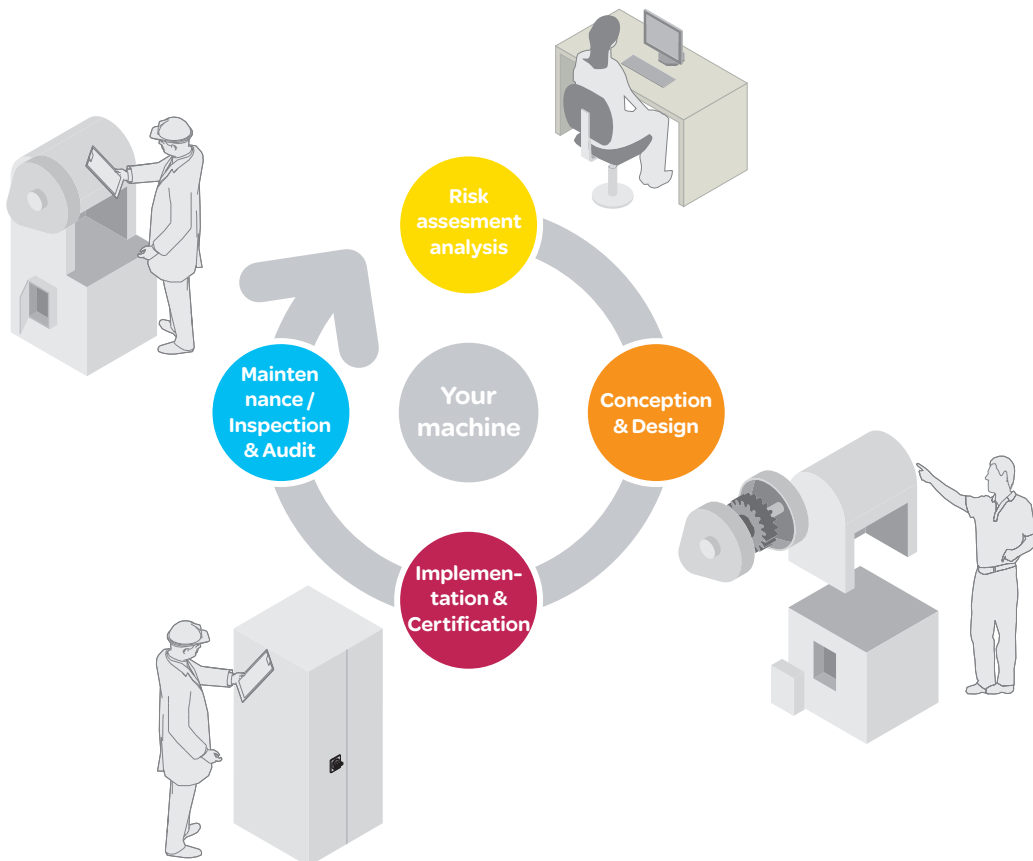
# Preventa

The Preventa range enhances safety throughout a machine's entire life cycle from design, manufacture, installation, adjustment, operation and servicing right through to decommissioning.

# 8

In addition to moral obligation and economic consequences, the law requires that machinery is safe in the interests of accident prevention. Preventa offers an extensive range of safety products, compliant with international standards, designed to provide the most comprehensive protection for personnel and equipment.

Preventa, the safety attitude around your machine life cycle



# 8 | Machine safety



## **Safety standards** ..... 8/2 to 8/7

## **Automation** ..... 8/8 to 8/10

Safety controllers and modules

## **AS-Interface Safety at work** .....8/11 to 8/12

Safety monitors and interfaces

## **Operator dialogue** ..... 8/13 to 8/16

Emergency stops  
Foot switches  
Control units

## **Motor control** ..... 8/17 to 8/19

Switch disconnectors  
Motor starters

## **> New machines - the Machinery Directive**

The Machinery Directive 98/37/EC is to compel manufacturers to guarantee a minimum safety level for machinery and equipment sold within the European Union.

From 29 December 2009, the new European Machinery Directive 2006/42/EC is effective. Machines have to comply with the Essential Health and Safety Requirements (EHSRs) listed in Annex I of the Directive, thus setting a common minimum level of protection across the EEA (European Economic Area).

Machine manufacturers, or their authorised representatives within the EU, must ensure that the machine is compliant, the Technical File can be made available to the enforcing authorities on request, the CE marking is affixed, and a Declaration of Conformity has been signed, before the machine may be placed on the market within the EU.

# Why safety?



Human life is the most important value in a company!

Schneider Electric protect people and improve your productivity.

# Functional safety



«Helping you to reach easily your safety machinery and standard level required»

Thanks to directives and standards as guidelines.

# Certified safety chain solutions, designed for you by one of the leading automation companies!

## The concept:

Providing certified safety functions, on the basis of an approved combination of products and simplified schematic, to save time, reduce costs and obtain certification in accordance with the new European Machinery Directive.

## Its are made by:

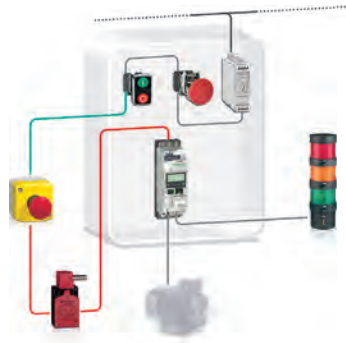
- > Layout of solution indicating performance level (PL) and safety integrity level (SIL)
- > Bill of materials and the system description file
- > Example description of the PL and SIL calculation for the safety function
- > Safety conceptual principle diagram
- > Certification of all the product combination from a notify body



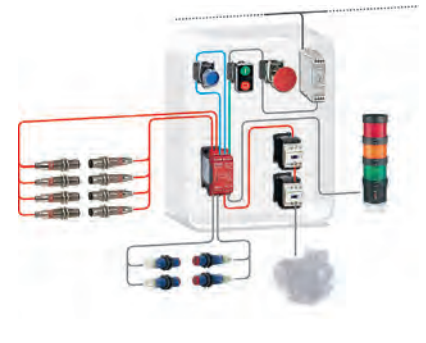
**Approved**

- > Safety chain solutions to achieve the safety level required

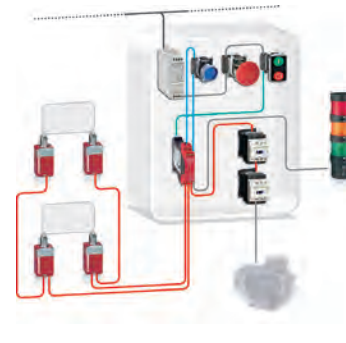
Motor starter (PL c, SIL 1)



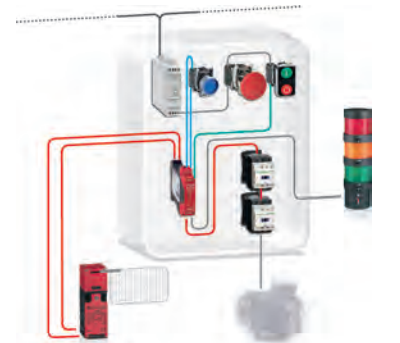
Light curtain (PL c, SIL 1)



Safe stop 0 (PL d, SIL 2)



Safe stop 0 (PL e, SIL 3)  
High performance



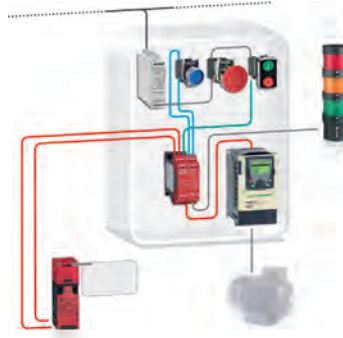




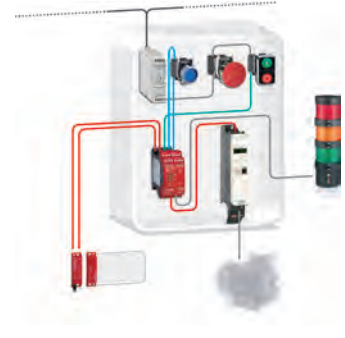
Be confident by using certified safety chain solutions provided by an automation leader

- > Reduce design time by our examples of calculation of the safety level for each safety function

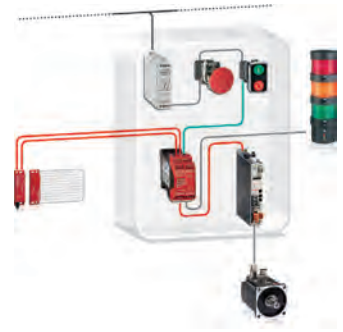
Safe stop 1 (PL d, SIL 2)  
Variable speed drive



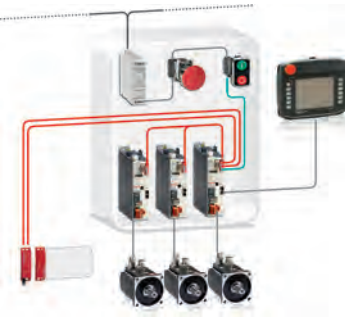
Safe stop 1 (PL e, SIL 3)  
High performance



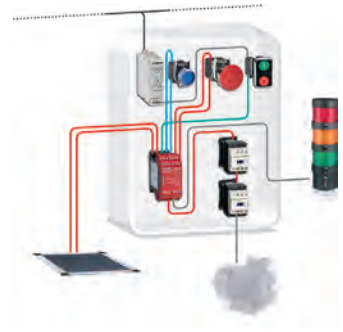
Safe stop 1 (PL e, SIL 3)  
Servo drive



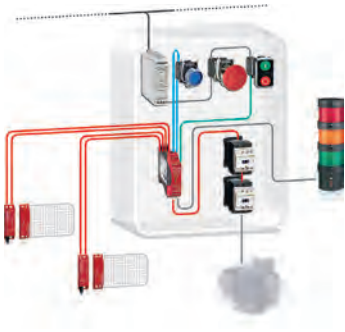
Safe stop 2 (PL e, SIL 3)  
Servo-enhanced safety



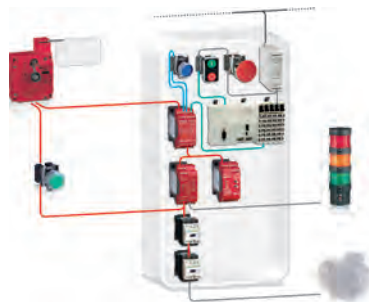
Safety Mat (PL d, SIL 2)



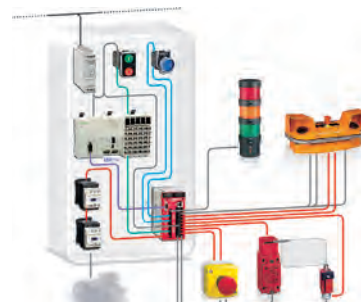
Magnetic switches (PL e, SIL 3)



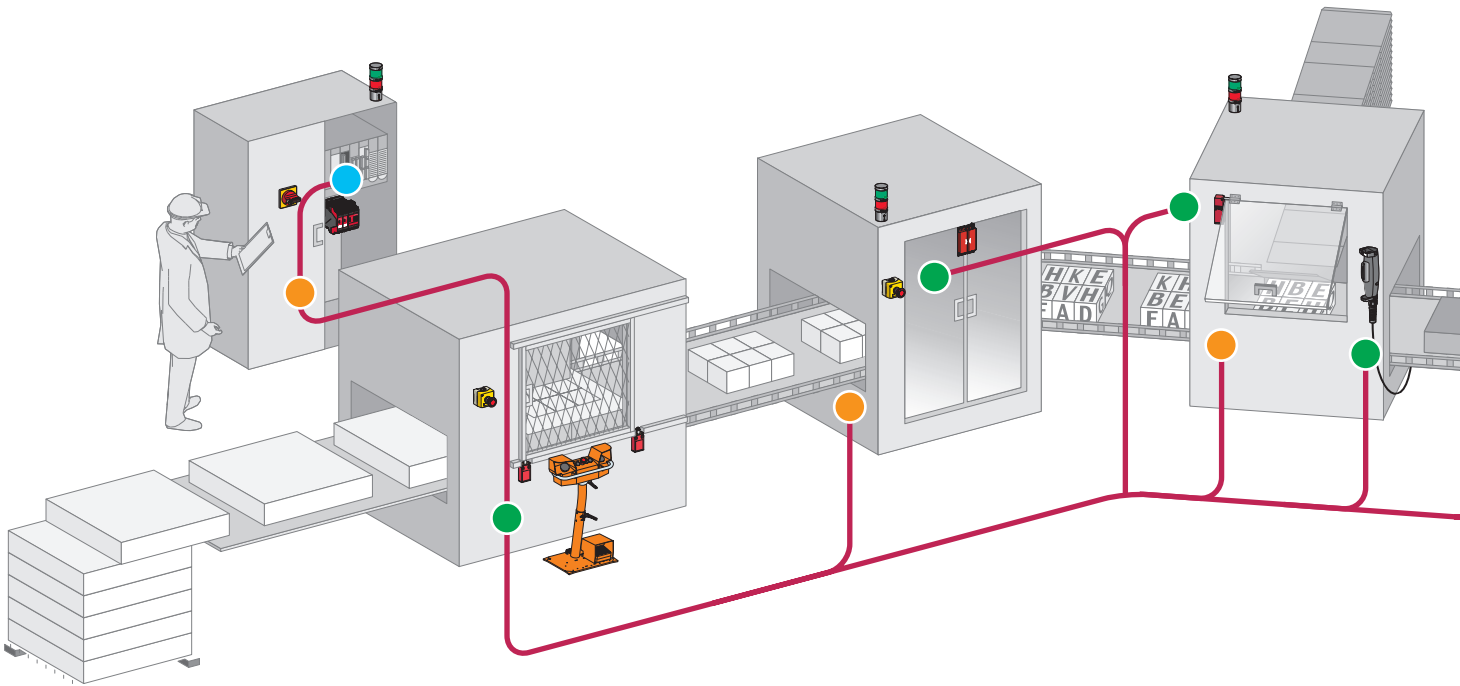
Zero speed detection (PL e, SIL 3)



Multifunction (PL e, SIL 3)



# Save cost and time with our Preventa offer



## Safe signal transmission

### Acquire the information\*:

- > Protective guard devices used as part of safeguarding systems to control the access under specific conditions of reduced risk.
- > Light curtains and safety mats to detect approach to dangerous and limited areas.
- > Generic protective measures - Emergency stop.



Protective guard devices

### Monitor and processing:

- > Safety relays modules with a specific safety function to monitor input signals from safety devices and to interface with contactors and drives by switch off the output safety contacts.
- > Safety Controller: configurable safety device capable of centralized a generic range of safety monitoring functions.
- > Safety PLCs: programmable electronic systems to carry out safety or non-safety related tasks for machinery and equipment.
- > "AS-Interface safety at work": safety field bus network certified to work with safety devices to provide safety functions.

8



Light curtains



Safety mats



Enabling switches

\*For detection products please refer to The Essential Guide of Detection



Emergency stop



Tripwire switch



Safety relays



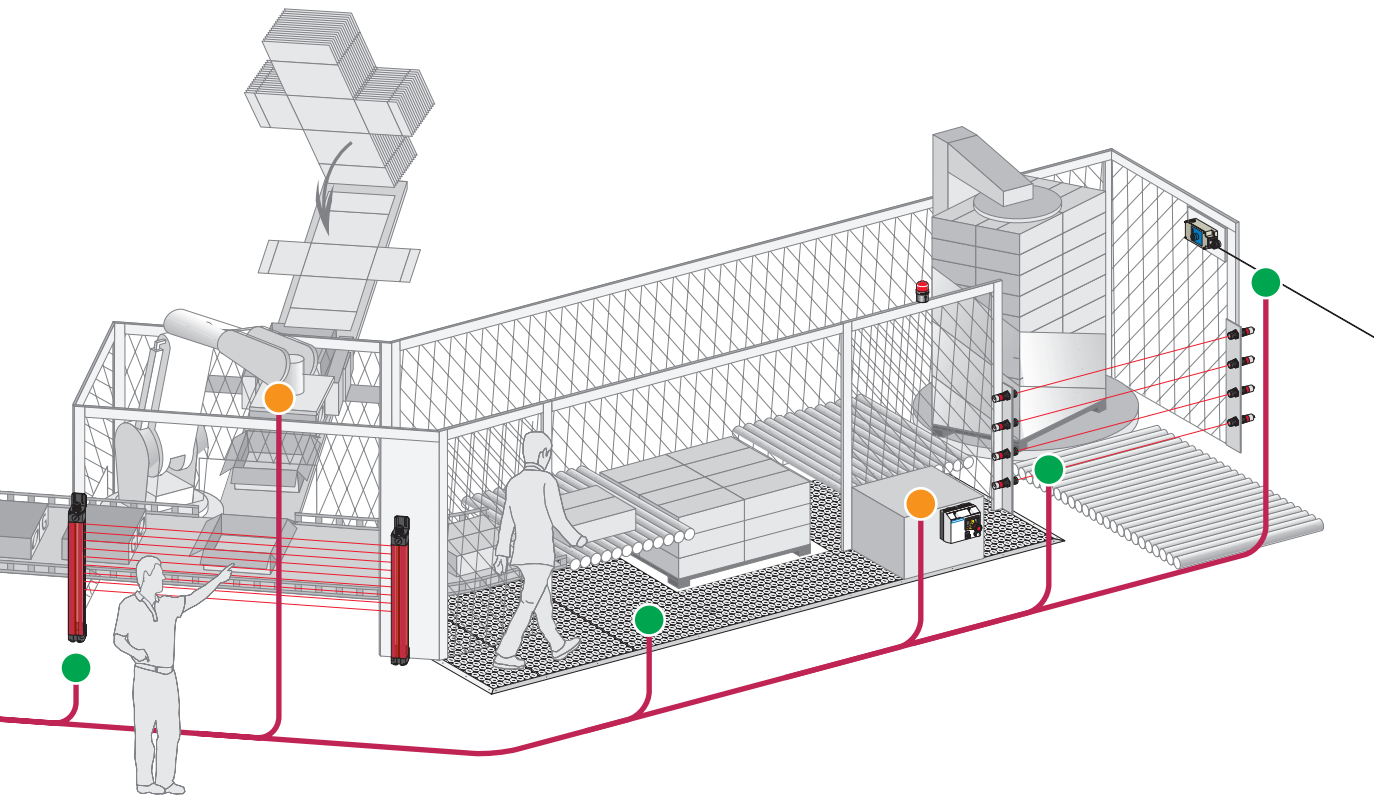
Safety Controller



Safety PLCs



AS-Interface safety at work



## Stop the machine:

- > Contactors to cut-off the electrical power supply to the motors with mechanically linked mirror auxiliary contacts integrated for the feedback loop diagnosis of safety modules.
- > Variable speed drives and servo drives controlled stopping of the dangerous movement by safety functions integrated.
- > Rotary switch disconnectors: for equipment isolation from the electrical supply and for emergency stop by direct interruption of the power supply.



Variable Speed Drives



Servodrives



Contactors



Rotary switch disconnectors

## 1 Complete & upgraded safety offer:

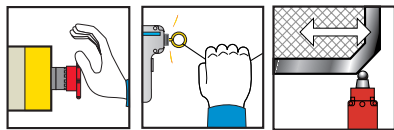
Improve safety level required

## Up to 50% of space optimization

Increase the compactness by reducing size.

## Save up to 30% on installation time

Reduce installation time by easy and quick wiring.



Universal



<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL e / Cat. 4, SILCL 3</b>		
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function
	Additional	–		3 solid-state
<b>Display (number of LEDs)</b>		30		12
<b>Width of housing</b>		74 mm		45 mm
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (1) (2)	<b>XPSMC32ZC</b> (1) (2)	<b>XPSMC32ZP</b> (1) (2)	<b>XPSMP11123P</b> (3)
-----------------------	--------	-------------------------	--------------------------	--------------------------	------------------------

### coded magnetic switches enabling switch



Universal



<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL e / Cat. 4, SILCL 3</b>		
<b>For monitoring</b>		magnetic switches and enabling switch		
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function
	Additional	–		3 solid-state
<b>Display (number of LEDs)</b>		30		12
<b>Width of housing</b>		74 mm		45 mm
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (1)(2)	<b>XPSMC32ZC</b> (1)(2)	<b>XPSMC32ZP</b> (1)(2)	<b>XPSMP11123P</b> (3)
-----------------------	--------	------------------------	-------------------------	-------------------------	------------------------

### safety mats and edging



Universal



<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL d / Cat. 3, SILCL 2</b>		
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function
	Additional	–		3 solid-state
<b>Display (number of LEDs)</b>		30		12
<b>Width of housing</b>		74 mm		45 mm
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP

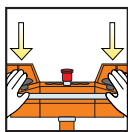
Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (1)(2)	<b>XPSMC32ZC</b> (1)(2)	<b>XPSMC32ZP</b> (1)(2)	<b>XPSMP11123P</b> (3)
-----------------------	--------	------------------------	-------------------------	-------------------------	------------------------

(1) Version with 32 inputs. For version with 16 inputs, replace 32 in the reference by 16 (example: XPSMC32Z becomes XPSMC16Z).

(2) Configuration software XPSMCWIN (complete version) or SSVXPSMCWINUP (update version), connecting cable, adaptor and set of screw terminal plug-in connectors XPSMCTS16 and XPSMCTS32 or set of spring clip terminal plug-in connectors XPSMCTC16 and XPSMCTC32 to be ordered separately.

(3) For fixed connector version, delete the letter P from the end of the reference (example: XPSMP11123P becomes XPSMP11123).



Universal

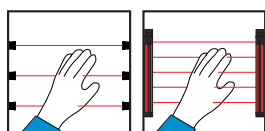


<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL e / Cat. 4, SILCL 3</b>		
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		
	Additional	-		
<b>Display (number of LEDs)</b>		30		
<b>Width of housing</b>		74 mm		
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (1)(2)	<b>XPSMC32ZC</b> (1)(2)	<b>XPSMC32ZP</b> (1)(2)
-----------------------	--------	------------------------	-------------------------	-------------------------

**light curtains**



Universal



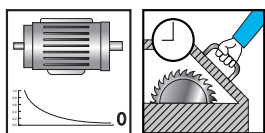
<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL e / Cat. 4, SILCL 3</b>			<b>2 light curtains monitoring max.</b>
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		2x3N/O per function	6 PNP solid-state
	Additional	-		3 solid-state	1 PNP + 1 NPN
<b>Display (number of LEDs)</b>		30		12	14 + double display units
<b>Width of housing</b>		74 mm		45 mm	100 mm
<b>Integral Muting function</b>		Yes		No	Yes
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP	-

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (1)(2)	<b>XPSMC32ZC</b> (1)(2)	<b>XPSMC32ZP</b> (1)(2)	<b>XPSMP11123P</b> (3)	<b>XPSLCM1150</b> (4)
-----------------------	--------	------------------------	-------------------------	-------------------------	------------------------	-----------------------

- (1) Version with 32 inputs, for version with 16 inputs, replace 32 in the reference by 16 (example: XPSMC32Z becomes XPSMC16Z).
- (3) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSMP11123P becomes XPSMP11123).
- (4) Removable terminal blocks

**zero speed, time delay**



Universal

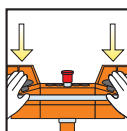


<b>Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)</b>		<b>PL e / Cat. 4, SILCL 3</b>		
<b>For monitoring</b>		Motor zero speed condition		
<b>Number of circuits</b>	Safety	2 x 2N/O + 6 solid-state		
	Additional	-		
<b>Display (number of LEDs)</b>		30		
<b>Width of housing</b>		74 mm		
<b>Communication interface</b>		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

<b>Supply voltage</b>	24 VDC	<b>XPSMC32Z</b> (5) (2)	<b>XPSMC32ZC</b> (5) (2)	<b>XPSMC32ZP</b> (5) (2)
-----------------------	--------	-------------------------	--------------------------	--------------------------

- (2) Configuration software XPSMCWIN (complete version) or SSVXPSMCWINUP (update version), connecting cable, adaptor and set of screw terminal plug-in connectors XPSMCTS16 and XPSMCTS32 or set of spring clip terminal plug-in connectors XPSMCTC16 and XPSMCTC32 to be ordered separately.
- (5) Plug-in connector version only.



New



Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL c / Cat. 1 (type IIIA to EN 574/ISO 13851)	PL e / Cat. 4, SILCL 3 (type IIIC to EN 574/ISO 13851)	
Number of circuits	Safety	1N/O	2N/O	2N/O
	Additional	1N/C	1N/C	2 solid-state
Display (number of LEDs)		2	3	3
Width of housing		22.5 mm	22.5 mm	22.5 mm

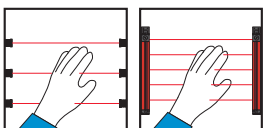
Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	–	–	XPSBF1132P (1)
	24 VAC/DC	XPSBA5120	XPSBCE3110P (2)	–

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSBF1132P becomes XPSBF1132).

(2) For version with cage clamps removable terminal block, change the letter P for C from the end of the reference (example: XPSBCE3110P becomes XPSBCE3110C)

## light curtains



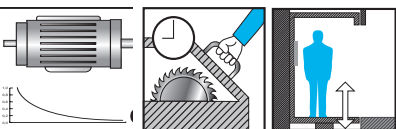
Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL c / Cat. 2, SILCL 1	PL e / Cat. 4, SILCL 3		
Number of circuits	Safety	2N/O	3N/O	3N/O	7N/O
	Additional	4 solid-state	–	1N/C + 4 solid-state	1N/C + 4 solid-state
Display (number of LEDs)		4	3	4	4
Width of housing		45 mm	22.5 mm	45 mm	90 mm
Integral Muting function		Yes	No	No	No

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSCM1144P (1)	–	–	–
	24 VAC/DC	–	XPSAFL5130P (1)	XPSAK311144P (1)	XPSAR311144P (1)

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSCM1144P becomes XPSCM1144).

## zero speed, time delay and lifts



New



Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL d / Cat. 3, SILCL 2		PL e / Cat. 4, SILCL 3	
For monitoring		Motor zero speed condition	Safety time delay	Lifts	
Number of circuits	Safety	1N/O + 1N/C	1N/O time delay	1N/O pulse	2N/O
	Additional	2 solid-state	2N/C + 2 solid-state	2N/C + 2 solid-state	2 solid-state
Display (number of LEDs)		4	4	4	4
Width of housing		45 mm	45 mm	45 mm	22.5 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSVNE1142P (1)	–	–	–
	24 VAC/DC	–	XPSTSA5142P (2)	XPSTSW5142P (2)	XPSEDA5142

(1) Motor frequency ≤ 60 Hz.. For frequencies ≥ 60 Hz, please refer to the "Safety solution" catalogue.

(2) Removable terminal block version only.



Maximum safety level of the solution attained (EN ISO 13849-1, EN/IEC 62061)		PL e / Cat. 4, SILCL 3	
Number of circuits	Safety	2N/O	2 x 2N/O
	Auxiliary	1 solid-state	2 solid-state
Display (number of LEDs)		5	8
Width of housing		45 mm	45 mm
AS-Interface profile		S.7.F	S.7.F
Master module compatibility		V1 / V2.1	V1 / V2.1
References of monitor with	enhanced functions	ASISAFEMON1B	ASISAFEMON2B
	standard functions	ASISAFEMON1	ASISAFEMON2

**Configuration software, adjustment terminal and AS-Interface analyser**



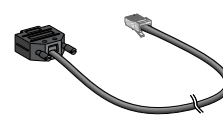
Type	Configuration software (1)	Adjustment terminal (2)	AS-Interface Analyser
Multilingual	EN / FR / DE / ES / IT / PT	–	■ Analysis and diagnostics of AS-Interface line and Safety at Work
For use with	ASISAFEMON1/2, ASISAFEMON1B/2B	–	■ Complements the diagnostic functions of the local AS-Interface master
Media	CD-ROM PC	–	■ Maintenance or validation of AS-Interface lines
Environment	Windows	–	■ Print-out of AS-Interface line tests 92 x 28 x 139 mm
Degree of protection	–	IP 40	
Supply	–	4 x LR6 batteries	
Dimensions W x D x H	–	70 x 50 x 170 mm	
References	Complete version	ASISWIN2	ASISA01
	Update version (3)	SSVASISWINUP	–

(1) CD-ROM with hardware and software user guides.

(2) For addressing safety interfaces, use the infrared adaptor ASITERIR1 or the standard adaptor ASISAD1.

(3) To be ordered only if a previous version of ASISWIN have been already installed.

**Accessories**



Type	Adaptor for the addressing of safety interfaces	Infrared adaptor for adjustment terminal	Tap-off for AS-Interface cable	Cable for monitor parametering, RS 232	Cable for monitor to monitor transfer
Degree of protection	–	IP 67	IP 67	IP 20	IP 20
Cable length	–	1 m	2 m	2 m	0.2 m
References	ASISAD1	ASITERIR1	TCSATN01N2	ASISPCPC	ASISCM



Interface type	For mushroom head pushbuttons				Control stations	
	Metal	(1)	Plastic	(1)	Plastic	
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 65	IP 65
Dimensions W x D x H (mm)	40 x 90 x 68	40 x 80 x 40	40 x 90 x 64	40 x 90 x 40	66 x 95 x 78	66 x 95 x 78
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA	45 mA	45 mA	45 mA
Infrared addressing	Yes	No	Yes	No	No	No
Connection on AS-Interface	IDC (2)	Connector	IDC (2)	Connector	M12 connector	M12 connector
Reference with N/C + N/C contact (head not included)	<b>ASISSLB4</b>	<b>ASISSE4</b>	<b>ASISSLB5</b>	<b>ASISSE5</b>	<b>ASISEA1C</b>	<b>ASISEK1C</b>
Reference of head (Ø40 latching mushroom head, turn to release)	<b>ZB4BS844</b> (3)	<b>ZB4BS844</b> (3)	<b>ZB4AS844</b> (3)	<b>ZB5AS844</b> (3)	<b>Integrated</b> (4)	<b>Integrated</b> (5)

(1) For installation in enclosures.

(2) IDC: Insulation Displacement Connector.

(3) Head to be ordered separately. For other heads, please refer to [www.schneider-electric.com](http://www.schneider-electric.com).

(4) Turn to release latching mushroom head.

(5) Key release (n° 455) latching mushroom head.

### For other safety products with M12 connector outputs or ISO M16/20

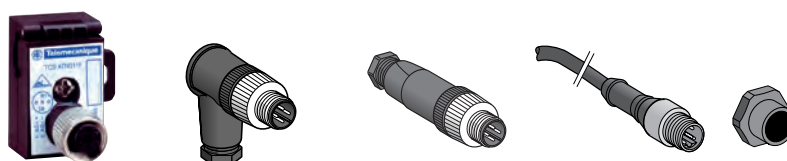


Type of entry	2 x M12 entries (6)	1 x M12 entry	1 x ISO M16 entry (7)
Degree of protection	IP 67	IP 67	IP 67
Dimensions W x D x H	40 x 40 x 58 mm	40 x 40 x 58 mm	40 x 40 x 57.5 mm
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA
Infrared addressing	Yes	Yes	Yes
Connection on AS-Interface	IDC (1)	IDC (1)	IDC (1)
References	<b>ASISSLC2</b>	<b>ASISSLC1</b>	<b>ASISLLS</b>

(6) For connection using 2 pre-wired connectors, or 1 pre-wired connector + 1 connector.

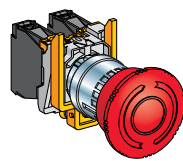
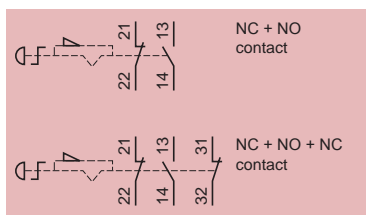
(7) For 1 x ISO M20 entry, use adaptor shown below.

### Accessories

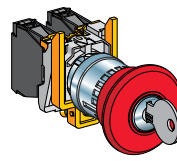


Type	Tap-off for AS-Interface cable	Connectors		Pre-wired connector	Adaptor (sold in lots of 5)
Description	M12 female, threaded	elbowed	straight	straight	ISO M16/M20
Degree of protection	IP 67	IP 67	IP 67	IP 67	IP 67
Length of cable	–	–	–	2 m	–
References	<b>TCSATN011F</b>	<b>XZCC12MCM40B</b>	<b>XZCC12MDM40B</b>	<b>XZCP1541L2</b>	<b>DE9RI2016</b>

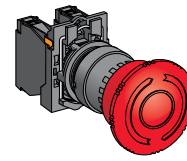




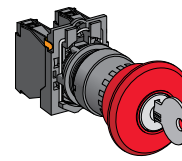
Turn to release



Key release  
(key n° 455)



Turn to release

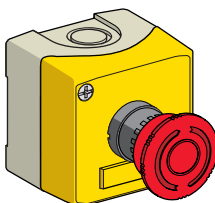
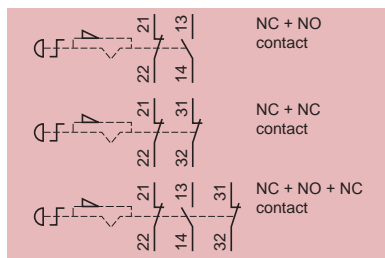


Key release  
(key n° 455)

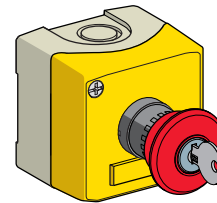
Pushbuttons	Metal		Plastic	
Mechanical life (millions of operating cycles)	0.3		0.3	
Shock / vibration resistance	10 gn / 5 gn		10 gn / 5 gn	
Degree of protection	IP 65		IP 65	
Rated operational characteristics	AC 15, A 600 / DC 13, Q 600 (conforming to EN IEC 60947-5-1)			
Dimensions Ø x Depth	Ø 40 x 82 mm		Ø 40 x 104 mm	Ø 40 x 81.5 mm
Contact	NC + NO	<b>XB4BS8445</b>	<b>XB4BS9445</b>	<b>XB5AS8445</b>
	2 NC + 1 NO	<b>XB4BS84441</b>	<b>ZB4BS944+ZB4BZ141</b>	<b>ZB5AS844 + ZB5AZ141</b>
				<b>ZB5AS944+ZB5AZ141</b>



### Ø 22 trigger action latching pushbutton stations



Turn to release



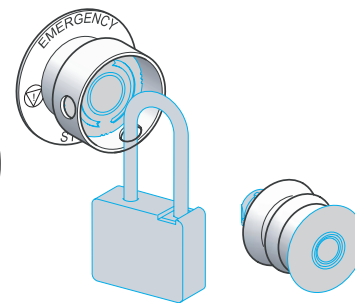
Key release (key n° 455)

Enclosure	Plastic	
	2 x ISO M20 cable entries or n° 13 (Pg 13.5) cable gland	
Mechanical life (millions of operating cycles)	0.1	0.1
Shock / vibration resistance	10 gn / 5 gn	10 gn / 5 gn
Degree of protection	IP 65	IP 65
Rated operational characteristics	AC 15, A 600 / DC 13, Q 600 (conforming to EN IEC 60947-5-1)	
Dimensions W x D x H	68 x 91 x 68 mm	68 x 113 x 68 mm
Contact	NC + NO	<b>XALK178EH7</b>
	NC + NC	<b>XALK178FH7</b>
	2 NC + 1 NO	-

### Accessories



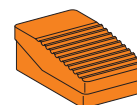
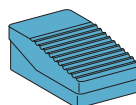
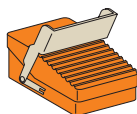
With legend holder



Type	Legend		Padlocking kit	Bellows seals	
Colour	Red with white lettering	Yellow with black lettering	Yellow	Red Silicone	Black EPDM
Dimensions	30 x 40 mm (1)	Ø 60 mm			
References	Marking: "Arrêt d'urgence"	<b>ZBY2130</b>	<b>ZBY9130</b>	-	-
	"Emergency stop"	<b>ZBY2330</b>	<b>ZBY9330</b>	-	-
	"Not Halt"	<b>ZBY2230</b>	<b>ZBY9230</b>	-	-
		-	<b>ZBZ3605</b>	<b>ZBZ48</b>	<b>ZBZ28</b>

(1) circular appearance

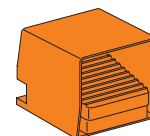
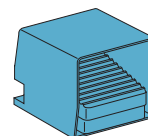
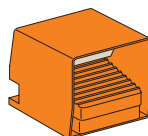
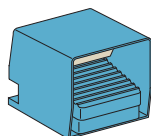
ISO entry  
(to EN 50262)



Type			Foot switches without protective cover		
CSA certified for references ending with H2 only			2 cable entries for n° 16 (Pg 16) cable gland (1)		
Trigger mechanism			With (positive operating action reqd.)	Without	
Colour			Orange	Blue	Orange
Mechanical life (millions of operating cycles)			15		
Degree of protection			IP 66		
Shock resistance			100 joules		
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to EN IEC 60947-5-1)		
Dimensions W x D x H			104 x 172 x 59 mm		
Contact operation	1 step	1 NC + NO	XPER810	XPEM110(2)	XPER110
		2 NC + NO	XPER811	XPEM111(2)	XPER111
Contact operation	2 step	2 NC + NO	XPER911	XPEM211(2)	XPER211
		Analogue output	2 NC + NO	XPER929	–

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620H2 (sold in lots of 5). (2) For 1/2" NPT adaptor add H2 to the reference.

ISO entry  
(to EN 50262)

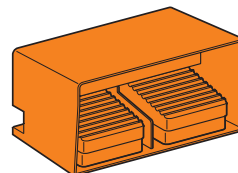
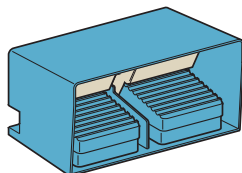


Type			Foot switches without protective cover				
CSA certified for references ending with H2 only			2 cable entries for n° 16 (Pg 16) cable gland (1)				
Trigger mechanism			With (positive operating action reqd.)	Without			
Colour			Blue	Orange	Blue	Orange	
Mechanical life (millions of operating cycles)			15				
Degree of protection			IP 66				
Shock resistance			100 joules				
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to EN IEC 60947-5-1)				
Dimensions W x D x H			160 x 186 x 152 mm				
Contact operation	1 step	1 NC + NO	XPEM510(2)	XPER510	XPEM310	XPER310	
		2 NC + NO	XPEM511(2)	XPER511	XPEM311	XPER311	
Contact operation	1 step latching	1 NC + NO	–	–	XPEM410(2)	XPER410	
		2 NC + NO	XPEM711	XPER711	XPEM611	XPER611	
Contact operation	Analogue output	2 NC + NO	XPEM529	XPER529	XPEM329	–	

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620H2 (sold in lots of 5). (2) For 1/2" NPT adaptor add H2 to the reference.

**Double pedal switches**

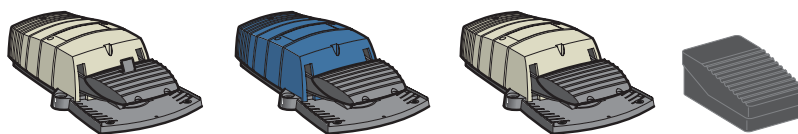
ISO entry  
(to EN 50262)



Type			Foot switches without protective cover				
CSA certified for references ending with H2 only,			2 cable entries for n° 16 (Pg 16) cable gland (1)				
Trigger mechanism			With (positive operating action reqd.)	Without			
Colour			Blue	Orange	Blue	Orange	
Mechanical life (millions of operating cycles)			15				
Degree of protection			IP 66				
Shock resistance			100 joules				
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to EN IEC 60947-5-1)				
Dimensions W x D x H			295 x 190 x 155 mm				
Contact operation	1 step	2 x 1 NC + NO	XPEM5100D	XPER510D	XPEM3100D	XPER3100D	
		2 x 2 NC + NO	XPEM5110D	XPER5110D	XPEM3110D	XPER3110D	

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).

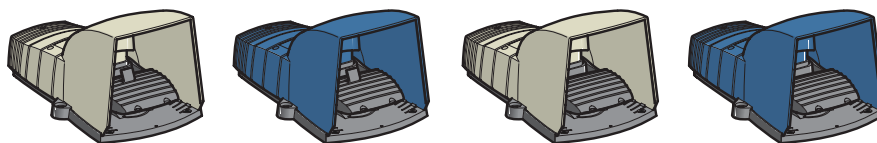
ISO entry  
(to EN 50262)



Type		Foot switches without protective cover				
		2 cable entries for ISO M20 cable gland			1 entry (1)	
Trigger mechanism		With (positive operating action reqd.)	Without		Without	
Colour		Grey+	Blue	Grey	Black	
Mechanical life (millions of operating cycles)		10			2	
Degree of protection		IP 66			IP 43	
Shock resistance		100 joules				
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to EN IEC 60947-5-1)				
Dimensions W x D x H		160 x 280 x 70 mm			94 x 161 x 54 mm	
Contact operation	1 step	1 NC + NO	XPEG810	XPEB110	XPEG110	XPEA110
		2 NC + NO	–	XPEB111	XPEG111	XPEA111
	2 step	2 NC + NO	XPEG911	XPEB211	XPEG211	–

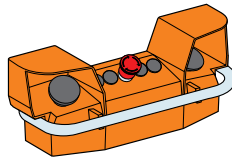
(1) Cable entry for ISO M16 or n° 9 (Pg 9) cable gland and for ISO M20 or n° 13 (Pg 13.5) cable gland.

ISO entry  
(to EN 50262)



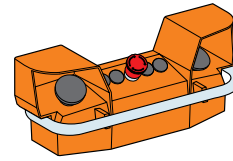
Type		Foot switches with protective cover				
		2 cable entries for ISO M20 cable gland				
Trigger mechanism		With (positive operating action reqd.)		Without		
Colour		Grey	Blue	Grey	Blue	
Mechanical life (millions of operating cycles)		10				
Degree of protection		IP 66				
Shock resistance		100 joules				
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to EN IEC 60947-5-1)				
Dimensions W x D x H		180 x 280 x 162 mm				
Contact operation	1 step	1 NC + NO	XPEG510	XPEB510	XPEG310	XPEB310
		2 NC + NO	XPEG511	XPEB511	XPEG311	XPEB311
	2 step	2 NC + NO	XPEG711	XPEB711	XPEG611	XPEB611

ISO entry  
(to EN 50262)



Not  
CSA

2 control pushbuttons and 1 mushroom head  
Emergency stop or Lock out pushbutton



2 control pushbuttons and 1 mushroom head  
Emergency stop or Lock out pushbutton, with pre-wired terminal block

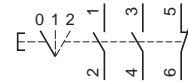
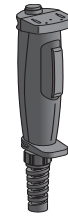
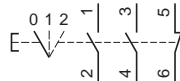
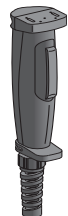
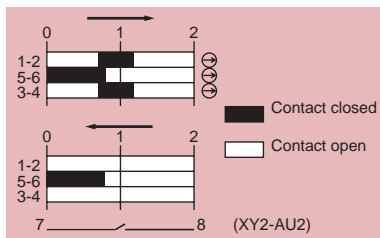
Type	Two-hand control stations	
	2 cable entries for ISO M20 or n° 13 (Pg 13.5) cable gland, 1 cable entry for n° 21 (Pg 21) cable gland (2)	
Mechanical life (millions of operating cycles)	1	1
Degree of protection	IP 65	IP 65
Rated operational characteristics	AC 15, A 600 / DC 13, Q 600 (conforming to EN IEC 60947-5-1)	
Dimensions W x D x H	455 x 170 x 188.5 mm	
Red emergency stop (NC + NC slow break)	XY2SB71 (1)	XY2SB72 (1)
Yellow lock out (NC + NO break before make)	XY2SB75	XY2SB76

(1) To order a two-hand control station with pedestal XY2SB90, add 4 to the end of the reference (example: XY2SB71 becomes XY2SB714).

(2) For entry for ISO M25 cable gland, also order adaptor DE9RA2125 + fixing nut DE9EC21 (sold in lots of 5).

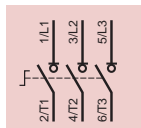
### Enabling switch

#### Contact states



Type	Plastic grip	
	Entry for Ø 7 to 13 mm cable	
Number of contacts	3	3
Type of contacts	2 NO + 1 NC	2 NO + 1 NC 1 NO auxiliary
Description	3 positions	3 positions with button for NO contact (auxiliary)
Shock / vibration resistance	10 gn / 6 gn	
Degree of protection	IP 66	IP 65
Rated operational characteristics	AC 15, C300 / DC 13, R300 (conforming to EN IEC 60947-5-1)	
Dimensions W x D x H	46 x 58 x 261 mm	46 x 58 x 269 mm
References	XY2AU1	XY2AU2

For fixing accessories, please refer to [www.schneider-electric.com](http://www.schneider-electric.com).



Varlo Switch Kits									Door Mount				Rear Mount with Extension Shaft		Switch & Handle DIN Rail mount	
Type																
Color									red/yellow	red/yellow	black/grey	black/grey	red/yellow	red/yellow	red/yellow	
Front plate dimensions (mm)									60 x 60	90 x 90	60 x 60	90 x 90	90 x 90	60 x 60	-	
Mounting									1 Hole	4 Hole	1 Hole	4 Hole	4 Hole	1 Hole	DIN Rail	
Degree of protection									IP20	IP20	IP20	IP20	IP20	IP20	-	
Amps		1 Phase, HP rating		3 Phase, HP rating												
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V									
10	12	1	2	2	2	5	5	VCD02	VCF02	VBD02	VBF02	VCCF02	VCCD02	-		
16	20	1.5	3	3	3	7.5	7.5	VCD01	VCF01	VBD01	VBF01	VCCF01	VCCD01	-		
20	25	2	3	5	5	10	10	VCD0	VCF0	VBD0	VBF0	VCCF0	VCCD0	VVE0		
20	32	2	3	5	5	10	10	VCD1	VCF1	VBD1	VBF1	VCCF1	VCCD1	VVE1		
25	40	2	3	5	5	10	15	VCD2	VCF2	VBD2	VBF2	VCCF2	VCCD2	VVE2		
45	63	5	7.5	7.5	10	20	30	VCF3		VBF3		VCCF3		VVE3		
63	80	7.5	10	10	15	30	40	VCF4		VBF4		VCCF4		VVE4		
100	125	15	20	20	25	50	50	VCF5		VBF5		VCCF5				
110	175	15	25	25	30	50	60	VCF6		VBF6		VCCF6				

Enclosed Varlo Switch														
Amps		1 Phase, HP rating		3 Phase, HP rating				Non Metallic		Metallic				
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V	Type 1 / 12		Type 1		Type 12		Type 4 / 4X (indoor use only)
20	32	2	3	5	5	10	10	VC1GU		9421V1G30		9421V1A30		9421V1W30
25	40	2	3	5	5	10	15	VC2GU		9421V2G30		9421V2A30		9421V2W30
45	63	5	7.5	7.5	10	20	30	VC3GU						
63	80	7.5	10	10	15	30	40	VC4GU						
100	125	15	20	20	25	50	50	VC5GU						
110	175	15	25	25	30	50	60	VC6GU						

Varlo Switch													
Amps		1 Phase, HP rating		3 Phase, HP rating				Shaft Size	3 Pole		Add-On Power Pole		
UL/ CSA	IEC	120V	200V	208V	240V	480V	600V						
10	12	1	2	2	2	5	5	6mm	V02		VZ02		
16	20	1.5	3	3	3	7.5	7.5	6mm	V01		VZ01		
20	25	2	3	5	5	10	10	6mm	V0		VZ0		
20	32	2	3	5	5	10	10	6mm	V1		VZ1		
25	40	2	3	5	5	10	15	6mm	V2		VZ2		
45	63	5	7.5	7.5	10	20	30	6mm	V3		VZ3		
63	80	7.5	10	10	15	30	40	6mm	V4		VZ4		
100	125	15	20	20	25	50	50	6mm	V5		-		
110	175	15	25	25	30	50	60	6mm	V6		-		

Varlo Switch Accessories		
Auxiliary Contacts (10A)		
1 N.O. / 1 N.C. (early make, late break0)		VZ7
2 N.O.		VZ20

Handle																	
Mounting		Single Hole				Four Hole											
Color		red yellow		black/grey		red/yellow			black/grey								
Front Plate Dimensions (mm)		45x45 mm		60x60 mm		45x45mm		60x60mm		90x90mm		45x45mm		60x60mm		90x90mm	
Padlockable for base switch		V02 to V2		KCC1YZ		KCD1PZ		KAD1PZ		KCE1YZ		KCF1PZ		KCF2PZ		KAF1PZ	
		V3 to V4														KAF2PZ	
		V5 to V6										KCF3PZ				KAF3PZ	
Non-Padlockable for base switch		V02 to V2		KCC1LZ		KDD1PZ		KAC1BZ		KBD1PZ		KCE1LZ		KDF1PZ		KAE1BZ	
		V3 to V4												KDF2PZ		KBF1PZ	
		V5 to V6										KDF3PZ				KBF2PZ	
																KBF3PZ	

Shaft Kits & Plates				
Base Switch	Maximum Panel Depth	Shaft Kit	Door Interlock Plate	Door Mounting Plate
V02 to V2	330mm	VZ17	KZ32	KZ83
	429mm	VZ30	KZ32	KZ83
V03 to V4	320mm	VZ18	KZ74	KZ81
	419mm	VZ30	KZ74	KZ81
V05 to V6	351mm	VZ18	KZ74	KZ81
	450mm	VZ31	KZ74	KZ81



The GV range of products are 3-pole, horsepower rated, CSA22.2 no. 14 and UL 508 listed, manual motor starters. They include a manual disconnect, class 10 ambient-compensated thermal overload relay, and an instantaneous magnetic trip mechanism in one compact unit. Any GV manual starter can be used alone for local manual control of a motor up to 220A.

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 600 V max	Rotary Handle 600 V (Type E 480 V max)
-	-	-	-	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	0.63-1	13	GV2ME05	GV2P05
-	-	0.75	0.75	1-1.6	22.5	GV2ME06	GV2P06
0.5	0.5	1	1.5	1.6-2.5	33.5	GV2ME07	GV2P07
0.75	0.75	2	3	2.5-4	51	GV2ME08	GV2P08
1	1.5	3	5	4-6.3	78	GV2ME10	GV2P10
2	3	5	7.5	3-10	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
7.5	7.5	15	20	20-25	327	GV2ME22	GV2P22
7.5	10	20	25	24-32	416	GV2ME32	GV2P32 (group motor installation only)

For common add on blocks and accessories for GV2/GV3 please see page 8/19.

The GV range may be used in group motor installations per CEC and NEC. Group motor applications do not require Type E devices but Type E devices can be used in Group applications if desired.

**Manual motor starters**  
**1 to 50HP**  
**with EverLink terminal blocks**



Thermal-magnetic circuit-breakers GV3-P for connection by EverLink terminal blocks (2)							
Control by rotary knob							
Horsepower ratings of 3-phase motors 50/60 Hz						Setting range	Catalog Number
1ph		3ph				Thermal trips (A)	Type E 600V max
115V	230V	200V	230V	460V	575V		
1	2	3	3	7.5	10	9...13	GV3P13
1	3	5	5	10	15	12...18	GV3P18
2	3	7.5	7.5	15	20	17...25	GV3P25
2	5	10	10	20	30	23...32	GV3P32
3	5	10	10	30	30	30...40	GV3P40
3	7.5	15	15	40	40	37...50	GV3P50
5	10	20	20	50	50	48...65	GV3P65

(2) BTR screw of 4 mm

**GV3 add-on blocks and accessories**

Add-on blocks (front)	Fault signalling contact + instantaneous auxiliary contact	
Contact type	N/O (fault) + N/C	N/O (fault) + N/O
Catalog number	GV-AED011	GV-AED101

Accessories						
Type	for contactor for lug type terminals	IP20 cover for lug type terminals	Set of 3-pole 115 A busbars	2-pole busbars	"Wide spacing" UL 508 type E cover	Side by side mounting busbars
Catalog number	LAD96575	LAD96570	GV3G364	GV36264	GV3G66	GV3S

(3) Common add-on blocks and accessories GV2 / GV3, see page 8/19

(4) For spring terminal version add 3 to the end of the reference. Example GV-AED011 becomes GV-AED0113



<b>Accessories GV2</b>						
<b>Combination block</b>						
For mounting on		LC1-K or LP1-K <b>GV2-AF01</b>	LC1-D09...D38 <b>GV2-AF3</b>	LAD-31 and LC1-D09...D38 <b>GV2-AF4</b>		
<b>Sets of 3-pole busbars</b>						
63 A	Pitch	45 mm	54 mm	72 mm		
Number of tap-offs	2	<b>GV2-G245</b>	<b>GV2-G254</b>	<b>GV2-G272</b>		
	3	<b>GV2-G345</b>	<b>GV2-G354</b>			
	4	<b>GV2-G445</b>	<b>GV2-G454</b>	<b>GV2-G472</b>		
	5		<b>GV2-G554</b>			
<b>Protective end cover</b>						
For unused busbar outlets		<b>GV1-G10</b>				
<b>Terminal blocks</b>						
For supply to one or more GV2-G busbar sets		connection from the top <b>GV1-G09</b>	can be fitted with current limiter GV1-L3 (GV2-ME and GV2-P) <b>GV1-G05</b>			
<b>Padlockable external operator for GV2 and GV3 (150 to 290 mm)</b>						
Padlocking		In "On" and "Off" position	In "Off" position			
Handle		black	red			
Legend plate		blue	yellow			
IP 54	For GV2-ME/P/L	<b>GV2-AP01</b>	<b>GV2-AP02</b>			
	For GV3-P	<b>GV3-AP01</b>	<b>GV3-AP02</b>			
<b>TeSys rotating handles for</b>		<b>GV2-P</b>	<b>GV3-P</b>			
Kit IP54 black handle		<b>GV2APN01</b>	<b>GV3APN01</b>			
IP54 kid red/yellow handle		<b>GV2APN02</b>	<b>GV3APN02</b>			
IP65 kit red/yellow handle		<b>GV2APN04</b>	<b>GV3APN04</b>			
<b>Line Insulator</b>						
For GV2-P Type UL508E (not required by CSA)		<b>GV2-GH7</b>				
For GV3-P Type UL508E (not required by CSA)		<b>GV3-G66</b>				
<b>Add-on blocks common to GV2 / GV3</b>						
<b>Contact blocks</b>						
Contact types		N/O or N/C	N/O + N/C	N/O + N/O	(fault) + N/C	(fault) + N/O
<b>Instantaneous auxiliary contacts</b>						C/O common point
Mounting	front	<b>GV-AE1</b>	<b>GV-AE11</b>	<b>GV-AE20</b>		
	LH side		<b>GV-AN11</b>	<b>GV-AN20</b>		
<b>Fault signalling contact + instantaneous auxiliary contact</b>						
LH side	"F" fault				<b>GV-AD1001</b>	<b>GV-AD1010</b>
	"O" fault				<b>GV-AD0101</b>	<b>GV-AD0110</b>
<b>Short-circuit signalling contact</b>						
LH side						<b>GV-AM11</b>
<b>Electric trips</b>						
<b>Undervoltage or shunt trips</b> (Replace • in catalog number with "S" for Shunt trip or "U" for Undervoltage trip )						
Side mounting (1 block on RH side of circuit-breaker)		50 Hz		60 Hz		
Voltage	24 V	<b>GV-A•025</b>		<b>GV-A•026</b>		
	110...115 V	<b>GV-A•115</b>		<b>GV-A•116</b>		
	120...127 V	<b>GV-A 125</b>				
	200...220 V			<b>GV-A•207</b>		
	220...240 V	<b>GV-A•225</b>		<b>GV-A•226</b>		
	380...400 V	<b>GV-A•385</b>		<b>GV-A•386</b>		
	480 V			<b>GV-A•415</b>		
600 V			<b>GV-A•505</b>			
<b>Padlocking device</b>						
For use with up to 4 padlocks (padlocks not supplied) Ø 6 mm shank max		<b>GV2-V03</b>				

# Schneider Electric Canada, Inc.

## Corporate office

### HEAD OFFICE:

5985 McLaughlin Rd  
Mississauga, Ontario L5R 1B8  
Telephone: (905) 366-3999  
Customer Care  
Telephone: 1-800-565-6699  
Fax: 1-859-334-9915

## Sales offices

**CALGARY & Services Center**  
Bay 288 - 2880 - 45th Avenue, SE  
Calgary, Alberta T2B 3M1  
Telephone: (403) 214-3130  
Fax: (859) 334-9902

### REGINA

86 Deerfoot Trail  
Deer Valley, Saskatchewan S2V 1B8  
Telephone: (306) 791-8860  
Fax: (306) 731-2258

### EDMONTON & Services Center

12825 - 144th Street  
Bonaventure Industrial Park  
Edmonton, Alberta T5L 4N7  
Telephone: (780) 453-3561  
Fax: (859) 334-9909

### RICHMOND

22171 Fraserwood Way  
Richmond, British Columbia V6W 1J5  
Telephone: (604) 273-3711  
Fax: (859) 334-9930

### SASKATOON

2301 - I Millar Avenue  
Saskatoon, Saskatchewan S7K 2Y1  
Telephone: (306) 242-4046  
Fax: (859) 334-9933

### WINNIPEG

21 Omands Creek Blvd  
Winnipeg, Manitoba R2R 2V2  
Telephone: (204) 488-2305  
Fax: (859) 334-9957

### TRENTON

98 Parks Drive, Unit#2  
Belleville, Ontario K8N 4Z5  
Telephone: (613) 969-0666  
Fax: (859) 334-9926

### CAMBRIDGE

150 Pinebush Rd., Unit#6  
Cambridge, Ontario N1R 8J8  
Telephone: (519) 621-5756  
Fax: (859) 334-9904

### LONDON

4500 Blakie Road Unit 105  
London, Ontario N6L 1G5  
Telephone: (519) 652-0866  
Fax: (859) 334-9911

### MISSISSAUGA

Central Region Sales  
5985 McLaughlin Rd  
Mississauga, Ontario L5R 1B8  
Telephone: (905) 366-3999  
Fax: (859) 334-9919

### OTTAWA

850 Industrial Avenue, Unit 6  
Ottawa, Ontario K1G 4K2  
Telephone: (613) 247-7171  
Fax: (859) 334-9926

### STONEY CREEK

903 Barton St. East, Unit#18  
Stoney Creek, Ontario L8E 5P5  
Telephone: (905) 643-4707  
Fax: (859) 334-9939

### SUDBURY & Services Center

868 Falconbridge Rd., Unit 15  
Sudbury, Ontario P3A 5K7  
Telephone: (705) 560-9516  
Fax: (859) 344-9940

### WINDSOR & Services Center

2825 Lauzon Parkway  
Windsor, Ontario N8T 3H5  
Telephone: (519) 974-0900  
Fax: (859) 334-9956

### SAGUENAY-LAC ST. JEAN

1700 boul. St-Paul Suite 100  
Chicoutimi, Quebec G7J 4N1  
Telephone: (418) 549-5544  
Fax: (418) 549-1901

### HALIFAX

110 Chain Lake Drive, Unit 3-G  
Halifax, Nova Scotia B3S 1A9  
Telephone: (902) 450-0360  
Fax: (859) 334-9910

### MONCTON & Services Center

535 Edinburgh Drive, Unit 5  
Moncton, New Brunswick E1E 4E3  
Telephone: (506) 857-0719  
Fax: (859) 334-9925

### MONTREAL & Services Center

825, rue Bancroft  
Pointe-Claire, Quebec H9R 4L6  
Telephone: (514) 697-4790  
Fax: (859) 334-9927

### QUEBEC CITY & Services Center

355, Marais Bureau Unit 185  
Quebec City, Quebec G1M 3N8  
Telephone: (418) 688-9500  
Fax: (859) 334-9955

### SHERBROOKE

St-Elie d'Orford, Quebec J0B 2S0  
Telephone: (819) 822-3676  
Fax: (819) 822-8977

### Val D'Or Sales

2866, ch. Sullivan  
Val d'Or, Quebec J9P 4P3  
Telephone: (819) 825-9211  
Fax: (819) 825-9220

## Services Centres

### REGINA

30 Weist Bay  
Balgonie, Saskatchewan S0G 0E0  
Telephone: (306) 791-8860  
Fax: (306) 668-6828

### RICHMOND

22171 Fraserwood Way  
Richmond, British Columbia  
V6W 1J5  
Telephone: (604) 273-3531  
Fax: (859) 334-9932

### SASKATOON

2301 - I Millar Avenue  
Saskatoon, Saskatchewan S7K 2Y1  
Telephone: (306) 668-5588  
Fax: (859) 334-9933

### VICTORIA

460 Tennyson Place  
Victoria, British Columbia V8Z 6S8  
Telephone: (250) 704-1177  
Fax: (250) 704-1187

### WINNIPEG

21 Omands Creek Blvd  
Winnipeg, Manitoba R2R 2V2  
Telephone: (204) 488-2548  
Fax: (859) 334-9958

### BELLEVILLE

98 Parks Drive, Unit#2  
Belleville, Ontario K8N 4Z5  
Telephone: (613) 969-0666  
Fax: (859) 334-9926

### CAMBRIDGE

150 Pinebush Rd., Unit#6  
Cambridge, Ontario N1R 8J8  
Telephone: (519) 621-5756  
Fax: (859) 334-9905

### LONDON

4500 Blakie Road Unit 105  
London, Ontario N6L 1G5  
Telephone: (519) 652-0866  
Fax: (859) 334-9911

### MISSISSAUGA

Central Region Sales  
5985 McLaughlin Rd  
Mississauga, Ontario, L5R 1B8  
Telephone: (905) 366-3999

### OTTAWA

850 Industrial Avenue, Unit 6  
Ottawa, Ontario K1G 4K2  
Telephone: (613) 247-7171  
Fax: (859) 344-9926

### CHICOUTIMI

1700 Boulevard St.Paul, Bureau 100  
Chicoutimi, Quebec G7J 4N1  
Telephone: (418) 549-5544  
Fax: (418) 549-1901

### HALIFAX

110 Chain Lake Drive, Unit 3-G  
Halifax, Nova Scotia B3S 1A9  
Telephone: (902) 450-0360  
Fax: (859) 334-9910

### Val D'Or

2866 Chemin Sullivan  
Val D'Or, Quebec J9P 4P4  
Telephone: 819 925 9211  
Fax: 819 825 9220

## Manufacturing Plants:

### 4 Manufacturing Plants across Canada to serve you.

#### EDMONTON

12825 - 144th Street  
Bonaventure Industrial Park  
Edmonton, Alberta T5L 4NL  
Telephone: (780) 453-3561  
Fax: (859) 334-9909

#### La Prairie

1400, rue Industrielle, Suite 200  
La Prairie, Quebec J5R 2E5 - Canada  
Telephone: (450) 724-6343  
Fax MVC: (450) 659-4020  
Fax PCT: (450) 659-8900

#### RICHMOND

Richmond Customer Solution Centre  
(RSCS)  
22171 Fraserwood Way  
Richmond, British Columbia  
V6W 1J5

#### Brossard

4200 Place de Java  
Brossard, Quebec J4Y 0C4  
Telephone: (450) 444-0143  
Fax: (859) 334-9938



## CCC - Customer Care Centre

The Schneider Electric "Customer Care Centre" (CCC) is a single point of contact where qualified personnel answer your customer service and technical support questions.

**Hours:** Monday - Friday 8:00 a.m. - 7:00 p.m. EST

**Email:** [canadian.pss@ca.schneider-electric.com](mailto:canadian.pss@ca.schneider-electric.com)

**Telephone:** 1-800-565-6699

## Schneider Electric Canada Field Services

Field services located in all major centers across Canada

Engineering Services

Start-up and Commissioning

Product Life Cycle Management

Emergency

**Hours:** 24 hours

**Telephone:** 1-800-265-3374

# Your business deserves our integrated solutions

To improve their efficiency, an increasing number of organisations focus on their core business and rely on preferred partner for some of their main concerns: Energy is definitely one of those.

Schneider Electric has unique positions to provide you with innovative integrated solutions making energy safer, more reliable, more efficient and more productive.

Combining leading edge new businesses - building automation and security, installation systems and control, power monitoring and control, critical power and cooling services - to our historical strengths of power and control, we provide you with comprehensive unique answers for residential, building, energy and infrastructure and data and networks markets.

We have developed a unique worldwide capability to provide these solutions and transform the way people power & control their environment.

Our solutions help customers reduce costs, stay connected at all times and tap into an ultra pure, secure and uninterrupted power supply.

For you we make the energy:

### Safe

- > Protecting people and assets...

### Reliable

- > Ultra secured power for critical applications

### Efficient

- > Energy efficiency solutions
- > Open and integrated systems for optimised Capex and Opex

### Productive

- > Automation everywhere
- > Connectivity everywhere
- > Services at every phase of the lifecycle

# All our solutions are safe, simple, efficient and innovative.

**Schneider Electric Canada, Inc.**

5985 McLaughlin Road  
Mississauga, ON L5R 1B8  
Tel: 1-800-565-6699  
[www.schneider-electric.com](http://www.schneider-electric.com)

Document Number DIA1ED2040506EN\_CA\_R0



*This document has been  
printed on recycled paper*

October 2012 sw