Preventa safety configurable controllers
XPSMC

Catalogue

January 2015

Schneider Electric
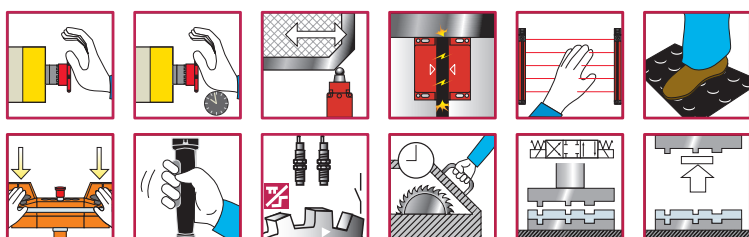
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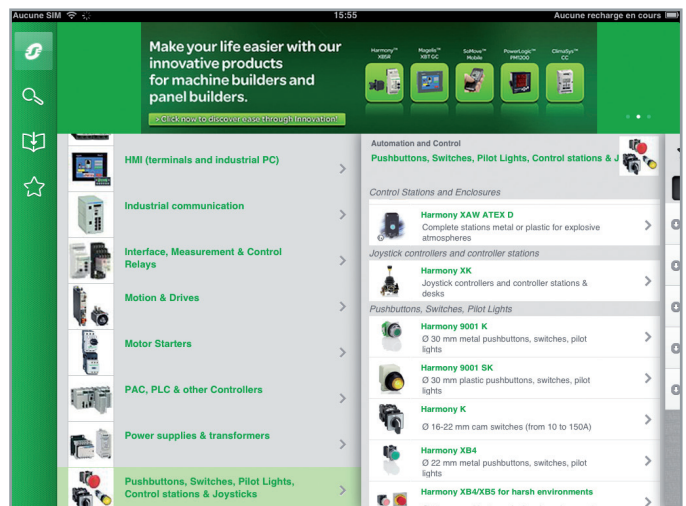
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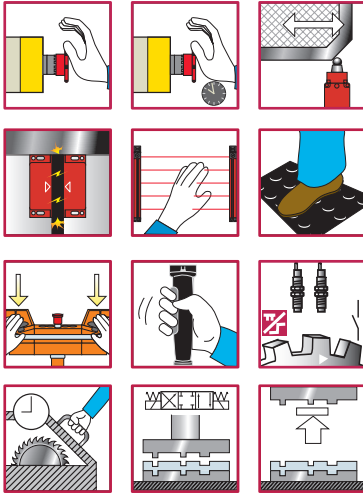> Go to the Google Play Store™ and search for eLibrary
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General contents

Preventa configurable safety controllers Type XPSMC

Preventa configurable safety controllers
Type XPSMC

Presentation

Configurable safety controllers **XPSMC●●Z●** are designed to provide a solution for safety applications requiring conformity to Performance Level PL e/Category 4 EN/ISO 13849-1 and SIL 3 EN/IEC 61508.

The range of configurable safety controllers comprises 6 products, each with different technical characteristics.

Configurable controllers	Safety inputs	Safety outputs (1)	Communication via		
			CANopen bus	Profibus bus	Modbus serial link
XPSMC16Z	16	6 + 2 x 2	–	–	Yes, slave
XPSMC16ZC	16	6 + 2 x 2	Yes, slave	–	Yes, slave
XPSMC16ZP	16	6 + 2 x 2	–	Yes, slave	Yes, slave
XPSMC32Z	32	6 + 2 x 2	–	–	Yes, slave
XPSMC32ZC	32	6 + 2 x 2	Yes, slave	–	Yes, slave
XPSMC32ZP	32	6 + 2 x 2	–	Yes, slave	Yes, slave

Line control

The safety inputs are supplied by the various control outputs *(2)*, in such a manner so as to monitor for short-circuits between the inputs, short-circuits between each input and earth or the presence of residual voltages.

The controller, assisted by the control outputs, continuously tests all the connected inputs. As soon as an error is detected on an input, all the outputs associated with this input are disconnected. Safety outputs associated with other inputs remain active.

Configuration

Safety controllers **XPSMC●●Z●** are configurable and addressable using software **XPSMCWIN** running on a PC. Connection accessories required: see page 5.

Connections

For connection of safety inputs and outputs, safety controllers **XPSMC●●Z●** can be fitted with a choice of:
□ screw connectors type **XPSMCTS●●**, or
□ spring clip connectors type **XPSMCTC●●**.
These connectors are to be ordered separately, see page 5.

Safety functions

Configuration of the safety functions is carried out using software **XPSMCWIN** which is available on the Safety Suite V2 CD-ROM.
30 certified safety functions are available with this software and they are easily assignable to the safety outputs. The safety functions have multiple combination possibilities and various starting conditions.
The safety functions are:
□ certified in accordance with EN/ISO 13849-1 and IEC 61508,
□ configurable in controller XPSMC using software **XPSMCWIN** which is available on the Safety Suite V2 software pack.
All 8 safety outputs are suitable for use in safety related parts of control systems conforming to Performance Level PL e/Category 4 in accordance to EN/ISO 13849-1.

Main safety functions

■ Emergency stop monitoring, with or without time delay, 1 or 2-channel wiring
■ Two-hand control (type III- A and C conforming to EN 574/ISO 13851)
■ Guard monitoring with 1 or 2 limit switches
■ Guard monitoring for injection presses and blowing machines
■ Magnetic switch monitoring
■ Sensing mat monitoring
■ Light curtain (type 4 conforming to EN/IEC 61496, relay or solid-state output) monitoring
■ Zero speed detection
■ Dynamic monitoring of hydraulic valves on linear presses
■ Monitoring safety stop at top dead centre on eccentric press
■ Safety time delays
■ "Muting" function of light curtains
■ Enabling switch monitoring, 2 or 3 contact
■ Hydraulic press
■ Eccentric press
■ Foot switch monitoring
■ Chain shaft breakage monitoring
■ Position selector

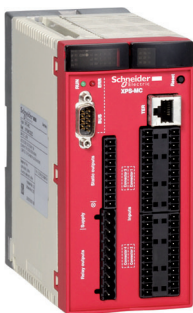### Application schemes and functional diagrams

See instruction sheet on www.schneider-electric.com

(1) 8 independent safety outputs = 6 solid-state safety outputs + 2 x 2 relay outputs (4 relay outputs with mechanically linked contacts).
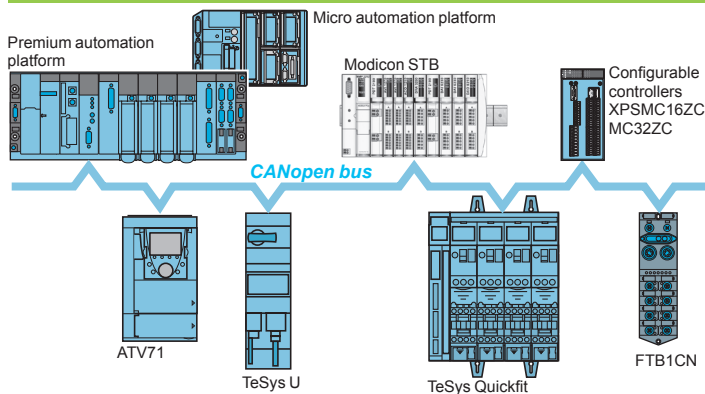*(2) 8 control outputs are available but they are not safety outputs.*
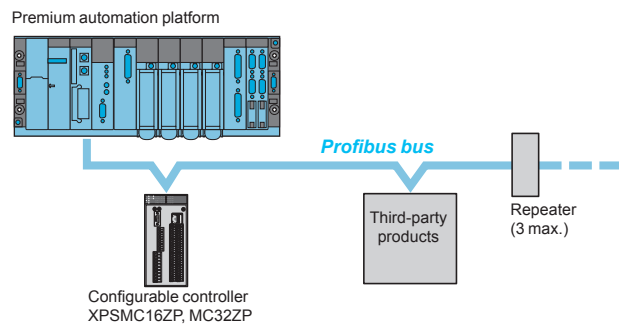

XPSMC16ZC

XPSMC32ZC

Schneider Electric

Communication

Premium automation platform

Micro automation platform

Modicon STB

Configurable controllers XPSMC16ZC, MC32ZC

CANopen bus

ATV71

TeSys U

TeSys Quickfit

FTB1CN

CANopen fieldbus

Configurable safety controllers **XPSMC●●ZC** incorporate a SUB-D 9-pin male connector for direct connection on CANopen bus.
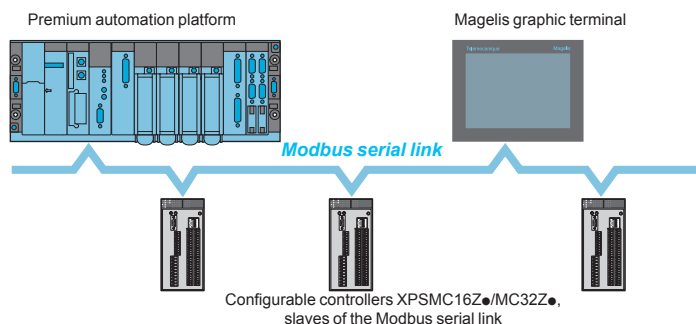
CANopen bus is a open bus that ensures deterministic and reliable access to the real-time data of automation equipment. The bus uses a shielded dual twisted pair on which a maximum of 127 devices can be connected by chaining.
The baud rate varies between 10 Kbps and 1Mbps depending on the length of the bus (5000 m/*16404.15 ft* to 20 m/*65.62 ft*).

Premium automation platform

Profibus bus

Third-party products

Repeater (3 max.)

Configurable controller
XPSMC16ZP, MC32ZP

Profibus bus

Configurable safety controllers **XPSMC●●ZP** incorporate a SUB-D 9-pin male connector for connection on Profibus bus. Configurable safety controllers **XPSMC●●ZP** are slaves on the Profibus bus.

Profibus bus is a fieldbus that meets industrial communication requirements. The topology of the Profibus bus is of the linear type with a centralised master/slave type access procedure. The physical link is a single shielded twisted pair.

Premium automation platform

Magelis graphic terminal

Modbus serial link

Configurable controllers XPSMC16Z●/MC32Z●, slaves of the Modbus serial link

Modbus serial link

Configurable safety controllers **XPSMC●●Z●** incorporate a Modbus communication interface (RJ45 connector) for configuration and diagnostics.
This interface enables connection of the controllers to:
□ a PC (configuration),
□ a PLC (diagnostics), or
□ an operator dialogue terminal (diagnostics).

The Modbus serial link comprises a master station (Premium automation platform) and slave stations (configurable controllers **XPSMC16/32Z●**).
Two exchange mechanisms are possible:
■ **Question/response**: the questions from the master are addressed to a given slave. The response is expected by return from the interrogated slave.
■ **Distribution**: the master distributes a message to all the stations of the Modbus serial link. The latter execute the order without transmitting a reply.

Description
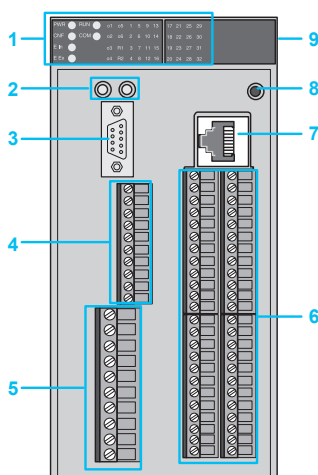
Configurable safety controller XPSMC●●Z●, with screw connectors
Front face
1 LED display and system diagnostics.
2 Two LEDs for CANopen or Profibus *(1)* connection status.
3 SUB-D 9-pin male connector for connection on CANopen bus (**XPSMC16ZC/MC32ZC**) or SUB-D 9-pin female connector for connection on Profibus bus (**XPSMC16ZP/MC32ZP**).
4 Solid-state safety output and "muting" indicator light terminals.
5 Power supply (24 V ⎓) and relay safety output terminals.
6 Control output terminals for power supply to safety inputs and safety input terminals.
7 RJ45 connector for connection on Modbus serial link.
8 RESET button (resetting of controller).

Rear face:
9 Fixing plate for mounting on rail.

(1) Depending on controller model.
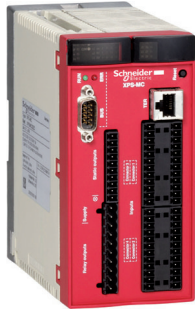
Preventa configurable safety controllers
Type XPSMC

XPSMC16Z

XPSMC32Z

XPSMC16ZC

XPSMC32ZC

XPSMC16ZP

XPSMC32ZP

References

Configurable safety controllers (connector not included)

Number of inputs	Number of outputs		Communication (Link and bus)	Reference	Weight kg/ lb
	Relay	Solid-state			
16	4 (2 x 2)	6	Modbus	**XPSMC16Z**	0.820/ 1.808
			Modbus, CANopen	**XPSMC16ZC**	0.820/ 1.808
			Modbus, Profibus	**XPSMC16ZP**	0.820/ 1.808
32	4 (2 x 2)	6	Modbus	**XPSMC32Z**	0.840/ 1.852
			Modbus, CANopen	**XPSMC32ZC**	0.840/ 1.852
			Modbus, Profibus	**XPSMC32ZP**	0.840/ 1.852

Plug-in connectors for configurable safety controllers (1)

Description	For use with	Reference	Weight kg/ lb
Screw connectors	XPSMC16Z, MC16ZC, MC16ZP	**XPSMCTS16**	0.080/ 0.176
	XPSMC32Z, MC32ZC, MC32ZP	**XPSMCTS32**	0.110/ 0.243
Spring clip connectors	XPSMC16Z, MC16ZC, MC16ZP	**XPSMCTC16**	0.080/ 0.176
	XPSMC32Z, MC32ZC, MC32ZP	**XPSMCTC32**	0.110/ 0.243

Configuration software

■ Reference XPSMCWIN is the full version of configuration software **XPSMCWIN** version 2.4 and must be installed if no previous version of this software has been installed.

Description	Operating system	Languages	Reference	Weight kg/ lb
Configuration software for controllers XPSMC●●Z● CD-ROM + user manual	Windows 2000, Windows XP	FR, EN, DE, IT, ES, PT	**XPSMCWIN**	0.520/ 1.146
XPSMCWIN software update CD-ROM + user manual	Windows 2000, Windows XP	Software update available on www.schneider-electric.com		

Starter packs

The Starter packs contain the necessary components to start using the safety controller containing:
■ Safety controller (pack reference designates type of safety controller)
■ **XPSMCWIN** configuration software
■ Configurations cable
■ Connectors

Description	Controller included in the pack	Reference	Weight kg/ lb
Starter packs	XPSMC16Z	**XPSMC16ZPACK**	–
	XPSMC16ZC	**XPSMC16ZCPACK**	–
	XPSMC16ZP	**XPSMC16ZPPACK**	–
	XPSMC32Z	**XPSMC32ZPACK**	–
	XPSMC32ZC	**XPSMC32ZCPACK**	–
	XPSMC32ZP	**XPSMC32ZPPACK**	–

(1) To be ordered separately to the controllers.

XPSMCCPC

TSXPCX1031

TSXCANTDM4

References

Connecting cables (1)

Function			Length m/*ft*	Reference	Weight kg/ *lb*
Diagnostics using Magelis operator dialogue terminal type XBT GT			3/ *9.84*	**VW3A8306R30**	1.130/ *2.491*
Configuration software	**1**	Adaptor: RJ45 socket/PC connection cables	–	**XPSMCCPC**	0.011/ *0.024*
	2	Cable to PC serial port (type SUB-D9)	2.5/ *8.20*	**TSXPCX1031**	0.170/ *0.375*
	3	USB / RJ45 cable: used to connect the controller to a PC Equipped with a USB connector (PC end) and an RJ45 connector (controller end)	2.5/ *8.20*	**TCSMCNAM3M002P**	–
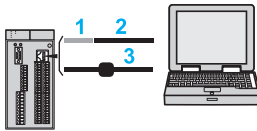
Function	Medium	Length m/*ft*	Reference	Weight kg/ *lb*
Modbus serial link access	Premium automation platform TSX SCY 21601	–	**XPSMCSCY**	–
CANopen bus access	**1** CANopen connection cables (fitted with: 1 SUB-D 9-pin female connector at each end)	0.3/ *0.98*	**TSXCANCADD03**	–
		1/ *3.28*	**TSXCANCADD1**	–
		3/ *9.84*	**TSXCANCADD3**	–
		5/ *16.40*	**TSXCANCADD5**	–
	2 CANopen tap-off box	–	**TSXCANTDM4**	–
	3 Standard CANopen cables	50/ *164.04*	**TSXCANCA50**	–
		100/ *328.08*	**TSXCANCA100**	–
		300/ *984.24*	**TSXCANCA300**	–
Profibus bus access		100/ *328.08*	**TSXPBSCA100**	–
		400/ *1312.33*	**TSXPBSCA400**	–
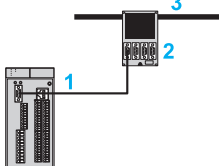
(1) To be ordered separately to the controllers.

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MKTED2140706EN

01/2015