Safety automation system solutions

Preventa safety modules types XPS DMB, XPS DME

For coded magnetic switch monitoring

Operating principle

Safety modules XPS DMB and XPS DME are specifically designed for monitoring coded magnetic safety switches. They incorporate two safety outputs and two solid-state outputs for signalling to the process PLC.
Conforming to category 4 of EN 954-1/ISO 13849-1, modules XPS DMB can monitor two independent sensors and modules XPS DME can monitor up to six independent sensors.
To monitor a higher number of magnetic switches using these safety modules, the magnetic switches can be connected in series, while meeting the requirements of category 3 of EN 954-1/ISO 13849-1.

Safety modules XPS DM●●●●●P incorporate removable terminal blocks, thus optimising machine maintenance.

To aid diagnostics, the modules have LEDs on the front face which provide information on the monitoring circuit status.

Characteristics

Module type				XPS DMB1132	XPS DME1132	XPS DMB1132P	XPS DME1132P
Products designed for max. use in safety related parts of control systems (conforming to EN 954-1/ISO 13849-1)				Category 4 max.			
Conformity to standards				EN/IEC 60204-1, EN 1088/ISO 14119, EN/IEC 60947-5-1, EN/IEC 60947-5-3, DIN V VDE 0801 (1990), DIN V VDE 0801 A1 (1994)			
Product certifications				UL, CSA, BIA			
Supply (Ue) conforming to IEC 38	Voltage		**V**	⎓ 24			
	Voltage limits	⎓ 24 V		- 20…+ 20%			
Consumption			**W**	< 2.5	< 3.5	< 2.5	< 3.5
Module inputs fuse protection				Internal, electronic			
Maximum wiring resistance RL between the module and the coded magnetic switches			Ω	100			
Control unit voltage and current				28 V/8 mA			
Synchronisation time between magnetic switch inputs			**s**	< 0.5			
Safety outputs	Voltage reference			Volt-free			
	Number and type of safety circuits			2 N/O			
	Number and type of solid-state outputs			2			
	Breaking capacity in AC-15		**VA**	C300: inrush 1800, sealed: 180			
	Breaking capacity in DC-13			24 V/1.5 A, L/R = 50 ms			
	Max. thermal current (Ithe)		**A**	6			
	Max. total thermal current		**A**	12			
	Output fuse protection		**A**	4 gG or 6 fast acting			
	Minimum current		**mA**	10			
	Minimum voltage		**V**	17			
Electrical durability				See page 1/162			
Response time on input opening			**ms**	< 20			
Rated insulation voltage (Ui)			**V**	300 (degree of pollution 2 conforming to EN/IEC 60947-5-1, DIN VDE 0110 parts 1 & 2)			
Rated impulse withstand voltage (Uimp.)			**kV**	4 (overvoltage category III, conforming to EN/IEC 60947-5-1, DIN VDE 0110 parts 1 & 2)			
LED display				3	15	3	15
Ambient air temperature			**°C**	For operation: - 10…+ 55, for storage: - 25…+ 85			
Degree of protection conforming to IEC 60529				Terminals: IP 20, enclosure: IP 40			
Connection	Type			Captive screw clamp terminals		Captive screw clamp terminals, removable terminal block	
	1-wire connection	Without cable end		Solid or flexible cable: 0.14… 2.5 mm²		Solid or flexible cable: 0.2…2.5 mm²	
		With cable end		Without bezel, flexible cable: 0.25…2.5 mm²			
		With cable end		With bezel, flexible cable: 0.25…1.5 mm²		With bezel, flexible cable: 0.25…2.5 mm²	
	2-wire connection	Without cable end		Solid or flexible cable: 0.14…0.75 mm²		Solid cable: 0.2…1 mm², flexible cable: 0.2…1.5 mm²	
		With cable end		Without bezel, flexible cable: 0.25…1 mm²			
		With cable end		With bezel, flexible cable: 0.5… 1.5 mm²			

Connections: pages 1/242 to 1/245
Dimensions: page 1/266

Safety automation system solutions

Preventa safety modules types XPS DMB, XPS DME

For coded magnetic switch monitoring



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XPS DMB1132●



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XPS DME1132

References

Description	Type of terminal block connection	Number of safety circuits	Solid-state outputs for PLC	Supply V	Reference	Weight kg
Safety module for monitoring 2 coded magnetic switches	Integrated in module	2 N/O	2	⎓ 24	**XPS DMB1132**	0.250
Safety module for monitoring 6 coded magnetic switches	Integrated in module	2 N/O	2	⎓ 24	**XPS DME1132**	0.300
Safety module for monitoring 2 coded magnetic switches	Removable from module	2 N/O	2	⎓ 24	**XPS DMB1132P**	0.250
Safety module for monitoring 6 coded magnetic switches	Removable from module	2 N/O	2	⎓ 24	**XPS DME1132P**	0.300

Connections:
pages 1/242 to 1/245

Dimensions:
page 1/266

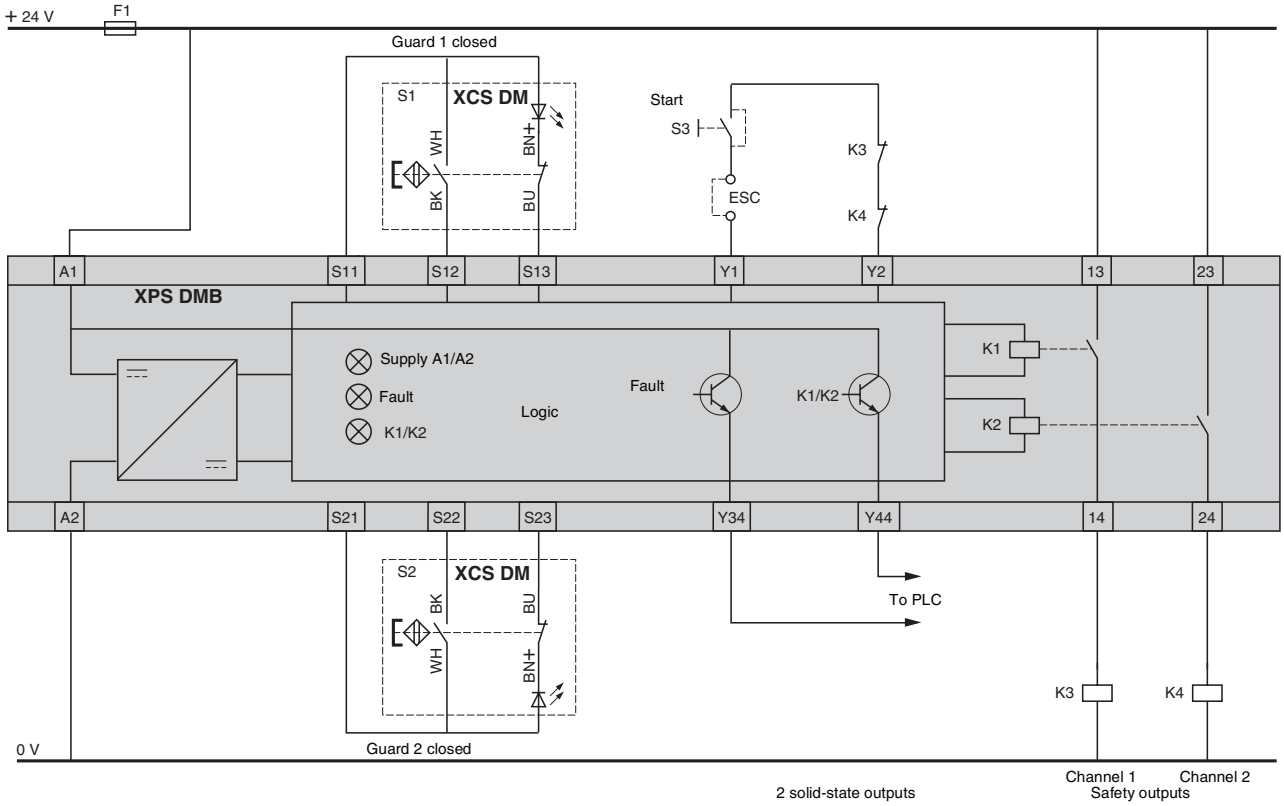
Safety automation system solutions

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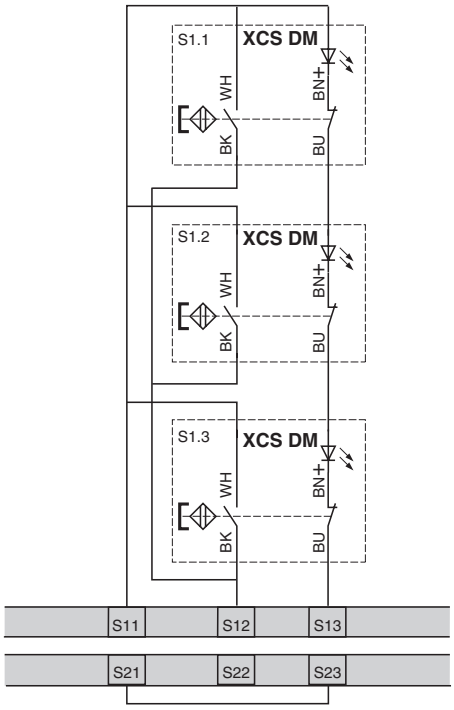
XPS DMB

Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 2-pole N/C + N/O (N/C staggered) contact.
For example with 3-pole N/C + N/C + N/O contact see page 32942/4



ESC: External start conditions.

Wiring to category 3 conforming to EN 954-1/ISO 13849-1. Example with 3 switches with 2-pole N/C + N/O (N/C staggered) contacts.



Input: S11, S12, S13 or S21, S22, S23.
Input not used: terminals S21-S23 linked.

Principle: page 1/240
Characteristics: page 1/240
References: page 1/241
Dimensions: page 1/266

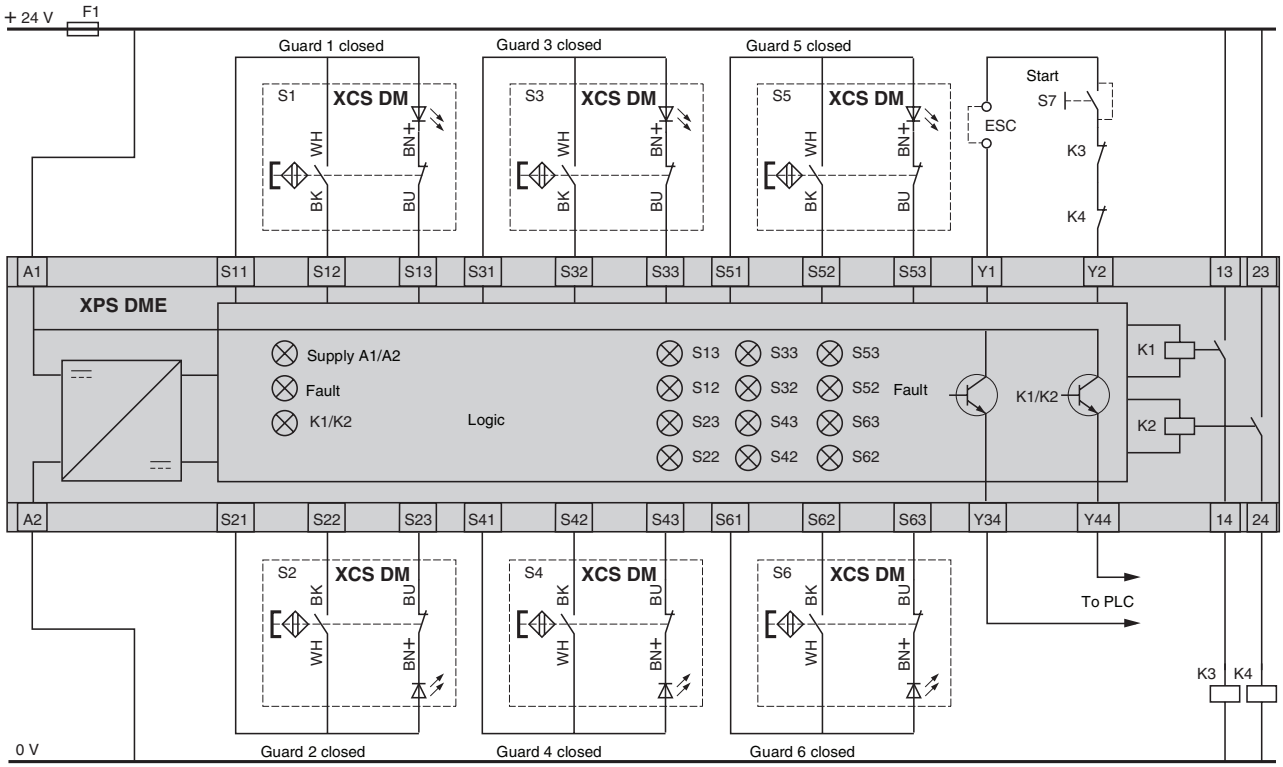
Safety automation system solutions

Preventa safety modules types XPS DMB, XPS DME

For coded magnetic switch monitoring

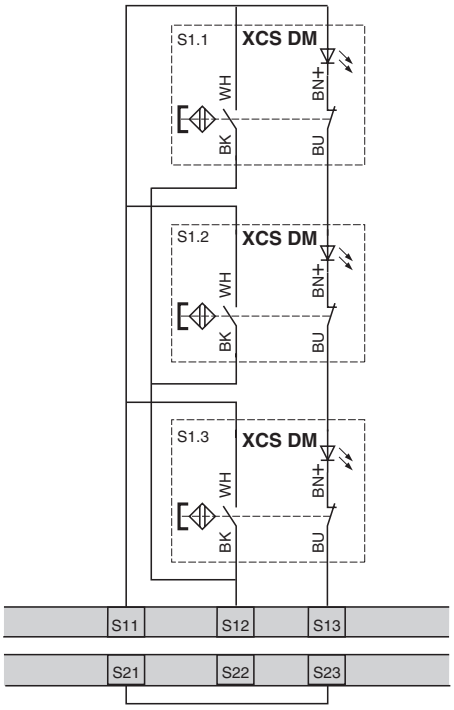
XPS DME

Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 2-pole N/C + N/O (N/C staggered) contact



ESC: External start conditions.

Wiring to category 3 conforming to EN 954-1/ISO 13849-1. Example with 3 switches with 2-pole N/C + N/O (N/C staggered) contacts.



Input: S11, S12, S13 or S21, S22, S23 or S31, S32, S33 or S41, S42, S43 or S51, S52, S53 or S61, S62, S63.
Input not used: terminals S●1-S●3 (S21-S23, S31-S33, S41-S43, S51-S53, S61-S63) linked.

Principle: page 1/240
Characteristics: page 1/240
References: page 1/241
Dimensions: page 1/266

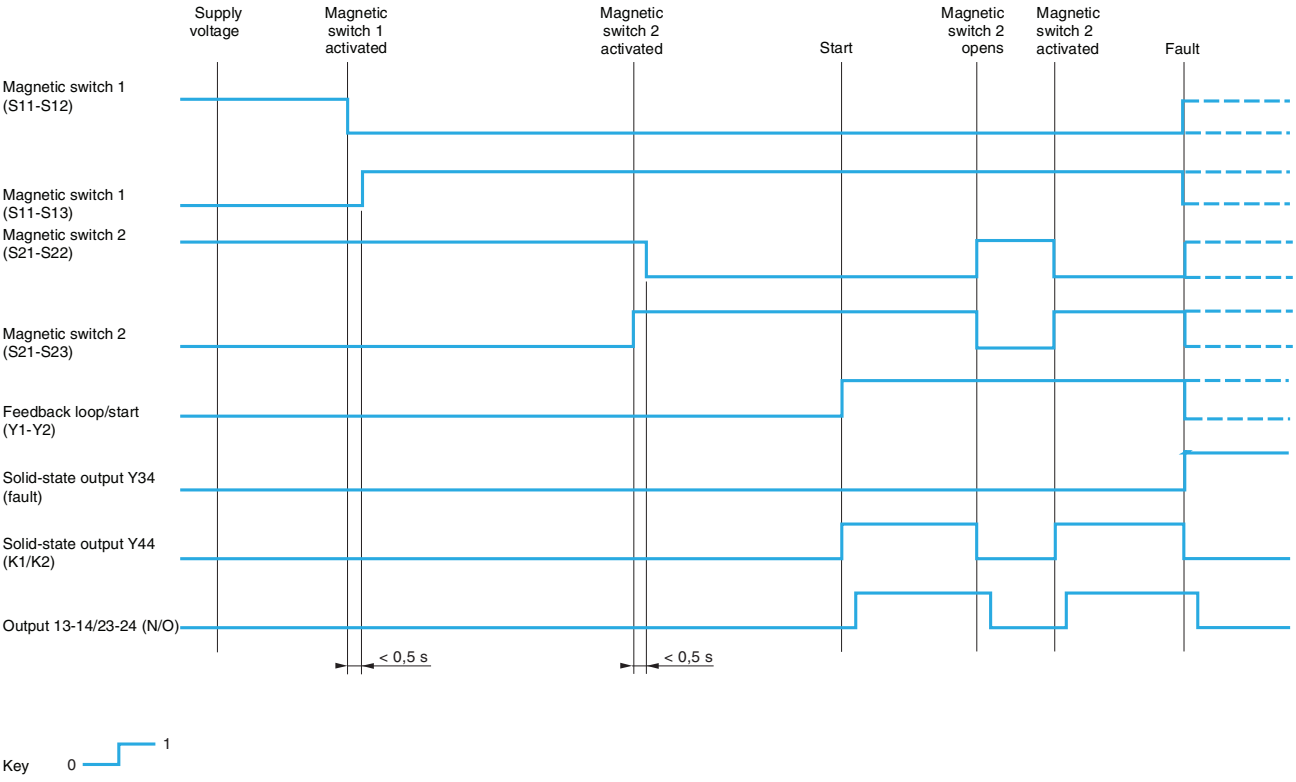
Safety automation system solutions

Preventa safety modules types XPS DMB, XPS DME

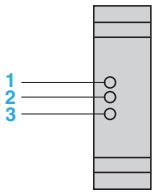
For coded magnetic switch monitoring

XPS DMB

Functional diagram



LED details



1 Supply voltage A1-A2, internal electronic fuse status.
2 Fault signalling.
3 Safety outputs closed.

Principle: page 1/240
Characteristics: page 1/240
References: page 1/241
Dimensions: page 1/266

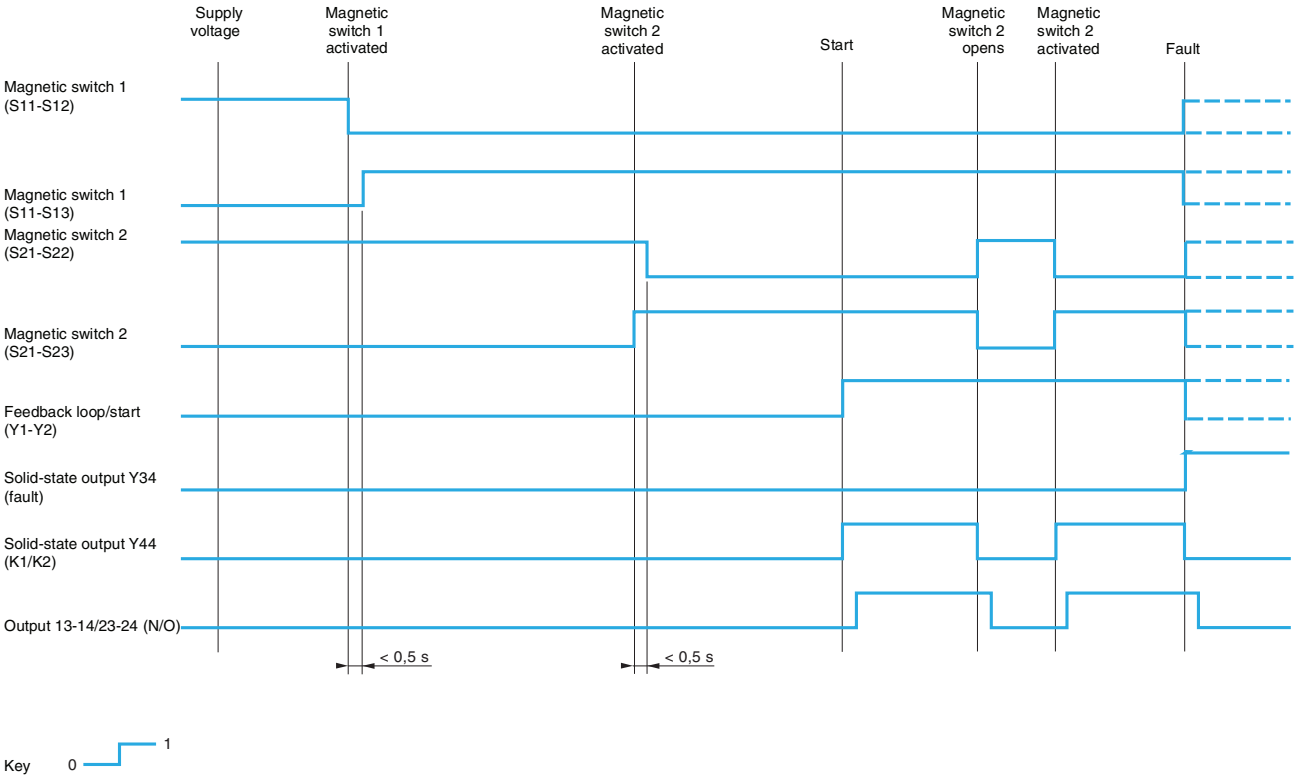
Safety automation system solutions

Preventa safety modules types XPS DMB, XPS DME

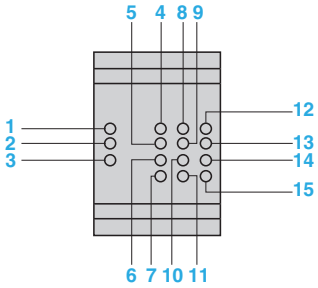
For coded magnetic switch monitoring

XPS DME

Functional diagram



LED details



1 Supply voltage A1-A2, internal electronic fuse status.
2 Fault signalling.
3 Safety outputs closed.
4 Magnetic switch 1 activated.
5 Magnetic switch 1 deactivated.
6 Magnetic switch 2 activated.
7 Magnetic switch 2 deactivated.
8 Magnetic switch 3 activated.
9 Magnetic switch 3 deactivated.
10 Magnetic switch 4 activated.
11 Magnetic switch 4 deactivated.
12 Magnetic switch 5 activated.
13 Magnetic switch 5 deactivated.
14 Magnetic switch 6 activated.
15 Magnetic switch 6 deactivated.

Principle: page 1/240
Characteristics: page 1/240
References: page 1/241
Dimensions: page 1/266