

Operating principle

Safety modules XPSAK are designed to conform with category 4 of the standard EN 954-1/ISO 13849-1.

They are used for:

- Monitoring Emergency stop circuits conforming to standards EN/ISO 13850 and EN/IEC 60204-1.

- Electrical monitoring of switches activated by protection devices, with optional selection of synchronization time between signals.

- Monitoring 4-wire sensing mats or edges.

- Monitoring type 4 light curtains conforming to EN/IEC 61496-1 which have solid-state safety outputs with test function (for example, light curtains type XUSL, conforming to the category 4 of standard EN 954-1/ISO 13849-1).

Housed in a compact enclosure, the modules have 3 safety outputs, a relay signalling output and 4 solid-state signalling outputs for signalling to the process PLC.

Preventa™ safety relay modules XPSAK●●●●P incorporate removable terminal blocks, thus optimizing machine maintenance.

To aid diagnostics, the modules have 4 LEDs on the front cover which provide information on the monitoring circuit status.

The Start button monitoring function is configurable depending on the wiring.

Characteristics

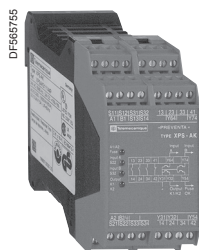
Module type			XPSAK3●1144	XPSAK3●1144P
Product designed for max. use in safety related parts of control systems (conforming to EN 954-1/ISO 13849-1)			Category 4 max.	
Conformity to standards			EN/IEC 60204-1, EN 1088/ISO 14119, EN/IEC 60947-5-1, EN/ISO 13850, EN/IEC 60947-1 +A11	
Product certifications			UL, CSA, BG	
Supply	Voltage	V	~ and --- 24, ~ 48, ~ 110 and --- 24, ~ 120 and --- 24, ~ 230 and --- 24	
	Voltage limits		- 15...+ 10%	
	Frequency	Hz	50/60	
Power consumption	24 V version	VA	≤ 5	
	110/120/230 V versions		≤ 6	
Module inputs fuse protection			Internal, electronic	
Start button monitoring			Yes/No (configurable by terminal connections)	
Control unit voltage and current between terminals S21-S22, S31-S32			--- 24 V/30 mA approx. (at nominal supply voltage)	
Maximum wiring resistance RL between terminals S21-S22, S31-S32			Ω	28
Synchronization time between inputs A and B (terminals S21-S22, S31-S32)			s	Automatic start: 2 or 4 depending on wiring Manual start (start button between S33 and S34): unlimited
Outputs	Voltage reference		Relay hard contacts	
	Number and type of safety circuits		3 N.O. (13-14, 23-24, 33-34)	
	Number and type of additional circuits		1 N.C. (41-42) + 4 solid-state	
	Breaking capacity in AC-15		VA	C300: inrush 1800, maintained 180
	Breaking capacity in DC-13			24 V/1.5 A - L/R = 50 ms
	Breaking capacity of solid-state outputs			24 V/20 mA, 48 V/10 mA
	Max. thermal current (Ithe)		A	6
	Max. total thermal current		A	18
	Output fuse protection		A	4 gG or 6 fast acting, conforming to EN/IEC 60947-5-1, DIN VDE 0660 part 200
	Minimum current		mA	10
	Minimum voltage		V	17
Electrical life			See page 2/172	
Response time on input opening			ms	≤ 40
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				4
Operating temperature			°F (°C)	+ 14...+ 131 (- 10...+ 55)
Storage temperature			°F (°C)	- 13...+ 267.8 (- 25...+ 85)
Degree of protection	Conforming to IEC 60529	Terminals	IP 20	
		Enclosure	IP 40	
Connections		Type	Captive screw clamp terminals	Captive screw clamp terminals, removable terminal block
1-wire connection	Without cable end		Solid or flexible cable: 26-14 AWG (0.14...2.5 mm²)	Solid or flexible cable: 24-14 AWG (0.2...2.5 mm²)
		With cable end	Without bezel, flexible cable: 24-14 AWG (0.25...2.5 mm²)	
		With cable end	With bezel, flexible cable: 24-16 AWG (0.25...1.5 mm²)	With bezel, flexible cable: 24-14 AWG (0.25...2.5 mm²)
	2-wire connection	Without cable end	Solid or flexible cable: 26-18 AWG (0.14...0.75 mm²)	Solid cable: 24-18 AWG (0.2...1 mm²), flexible cable: 24-16 AWG (0.2...1.5 mm²)
		With cable end	Without bezel, flexible cable: 24-18 AWG (0.25...1 mm²)	
		With cable end	Double, with bezel, flexible cable: 20-16 AWG (0.5...1.5 mm²)	

References



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Description	Type of terminal block connection	Number of safety circuits	Outputs: Additional / Solid-state for PLC	Supply	Reference	Weight oz (kg)
Safety modules for Emergency stop, switch, sensing mat/edges or light curtain monitoring	Integrated in module	3	1 / 4	~ 24 V --- 24 V	XPSAK311144	10.582 (0.300)
				~ 110 V --- 24 V	XPSAK361144	14.110 (0.400)
				~ 120 V --- 24 V	XPSAK351144	14.110 (0.400)
				~ 230 V --- 24 V	XPSAK371144	14.110 (0.400)
	Removable from module	3	1 / 4	~ 24 V --- 24 V	XPSAK311144P	10.582 (0.300)
				~ 48 V	XPSAK331144P	10.582 (0.300)
				~ 110 V --- 24 V	XPSAK361144P	14.110 (0.400)
				~ 120 V --- 24 V	XPSAK351144P	14.110 (0.400)
				~ 230 V --- 24 V	XPSAK371144P	14.110 (0.400)



XPSAK31144P