

Operating principle

XPS-AF safety modules are designed to conform with category 4 of standard EN 954-1.

They are used for:

- Monitoring emergency stop circuits conforming to standards EN 418 and EN 60204-1.
- Electrical monitoring switches activated by protection devices conforming to the standard EN 1088.

Housed in a compact enclosure, the modules have 3 safety outputs.

Preventa XPS-AF●●●●P safety modules have removable terminal blocks, which facilitate machine maintenance.

To aid diagnostics, the modules have 3 LEDs on the front face which provide information on the monitoring circuit status.

The function for monitoring the Start button can be configured by wiring.

Characteristics

Module type		XPS-AF5130	XPS-AF5130P
Product designed for use in safety related parts of control systems (conforming to EN 954-1)			
		Category 4	
Supply - voltage - voltage limits - frequency	V	~ and --- 24	
		- 15...+ 10 %	
	Hz	50/60	
Consumption	VA	≤ 5	
Module fuse protection		Internal, electronic	
Start button monitoring		Yes/No (configurable by terminal connection)	
Control unit voltage and current		--- 24 V/30 mA approx. (at nominal supply voltage)	
Maximum wiring resistance RL		Ω	90
Synchronisation time between inputs A and B		Unlimited	
Outputs - voltage reference - number and type of safety circuits - breaking capacity in AC-15 - breaking capacity in DC-13 - max. thermal current (Ithe) - max. total thermal current - output fuse protection - minimum current - minimum voltage		Volt-free	
		3 "F" (13-14, 23-24, 33-34)	
	VA	C300 : inrush 1800, maintained 180	
		24 V/1,5 A - L/R = 50 ms	
	A	6	
	A	18	
	A	4 gl or 6 fast acting, conforming to IEC EN 947-5-1, DIN VDE 0660 part 200	
	mA	10	
	V	17	
Electrical durability			See page 38610/6
Response time on input opening		ms	≤ 40
Rated insulation voltage (Ui)		V	300 (degree of pollution 2 conforming to IEC EN 947-5-1, DIN VDE 0110 parts 1 and 2)
Rated impulse withstand voltage (Uimp.)		kV	4 (overvoltage category III, conforming to IEC EN 947-5-1, DIN VDE 0110 parts 1 and 2)
LED display			3
Operating temperature		°C	- 10...+ 55
Storage temperature		°C	- 25...+ 85
Degree of protection	Terminals		IP 20
	conforming to IEC EN 529	Enclosure	IP 40
Connection	Type	Captive screw clamp terminals	Captive screw clamp terminals, separate removable block
	- 1-wire connection	Without cable end	Solid or flexible cable: 0.14...2.5 mm²
		With cable end	Solid or flexible cable: 0.2...2.5 mm²
		Without bezel, flexible cable: 0.25...2.5 mm²	Without bezel, flexible cable: 0.25...2.5 mm²
		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	Solid cable: 0.2...1 mm², flexible cable: 0.2...1.5 mm²
	With cable end	Without bezel, flexible cable: 0.25...1 mm²	Without bezel, flexible cable: 0.25...1 mm²
		Double, with bezel, flexible cable: 0.5...1.5 mm²	Double, with bezel, flexible cable: 0.5...1.5 mm²

Safety solutions using Preventa

Safety modules for emergency stop, switch monitoring



XPS-AF5130



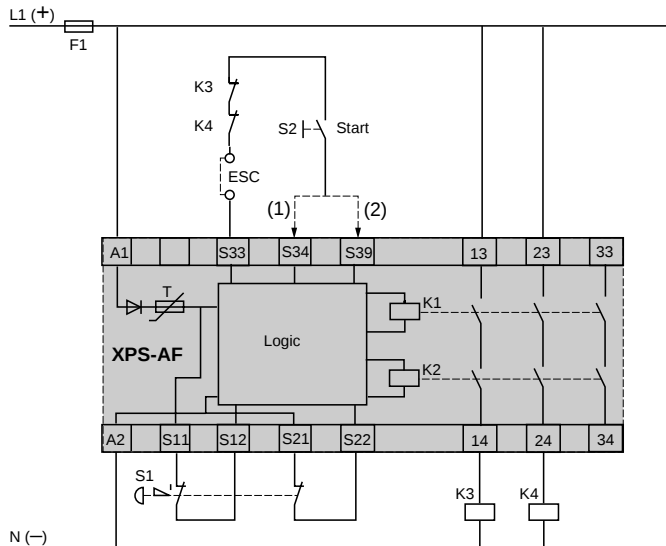
XPS-AF5130P

References

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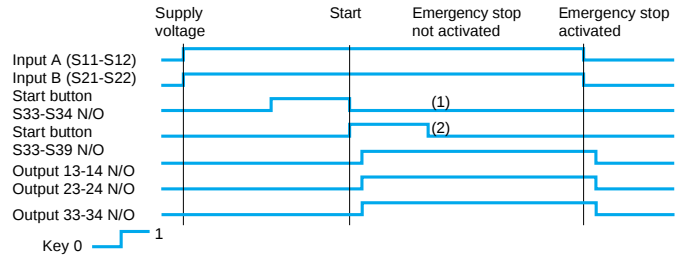
XPS-AF

Module XPS-AF associated with an emergency stop button with 2 N/C contacts



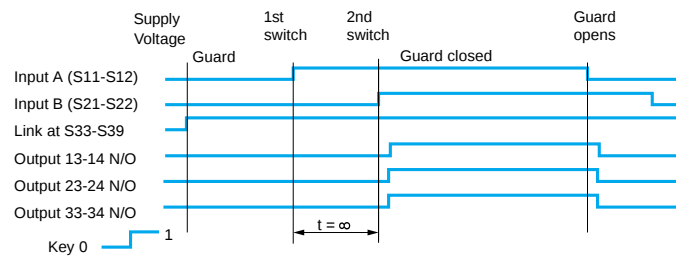
(1) With start button monitoring
(2) Without start button monitoring
ESC: External start conditions

Functional diagrams
Emergency stop function

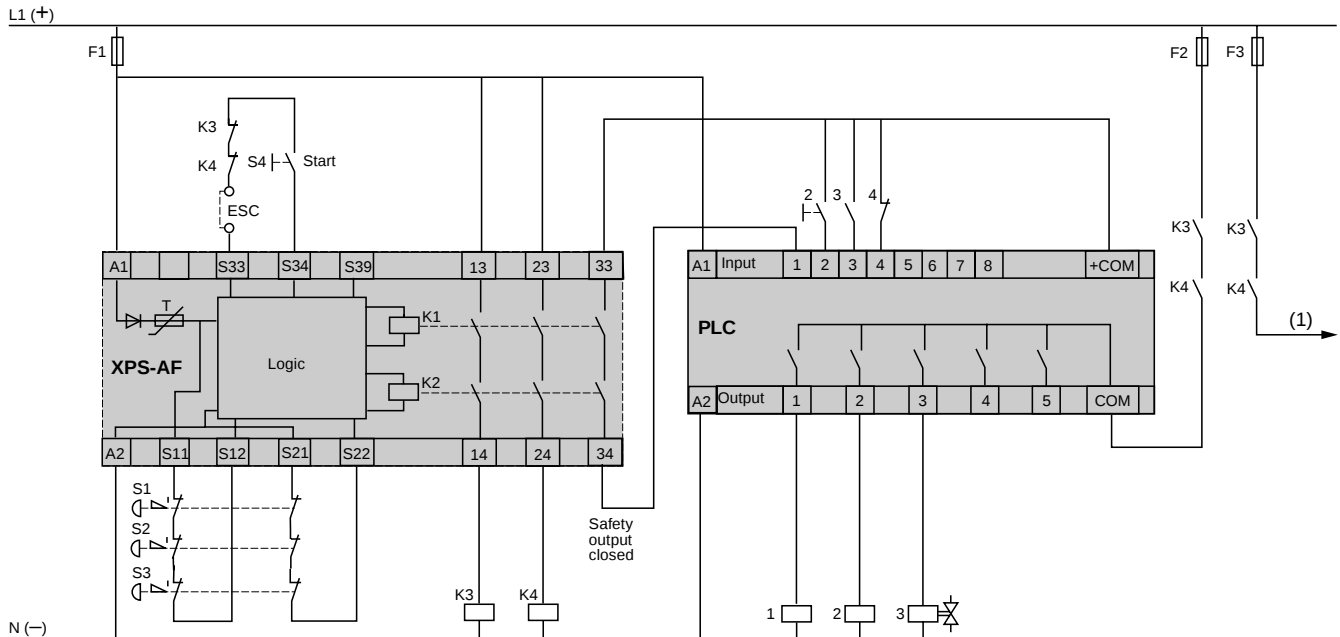


(1) With start button monitoring
(2) Without start button monitoring

Guard function with automatic start



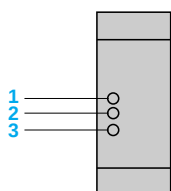
Module XPS-AF with connection of multiple emergency stop buttons, combined with a PLC



ESC: External start conditions

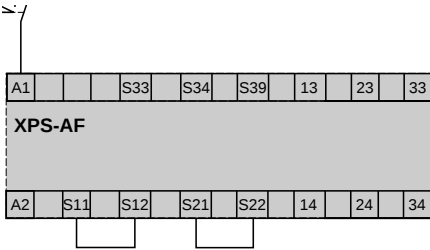
(1) Other circuits controlled by module XPS-AF

Key to LEDs



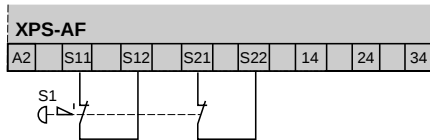
1 A1-A2 supply voltage, fuse status
2 K1 relay energised
3 K2 relay energised

XPS-AF
Emergency stop monitoring function configuration
1-channel wiring

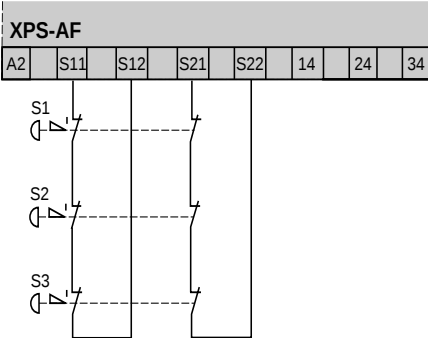


Emergency stop button with a single N/C contact
Not all faults are detected: a short-circuit on the emergency stop pushbutton is not detected.

2-channel wiring

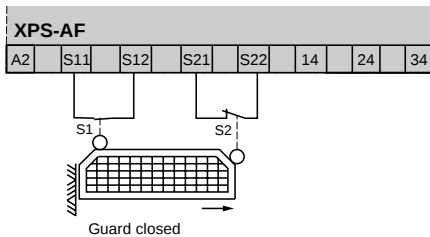


Emergency stop button with 2 N/C contacts
(recommended application).
The 2 input channels are connected to different polarities. A short-circuit between the 2 inputs is detected.

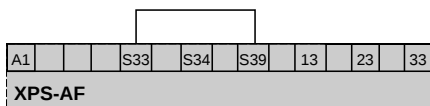


Connection of multiple emergency stop buttons
with 2 N/C contacts (recommended application).
The 2 input channels are connected to different polarities. A short-circuit between the 2 inputs is detected.

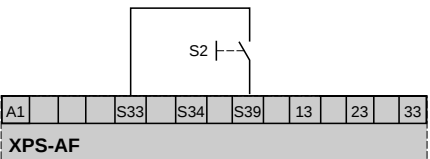
Monitoring of a movable guard associated with 2 limit switches with 1 contact each
(switch 1 with N/O contact, switch 2 with N/C contact)



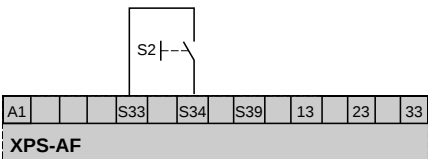
XPS-AF
Configuration with automatic or manual reset



Automatic start

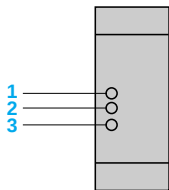


Without start button monitoring,
manual reset



Function: push-release.
With start button monitoring,
manual reset

Key to LEDs



- 1 A1-A2 supply voltage, fuse status
- 2 K1 relay energised
- 3 K2 relay energised