Preventa[™] Safety Relays Type XPSAV, XPSATE & XPSVNE

Catalog Supplement to 9007CT0201

2009





Safety automation system solutions

Preventa[™] safety relays

Electrical Ratings	.2
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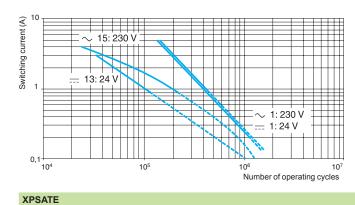
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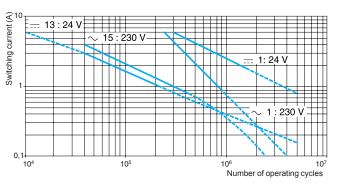
Safety automation system solutions Preventa[™] safety relay modules

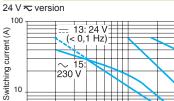
Electrical life

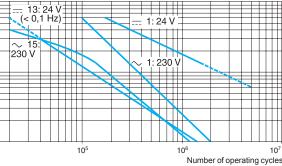
Electrical life ratings of safety contacts conforming to EN 60947-5-1, table C2 XPSAC, XPSTSA, XPSTSW, XPSBA, XPSBC, XPSCM, XPSDA, XPSOT, **XPSPVK, XPSPVT, XPSVNE**

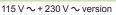
XPSECM, XPSECP

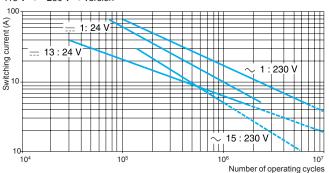








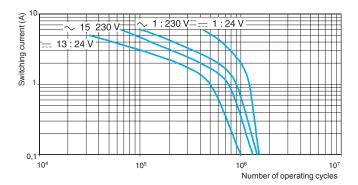




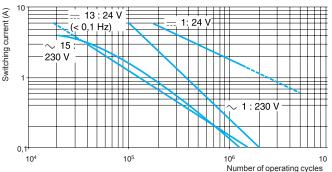


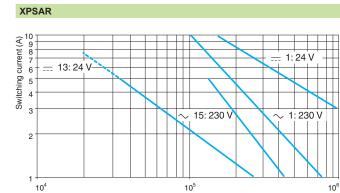
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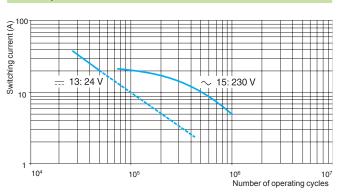


XPSAV, XPSMP, XPSVC, XPSBF, XPSMC









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Number of operating cycles

Operating principle, characteristics

Operating principle

Safety automation system solutions Preventa[™] safety relay modules types XPSAV,

XPSATE

For Emergency stop and switch monitoring

	Emerge 1 and al protection They pro- immedia the open In additi and 2 for for XPS compon variable At the efformation variable At the efformation values, For moor and 30 s Module process signallin To aid d	so meet the safety requirements for the on devices conforming to standard EN ovide protection for both the machine of ately stopping the machine movement rator, or on detection of an anomaly in on to the stop category 0 instantaneou r XPSATE), the modules incorporate s AV and 3 for XPSATE) which allow for ents until a complete stop is achieved speed drive). Ind of the preset delay, the supply is dis ircuits. Jule XPSAV, the time delay of the 3 our between 0 and 300 seconds using sel- lule XPSATE, the time delay of the 3 our between 0 and 300 seconds using sel- seconds using a 12-position selector s XPSAV also incorporates 3 solid-state PLC. Module XPSATE incorporates 4 of the process PLC. iagnostics, the modules have LEDs with	rds EN/ISO 13850 and EN/IEC 60204- e electrical monitoring of switches in 1088/ISO 14119. operator and the machine by on receipt of a stop instruction from the safety circuit itself. us opening safety outputs (3 for XPSAV stop category 1 time delay outputs (3 controlled deceleration of the motor (for example, motor braking by sconnected by opening the time delay tput circuits is adjustable, in 15 preset ector buttons. utput circuits is adjustable between 0 witch. e signalling outputs for signalling to the solid-state signalling outputs for				
	monitoring circuit status. The Start button monitoring function is configurable depending on the wiring.						
Characteristics							
Module type		XPSAV11113 and AV11113P	XPSATE eeee and ATE eeeP				
Product designed for max. use in safety related parts of		Category 4 max.	Category 4 max. (instantaneous safety				

Module type			XPSAV11113 and AV11113P	XPSATE eeee and ATE eeeP
Product designed for max. u control systems (conforming			Category 4 max.	Category 4 max. (instantaneous safety outputs) Category 3 max. (time delay safety outputs)
Conformity to standards			EN/IEC 60204-1, DIN V VDE 801 + A1, EN/ISO 13850, EN 1088/ISO 14119, EN/IEC 60947-1 A11, EN/IEC 60947-5-1	EN/IEC 60204-1, EN/IEC 60947-5-1, EN/ ISO 13850, EN 50082-2
Product certifications			UL, CSA, BIA	UL, CSA, BG
Supply	Voltage	v	24	∼ and 24, ∼ 115, ∼ 230
	Voltage limits		- 20+ 20%	- 20+ 10% (24 V) - 15+ 15% (115 V) - 15+ 10% (230 V)
	Frequency	Hz	-	50/60
Power consumption			< 5	< 8
Module inputs fuse protection			Internal, electronic	Internal, electronic
Adjustable time delay		s	0300	030
Start button monitoring			Yes/No (configurable by terminal connections)	Yes/No (configurable by terminal connections)
Control unit voltage (at nominal supply voltage)			Between input terminals S21-S22, S31-S32 or S11-S12	Between input terminals S11-S12, S21-S22 or S11-B1
	24 V version	v	24	24
	115 V, 230 V version	v	-	48
Calculation of wiring resista	nce RL between input terminals	Ω	100 max. Maximum cable length: 6562 ft. (2000 m)	RL max. = Uint - U min. I min. Ue = true voltage applied to terminals A1-A2 U int (terminals S11-S21) = supply voltage Ue - 3 V (24 V version) U int between 42 V and 45 V, with typical value = 45 V (115 V, 230 V version) Calculated max. RL must be equal to or greater than the true value

Wiring Diagrams: page 6 Principles: page 3 References: page 5 Characteristics: page 3 Dimensions: page 17 3

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Characteristics (continued)

Safety automation system solutions Preventa[™] safety relay modules types XPSAV,

XPSATE

For Emergency stop and switch monitoring

Module type	istics (continued)			XPSAV11113	XPSAV11113P	XPSATE	ATE	
	n time between inputs		s	For guard: 1.5 For Emergency stop:		Approx. 0.075 For automatic start, te		
Outputs	Voltage reference			Relay hard contacts		Y3-Y4 linked Relay hard contacts		
Outputs				Itelay hard contacts				
	Number and type of instantaneous opening safety circuits			3 N.O. (03-04, 13-14,	, 23-24)	2 N.O. (13-14, 23-24,	33-34)	
	Number and type of time circuits	delay opening safety		3 N.O. (37-38, 47-48,	, 57-58)	3 N.O. (57-58, 67-68,	77-78)	
	Number and type of addi	tional circuits		3 solid-state		4 solid-state		
	Breaking capacity in Instantaneous AC-15 outputs			C300: inrush 1800, m	naintained 180	C300: inrush 1800, m	aintained 180	
		Time delay outputs	VA	C300: inrush 1800, m	naintained 180	C300: inrush 1800, m	aintained 180	
	Breaking capacity in DC-13 Instantaneous outputs 24 V/1.25 AL/R = 50 ms					24 V/1.0 A L/R = 50 m	IS	
	Time delay outputs		24 V/1.25 A L/R = 50	ms	24 V/1.0 A L/R = 50 m	IS		
	Breaking capacity of solid-state outputs			24 V/20 mA		-		
	Max. thermal current (Ithe)	Instantaneous outputs	Α	3.3 for all 3, or 6 for 1 or 4 for 2 and for 2 for		5		
		Time delay outputs	Α	3.3 for all 3, or 6 for 1 or 4 for 2 and 2 for 1	and 2 for 2,	2.5		
	Max. total thermal currer	Max. total thermal current				8		
	Output fuse protection, using fuses conforming	Instantaneous outputs	Α	4 gG or 6 fast acting		6 gG		
	to EN/IEC 60947-5-1, DIN VDE 0660 part 200	Time delay outputs	Α	4 gG or 6 fast acting		4 gG		
	Minimum current		mA	10		10		
	Minimum voltage		V	17		17		
Electrical life				See page 2				
Response time	on instantaneous openir	ng inputs	ms	< 30		< 20		
Rated insulation	n voltage (Ui)		v	300 (degree of pollution	on 2 conforming to EN/	/IEC 60947-5-1, DIN VI	DE 0110 parts 1 and 2	
Rated impulse	withstand voltage (Uimp)		kV	4 (overvoltage catego	ry III, conforming to EN/	IEC 60947-5-1, DIN VD	E 0110 parts 1 and 2)	
LED display				4 (overvoltage category III, conforming to EN/IEC 60947-5-1, DIN VDE 0110 parts 1 and 11 4				
Operating temp	perature		°F (°C)	+ 14+ 131 (- 10+	55)			
Storage temper	rature		°F (°C)	- 13+ 267.8 (- 25	+ 85)			
Degree of prote		Terminals		IP 20				
conforming to IE	C/EN 60529	Enclosure		IP 40				
Connections		Туре		Captive screw clamp terminals	Captive screw clamp terminals, removable terminal block	Captive screw clamp terminals	Captive screw clam terminals, removable terminal block	
	1-wire connection	Without cable end		Solid or flexible cable: 26-14 AWG (0.14 - 2.5 mm ²)	Solid or flexible cable: 24-14 AWG (0.20 - 2.5 mm ²)	Solid or flexible cable: 26-14 AWG (0.14 - 2.5 mm ²)	Solid or flexible cable: 24-14 AWG (0.25 - 2.5 mm ²)	
		With cable end		-	e cable: 24-14 AWG (0	, · · · · · · · · · · · · · · · · · · ·		
				With bezel, flexible cable: 24-16 AWG (0.25 - 1.5 mm ²)	With bezel, flexible cable: 24-14 AWG (0.25 - 2.5 mm ²)	With bezel, flexible cable: 24-16 AWG (0.25 - 1.5 mm ²)	With bezel, flexible cable: 24-14 AWG (0.25 - 2.5 mm ²)	
	2-wire connection	Without cable end		Solid or flexible cable: 26-20 AWG (0.14 - 0.75 mm ²)	Solid cable: 24-18 AWG (0.2 - 1.0 mm ²) Flexible cable: 24-16 AWG (0.20 - 1.5 mm ²)	Solid or flexible cable: 26-20 AWG (0.14 - 0.75 mm ²)	Solid cable: 24-18 AWG (0.2 - 1.0 mm ²) Flexible cable: 24-16 AWG (0.20 - 1.5 mm ²)	
		With cable end		Without bezel, flexible	e cable: 24-18 AWG (0	.25 - 1.0 mm ²)		
					exible cable: 22-14 AV			

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Safety automation system solutions Preventa[™] safety relay modules types XPSAV,

XPSATE

For Emergency stop and switch monitoring

	References						
	Description	Number of safety circuits	Additional outputs	Supply	Type of terminal block connection	Reference	Weight oz (kg)
	Safety modules for Emergency stop and switch monitoring	6 N.O. (3 N.O. time delay)	3 solid-state	24 V	Integrated in module	XPSAV11113	11.288 (0.320)
13		6 N.O. (3 N.O. time delay)	3 solid-state	24 V	Removable from module	XPSAV11113P	11.288 (0.320)
13P							
		5 N.O. (3 N.O. time delay)	4 solid-state	~/24 V	Integrated in module	XPSATE5110	9.877 (0.280)
HISTISSE 23 HISTISSE 23 ■ manual state					Removable from module	XPSATE5110P	9.877 (0.280)
				\sim 115 V	Integrated in module	XPSATE3410	13.404 (0.380)
· · · · · · · · · · · · · · · · · · ·					Removable from module	XPSATE3410P	13.404 (0.380)
				\sim 230 V	Integrated in module	XPSATE3710	13.404 (0.380)

XPSAV safety relays are suitable for use in circuits through Category 4 per EN 954-1 and ISO 13849-1.

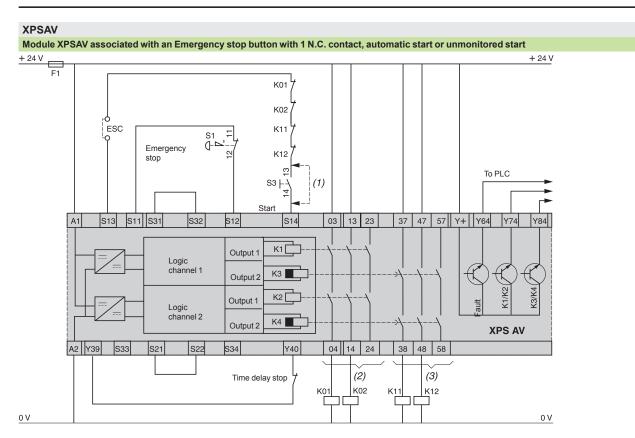
XPSAT safety relays are suitable for use in circuits through Category 4 per EN 954-1 and ISO 13849-1 when instantaneous break contacts are used.

XPSAT safety relays are suitable for use in circuits through Category 3 per EN 954-1 and ISO 13849-1 when time delay break contacts are used.

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Safety automation system solutions Preventa[™] safety relay modules type XPSAV

For Emergency stop and switch monitoring



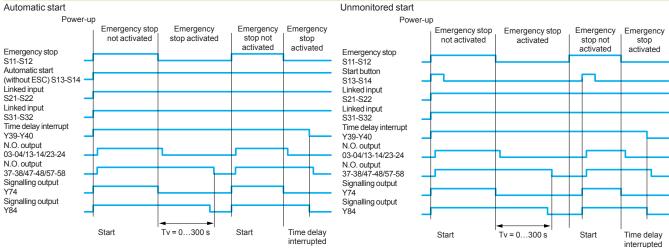
(1) Jumper for automatic start.

(2) Instantaneous opening safety outputs (stop category 0).

(3) Time delay opening safety outputs (stop category 1).

ESC = External start conditions.

Functional diagrams



Automatic start

There is no start contact or it is jumpered (wiring between terminals S13 - S14).

Note: Automatic start function is not available on the XPSAV with 2 channel wiring on the inputs. Automatic start function is only available on single channel wiring on the inputs.

Unmonitored start

The output is activated on closing of the start contact (wiring between terminals S13 - S14).

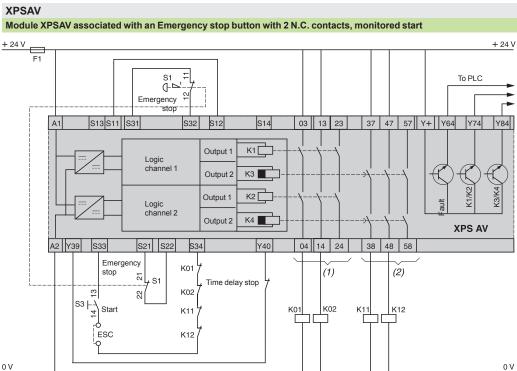
Monitored start

The start input is monitored so that there is no start-up in the event of the start contact being jumpered or the start circuit being closed for more than 10 seconds. Start-up is triggered following activation of the start button (push-release function) on opening of the contact (wiring between terminals S33 - S34).

Wiring diagrams (continued)

Safety automation system solutions Preventa[™] safety relay modules type XPSAV

For Emergency stop and switch monitoring



<u>0 V</u>

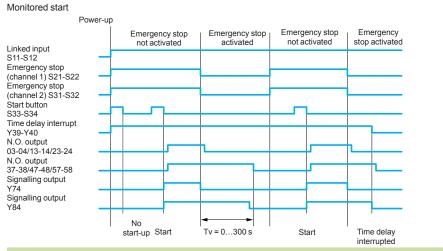
(1) Instantaneous opening safety outputs (stop category 0).

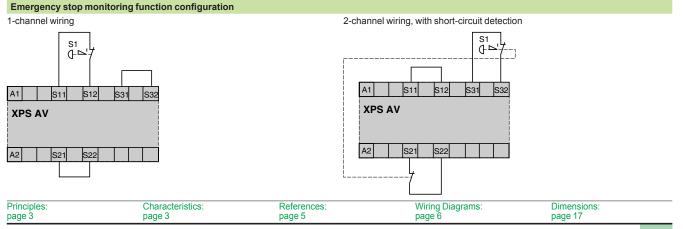
(2) Time delay opening safety outputs (stop category 1).

ESC = External start conditions.

Note: Automatic start function is not available on the XPSAV with 2 channel wiring on the inputs. Automatic start function is only available on single channel wiring on the inputs.







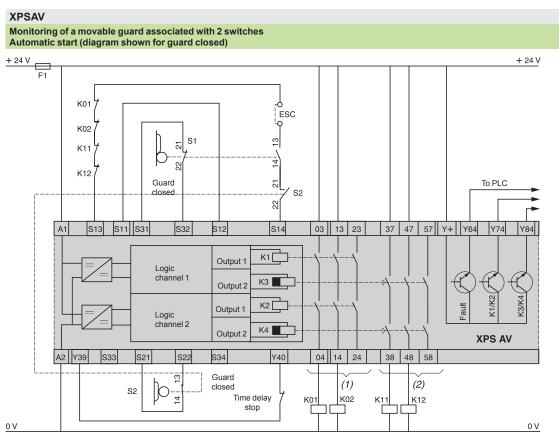
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Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

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Wiring diagrams (continued)

Safety automation system solutions Preventa[™] safety relay modules type XPSAV For Emergency stop and switch monitoring

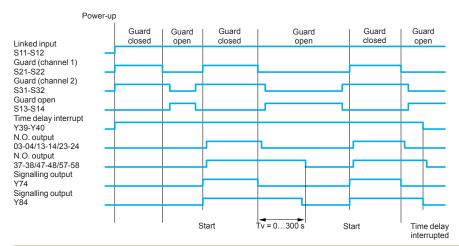


(1) Instantaneous opening safety outputs (stop category 0).

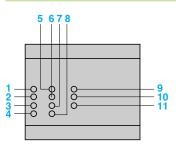
(2) Time delay opening safety outputs (stop category 1).

ESC = External start conditions.

Functional diagram



LED details



- 1 S12 input status. 2 S22 input status.
- 3 S32 input status.
- 4 S34 input status.
- 5 S14 input status.
- 6 Y40 input status (time delay stop).
- 7 K1/K2 status (N.O. instantaneous opening safety outputs).
- 8 K3/K4 status (time delay opening safety outputs).
- 9 Supply voltage A1-A2.
- 10 Fault.
- 11 Configuration mode

8

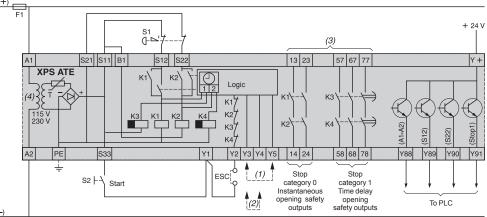
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Safety automation system solutions Preventa[™] safety relay modules type XPSATE

Preventa[™] safety relay modules type XPSATE For Emergency stop and switch monitoring

XPSATE Module XPSATE associated with an Emergency stop button

L1 (+)



<u>N (–)</u>

S1: Emergency stop button with 2 N.C. contacts (recommended application).

S2: Start button.

ESC: External start conditions

Y1 (S33) - Y2: Feedback loop.

F1: 4 A max.

(1) With start button monitoring.

(2) Without start button monitoring.

(3) The outputs must be fuse protected. Technical characteristics for maximum rating of fuses, see page 4.

(4) \sim 115/230 V only.

Principles

page 3

(5) For automatic start, jumper S2 (N.O. start button between terminals S33-Y1). This is only feasible when configured without start button monitoring (Y3 and Y4 jumpered). If S2 is jumpered and the module is configured for start button monitoring (Y3 and Y5 jumpered), the N.O. safety contacts will not close.

Functional diagram of module XPSATE with Emergency stop button monitoring

Characteristics:

page 3

		Supply voltage	Begin	Emergency stop not activated	Emergency stop activated	C
With	Emergency stop (O1)	_				
Start button	Solid-state output Y89 (S12	:)				
	Emergency stop (O2)					
	Solid-state output Y90 (S22	:)		1		
	Start button			1 2		
	Start button		Tn	nax. = 75 ms		
		-				
Without Start button	Emergency stop (O2 or O1)				-	
otart button	Solid-state output Y89 (S12	·	·		-	
	Emergency stop (O2 or O1)					
	Solid-state output Y90 (S22 Start button)		3		
Outputs	External start conditions					
•	Output 13-14 (N.O.)					
	Output 23-24 (N.O.)					
	Output 57-58 (N.O.)		<u> </u>			
	Output 67-68 (N.O.)					
	Output 77-78 (N.O.)					
	Solid-state output Y88 (A1/					
	Solid-state output Y91 (Sto	o 1)			Tv = 030 s	
	Key 0					
1 With sta	rt button monitoring (Y3-Y5 conne	ction).			
	start button monitorin			n).		
	start button (connecti	on Y3-Y4 an	d S33-`	(1).		
Tv: adjustab						
Descriptio	n of LEDs					
Г				1 Supply volta	age A1-A2, internal	l ele
		_		2 S12 (A) inpu		
				3 S22 (B) inpu		
1	-O			4 Stop catego	ory 1 outputs closed	d.
3	-0 -0					
4	-0					

page 5

References:

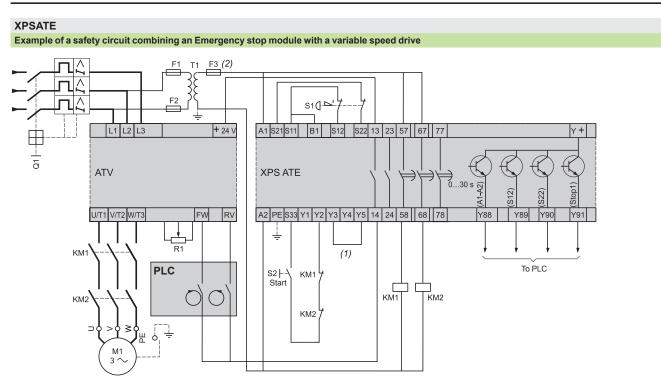
Wiring Diagrams: page 6

Dimensions:

page 17

Safety automation system solutions Preventa[™] safety relay modules type XPSATE

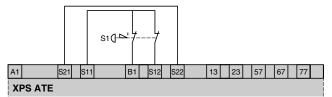
Preventa[™] safety relay modules type XPSATE For Emergency stop and switch monitoring



S1: Emergency stop button with 2 N.C. contacts (recommended application).

- S2: Start button
- (1) With start button monitoring.
- (2) Technical characteristics for maximum rating of fuses, see page 4.

Connection with 1 Emergency stop button

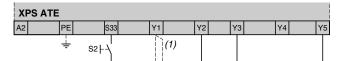


Both input channels are supplied at the same potential.

S1: Emergency stop button with 2 N.C. contacts. A short-circuit between the 2 inputs is not detected.

Configuration with start button monitoring

(functional diagram for Start button 1, see page 9)

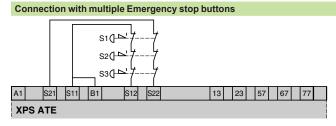


(1) Auxiliary terminal (to be used to separate the feedback loop from the wiring to the start button).

Configuration without start button monitoring (functional diagram for Start button 2, see *page* 9)

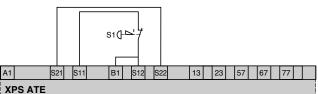
X	PS ATE									
A2		PE		S33	Y1		Y2	YЗ	Y4	Y5
		÷	S2	7		(1)				

(1) Auxiliary terminal (to be used to separate the feedback loop from the wiring to the start button).



The 2 input channels are supplied at different potentials. A short-circuit between the 2 inputs is detected.

Monitoring an Emergency stop button with 1 N.C. contact



AI S AIL

S1: Emergency stop button with 1 N.C. contact.

Not all faults are detected: a short-circuit on the Emergency stop button is not detected.



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Safety automation system solutions Preventa[™] safety relay modules type XPSVNE

Preventa[™] safety relay modules type XPSVNE For zero speed detection

Operating principle

Preventa[™] safety relay modules type XPSVNE for zero speed detection are used to detect the stop condition of electric motors. Their most common applications include: providing the unlock signal for electrically interlocked sliding or removable machine guards, controlling rotation direction signals for reversing motors and engaging locking brakes after a motor has come to a standstill.

As electric motors run down, a remanent voltage is produced in the windings of the motor due to residual magnetism. This voltage is proportional to the speed of the motor and, therefore, decreases as the motor comes to a standstill. This remanent voltage is measured in a redundant manner so as to detect the stop condition of the motor. The cabling between the motor windings and the inputs of the XPSVNE module is also monitored to prevent a cabling breakage or anomaly being seen as a stopped motor.

A transformer should not be used to connect the motor to terminals Z1, Z2 and Z3 since there is no monitoring of the connection with the motor winding via the resistance monitoring.

Modules XPSVNE are suitable for detecting the stop condition of all types of a.c. or d.c. motor driven machines which, when the motor runs down, produce a remanent voltage in the windings due to residual magnetism. These machines can be controlled by electronic devices, such as variable speed drives or d.c. injection brakes.

The input filters for standard XPSVNE modules are designed for a frequency of up to 60 Hz.

For motors operating at a frequency higher than 60 Hz, which therefore produce a high frequency remanent voltage, special modules XPSVNE••••HS should be used.

The XPSVN is not compatible with Wound Rotor Motors. These motors are typically used in high HP (1000+) low speed applications, where the additional windings (required for these types of motors) pay for themselves. If power is removed from stator, but rotor is left energized, then transformer coupling between the two could create a small voltage across the stator. This could make the XPSVN think the motor is still turning, which means the safety outputs would never energize or change state. These motors do not have residual magnetism in the rotor that can act as a source of flux for generator effect, in which case the XPSVN may think the motor is at zero speed, and could energize the safety outputs while the motor is still running. Wound Rotor motors are not in common use today, and very rare.

The XPVN is not designed to detect locked rotor conditions. Here the motor still has voltage applied to it, but in essence has zero speed. Generally, a locked rotor condition is not a safe state for machinery nor the operators. The XPSVN will sense voltage applied to the windings, and will not indicate the motor's "apparent" zero speed. The outputs of the XPSVN will not change state, the gates or guards will not be unlocked, and operators will not be allowed access to the unsafe area.

Modules XPSVNE have 2 potentiometers mounted on the front cover of the module which allow independent adjustment of the switching threshold for each input circuit. This allows adjustment for different types of motors and application requirements.

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To aid diagnostics, modules XPSVNE have 4 LEDs and 2 solid-state outputs to provide information on the status of the zero speed detection circuit.

Principles:	Characteristics:	References:	Wiring Diagrams:	Dimensions:
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Characteristics, references

Safety automation system solutions Preventa[™] safety relay modules type XPSVNE For zero speed detection

	ristics			
Module type				XPSVNE
Product designed for max. use in safety related parts of control systems (conforming to EN 954-1/ISO 13849-1)				Category 3 max.
Conformity to standards				EN 60204-1, EN/IEC 60947-5-1, EN 50082-2
Product certifications				UL, CSA, BG
Supply Voltage			v	$ \begin{array}{c} \hline 124 \\ \sim 115 \\ \sim 230 \end{array} $
	Voltage limits			- 15+ 10% (24 V) - 15+ 15% (~ 115 V) - 15+ 10% (~ 230 V)
	Frequency		Hz	50/60 (115 V, 230 V)
Power consum	nption		W	≤ 3.5 (24 V)
			VA	≤ 7.5 (∿115 V), ≤7 (∿ 230 V)
Frequency of r	notor power supply		Hz	≤ 60 Hz (XPSVN●●42), > 60 Hz (XPSVN●●42HS)
Inputs	Maximum voltage between	terminals Z1 - Z2 - Z3	۷	500 rms
	Detection threshold		V	0.01 - 0.1 (adjustable)
Outputs	Voltage reference			Hard contacts
	Number and type of safety circuits			1 N.O. (13-14), 1 N.C. (21-22)
	Number and type of addition	onal circuits		2 solid-state
	Breaking capacity in AC-1	5		C300 (inrush: 1800 VA/maintained: 180 VA)
	Breaking capacity in DC-13			24 V/1.5 A - L/R = 50 ms (contact 13-14)
				24 V/1.2 A - L/R = 50 ms (contact 21-22)
	Breaking capacity of solid-state outputs		A	24 V/20 mA, 48 V/10 mA
		Max. thermal current (Ithe)		2.5
	Output fuse protection		Α	4 gG, conforming to EN/IEC 60947-5-1, DIN VDE 0660 part 200
	Minimum current (volt-free	,	mA	10
	Minimum voltage (volt-free	e contact)	v	17
Electrical life				See page 2
Rated insulation	• • •		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 tem			°F (°C)	+ 14+ 131 (- 10+ 55)
Storage tempe	erature		°F (°C)	- 13+ 185 (- 25+ 85)
Degree of prot		Terminals		IP 20
Conforming to I	EC 60529	Enclosure		IP 40
Connection		Туре		Captive screw clamp terminals, removable terminal block
	1-wire connection	Without cable end		Solid or flexible cable: 24-14 AWG (0.22.5 mm ²)
		With cable end		Without bezel, solid or flexible cable: 24-14 AWG (0.252.5 mm ²)
				With bezel, solid or flexible cable: 24-14 AWG (0.252.5 mm ²)
	2-wire connection	Without cable end		Solid cable: 24-18 AWG (0.21 mm ²), flexible cable: 24-16 AWG (0.21.5 mm ²)
		With cable end		Without bezel, flexible cable: 24-18 AWG (0.251 mm ²)
				With bezel, flexible cable: 22-14 AWG (0.51.5 mm ²)

References



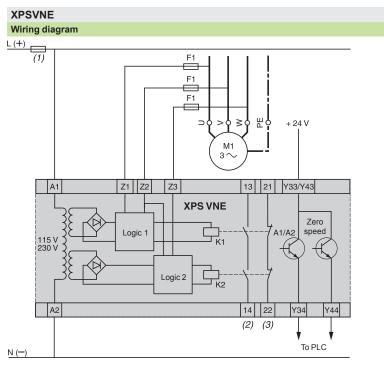
Description	Number of safety circuits	Solid-state outputs for PLC	Supply	Frequency of motor power supply	Reference	Weight oz (kg)
Safety modules for zero speed detection	2	2	 24 V	≤60 Hz	XPSVNE1142P	17.637 (0.500)
				> 60 Hz	XPSVNE1142HSP	17.637 (0.500)
			\sim 115 V	≤60 Hz	XPSVNE3442P	21.164 (0.600)
				> 60 Hz	XPSVNE3442HSP	21.164 (0.600)
			\sim 230 V	≤60 Hz	XPSVNE3742P	21.164 (0.600)
				> 60 Hz	XPSVNE3742HSP	21.164 (0.600)

	Principle page 11	s: Characteristics: page 12	References: page 12	Wiring Diagrams: page 13	Dimensions: page 17	
	12		Schneider Electric			
Courtesy of	of Steven	Engineering, Inc230 Ryan Way, South San Franc	isco, CA 94080-6370-Main	Office: (650) 588-9200-Outside Local	Area: (800) 258-9200-www.stevenengineerin	g.com

Wiring diagrams

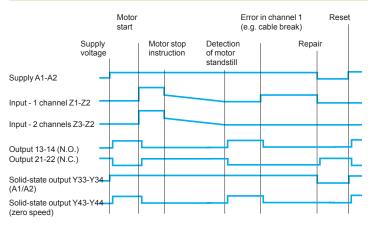
Safety automation system solutions Preventa[™] safety relay modules type XPSVNE

For zero speed detection



(1) Technical characteristics for establishing maximum rating of fuses, see page 12. (2) Contacts are open when motor is running, closed when motor is stopped. (3) Contacts are closed when motor is running, open when motor is stopped. F1 = 2 A

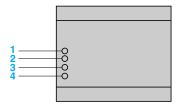
Functional diagram of module XPSVNE



Key 0

The voltages at terminals Z1, Z2 and Z3 are indicated solely for the purposes of schematic diagram representation.

LED details



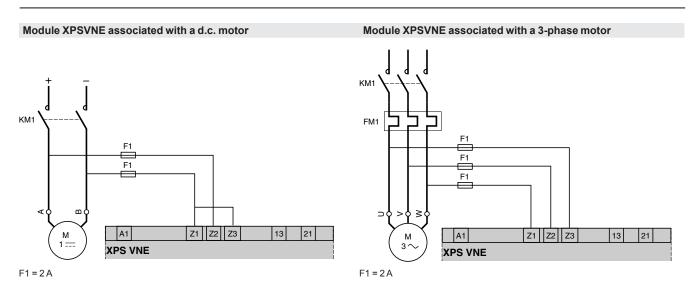
- Supply voltage A1-A2. 1
- Stop detected by channel 1. 2
- 3 Stop detected by channel 2.
- Motor stop condition detected by both channels within time window. 4

13

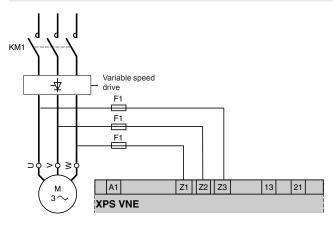
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For zero speed detection

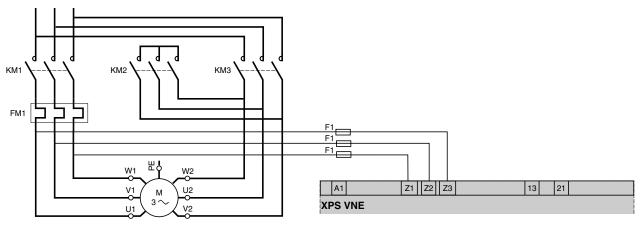


Module XPSVNE associated with a 3-phase motor + variable speed drive



F1 = 2 A

Module XPSVNE associated with a 3-phase motor with start-delta starting



F1 = 2 A KM1: Fast rotation speed KM2: Slow rotation speed

KM3: Star

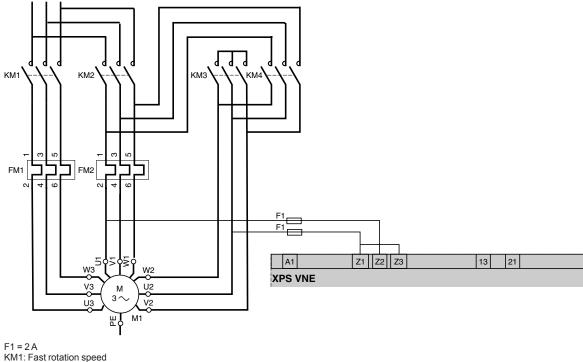
The "Star" contactor (KM3) must be closed after the motor is de-energized, in order to allow detection of zero speed.

Principle	es: Character	ristics: References:	Wiring Diagrams	: Dimensions:
page 11	page 12	page 12	page 13	page 17
14		Schneider		

Safety automation system solutions Preventa[™] safety relay modules type XPSVNE

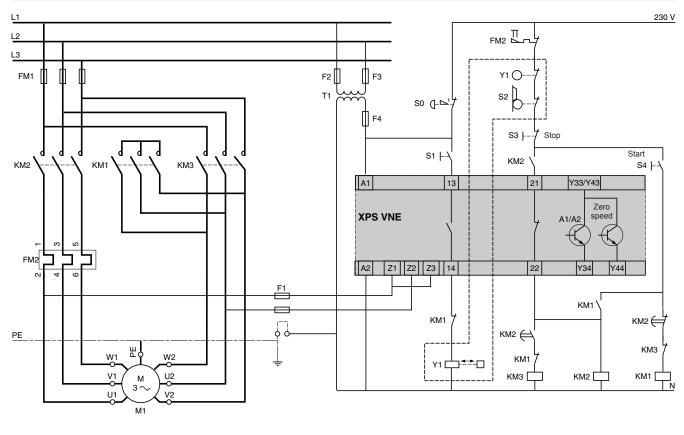
For zero speed detection

Module XPSVNE associated with a 3-phase motor with variable number of poles and star-delta starting



F1 = 2 A KM1: Fast rotation speed KM2: Slow rotation speed KM3: Star KM4: Delta

Module XPSVNE associated with a star-delta motor starter and guard switch type XCS E



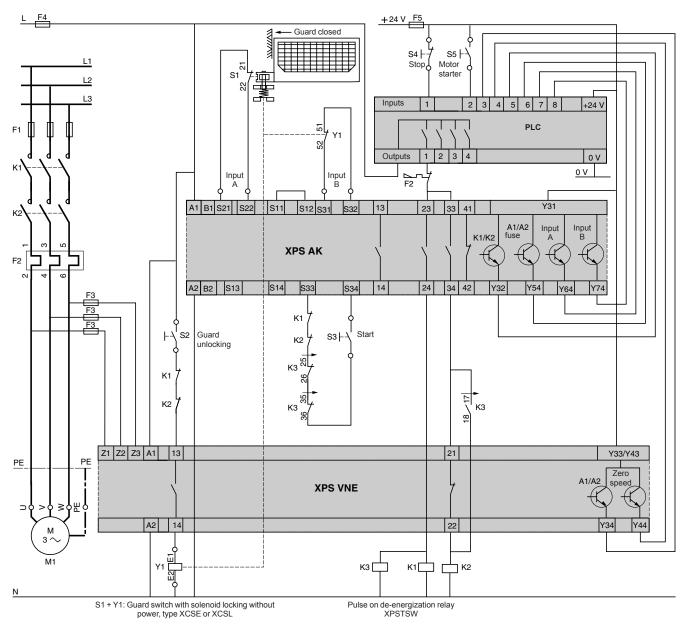
Principles:	Characteristics:	References:	Wiring Diagrams:	Dimensions:
page 11	page 12	page 12	page 13	page 17

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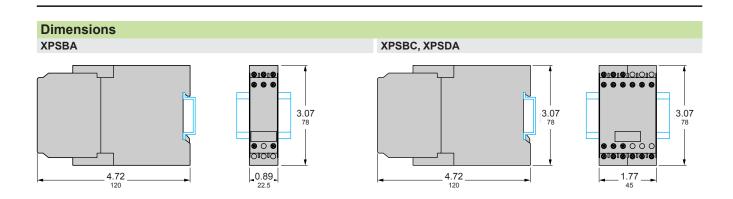
Safety automation system solutions Preventa[™] safety relay modules type XPSVNE For zero speed detection

Association of safety modules XPSVNE and XPSAK

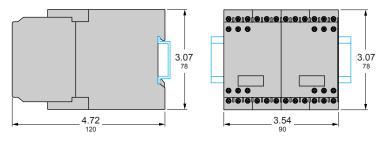


Principle: page 11	s: Characteristics: page 12	References: page 12	Wiring Diagrams: page 13	Dimensions: page 17
10		S aha sida u		

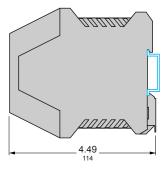
Safety automation system solutions Preventa[™] safety modules AM1 DP200 rail mounting

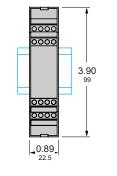


XPSECM, XPSECP

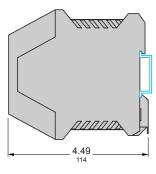


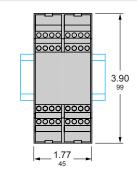
XPSACeeee, XPSAFeeee, XPSAFLeeee, XPSDMBeeee, XPSVC..., XPSBF....



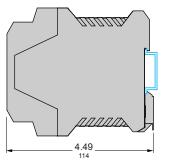


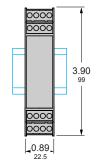
XPSAKeeee, XPSAVeeee, XPSCMeeee, XPSDMEeeee **XPSATE**



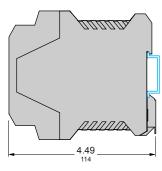


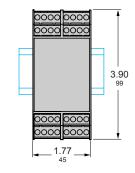
XPSACeeeeP, XPSAFeeePe, XPSAFLeeeeP, XPSDMBeeeeP, XPSVC





XPSAKeeeeP, XPSAVeeeP, XPSCMeeeeP, XPSTSAeeeP, XPSTSWeeeeP, XPSDMEeeeeP, XPSATEeeeeP, XPSVNEeeeeP





INCHES Dual Dimensions: Millimieters

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