

# Product data sheet

Specifications



## Safety module, Harmony Safety Automation, Zero speed monitoring with time delay, 48-240 V AC/DC, screw

XPSUVN31AP

**Product availability : Stock - Normally stocked in distribution facility**

### Main

Range of Product	Harmony Safety Automation
Product or Component Type	Safety module
Safety module name	XPSUVN
Safety module application	For zero speed detection
Function of module	Monitoring 3-phase motor Monitoring 3-phase motor with star-delta starting Monitoring 3-phase motor with variable number of poles Monitoring 3-phase motor with variable number of poles and star-delta starting Monitoring dc motor Monitoring servo motor Monitoring 3-phase motor supplied by variable speed drive Monitoring 3-phase motor supplied by servo drive Controlling enegization to open of guard switch type XCSE, XCSLE, XCSLF, XCST
Safety level	Can reach PL e/category 3 for normally open relay contact ISO 13849-1 Can reach SILCL 3 for normally open relay contact IEC 62061 Can reach SIL 3 for normally open relay contact IEC 61508
Safety reliability data	MTTFd > 30 years ISO 13849-1 Dcavg = 98.9 % ISO 13849-1 PFHd = 2.44E-9 1/h ISO 13849-1 HFT = 1 IEC 62061 PFHd = 2.44E-9 1/h IEC 62061 SFF > 99% IEC 62061 HFT = 1 IEC 61508-1 PFHd = 2.44E-9 1/h IEC 61508-1 SFF > 99% IEC 61508-1 Type = B IEC 61508-1
Product certifications	TÜV cULus
[Us] Rated Supply Voltage	48...240 V AC/DC - 10...10 %
Output type	Relay, 1 NO, volt-free
Number of additional circuits	2 solid state outputs

### Complementary

Power Consumption in W	2.5 W
Power Consumption in VA	5.5 VA
Input voltage	690 V
Input detection threshold	50 mV 65 mV 85 mV 110 mV 140 mV 180 mV

230 mV  
300 mV  
400 mV  
500 mV

<b>Time delay</b>	0.5 s 1 s 2 s 3 s 5 s 8 s 12 s 20 s 35 s 60 s
<b>[Ie] rated operational current</b>	5 A AC-1 3 A AC-15 5 A DC-1 3 A DC-13
<b>[Ith] conventional free air thermal current</b>	6 A NO relay output circuit
<b>Associated fuse rating</b>	6 A gG relay output IEC 60947-1
<b>Standards</b>	IEC 60947-5-1 IEC 61508-1 functional safety standard IEC 61508-2 functional safety standard IEC 61508-3 functional safety standard IEC 61508-4 functional safety standard IEC 61508-5 functional safety standard IEC 61508-6 functional safety standard IEC 61508-7 functional safety standard ISO 13849-1 functional safety standard IEC 62061 functional safety standard
<b>Minimum output current</b>	10 mA relay output
<b>Minimum output voltage</b>	5 V relay output
<b>[Ui] rated insulation voltage</b>	690 V phase to phase 2)EN/IEC 60947-1 400 V phase to earth 2)EN/IEC 60947-1
<b>[Uimp] rated impulse withstand voltage</b>	4 kV II EN/IEC 60947-1
<b>Local signalling</b>	LED green power power ON LED red error error LED yellow state status LED yellow L12 input line comparison LED yellow L32 input line comparison
<b>Connections - terminals</b>	Removable screw terminal block solid or flexible 0.2...2.5 mm <sup>2</sup> Removable screw terminal block flexible with ferrule 0.25...2.5 mm <sup>2</sup> single conductor Removable screw terminal block solid or flexible 0.2...1.5 mm <sup>2</sup> twin conductor Removable screw terminal block flexible with ferrule 2 x 0.25...1 mm <sup>2</sup> without cable end, with bezel Removable screw terminal block flexible with ferrule 2 x 0.5...1.5 mm <sup>2</sup> with cable end, with bezel
<b>Mounting Support</b>	35 mm symmetrical DIN rail
<b>Depth</b>	4.72 in (120 mm)
<b>Height</b>	3.94 in (100 mm)
<b>Width</b>	0.89 in (22.5 mm)
<b>Net weight</b>	0.44 lb(US) (0.2 kg)

## Environment

<b>IP degree of protection</b>	IP20 terminals)EN/IEC 60529 IP40 housing)EN/IEC 60529 IP54 mounting area)EN/IEC 60529
<b>Ambient Air Temperature for Operation</b>	-13...131 °F (-25...55 °C)
<b>Ambient Air Temperature for Storage</b>	-40...158 °F (-40...70 °C)
<b>Relative Humidity</b>	5...95 % non-condensing

## Ordering and shipping details

<b>Category</b>	22477-SAFETY MODULES (PREVENTA)
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Discount Schedule	SAF2
GTIN	3606482034068
Nbr. of units in pkg.	1
Package weight(Lbs)	9.70 oz (275 g)
Returnability	Yes

## Packing Units

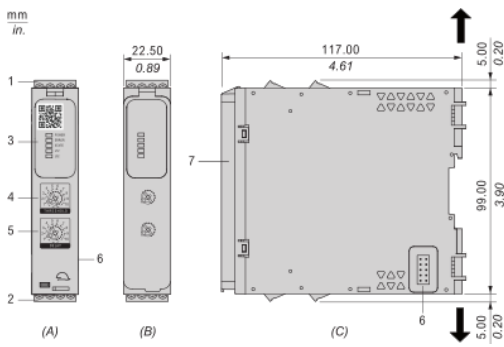
Unit Type of Package 1	PCE
Package 1 Height	2.52 in (6.4 cm)
Package 1 width	5.24 in (13.3 cm)
Package 1 Length	6.02 in (15.3 cm)
Unit Type of Package 2	S03
Number of Units in Package 2	16
Package 2 Weight	11.19 lb(US) (5.075 kg)
Package 2 Height	11.81 in (30 cm)
Package 2 width	11.81 in (30 cm)
Package 2 Length	15.75 in (40 cm)
Package 3 Height	11.81 in (30 cm)

## Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
REACH Regulation	<a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
China RoHS Regulation	<a href="#">China RoHS declaration</a>
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Circularity Profile	<a href="#">End of Life Information</a>
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

**Dimensions**

**Front and Side Views**

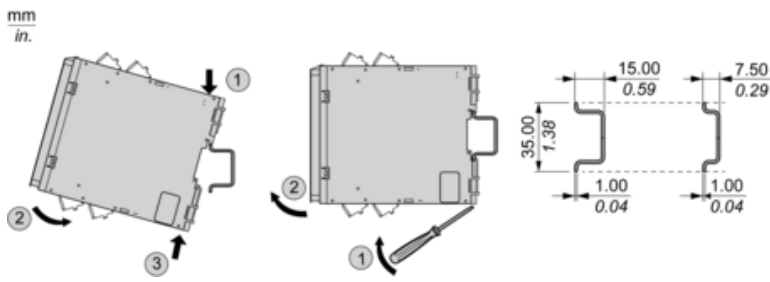


- (A) : Product drawing
- (B) : Screw clamp terminal
- (C) : Side view
- (1) : Removable terminal blocks, top
- (2) : Removable terminal blocks, bottom
- (3) : LED indicators
- (4) : Voltage threshold selector
- (5) : Activation delay selector
- (6) : Connector for optional output extension module XPSUEP (lateral)
- (7) : Sealable transparent cover

mm	7.0-8.0					
in.	0.28-0.31					
	mm <sup>2</sup>	0,2... 2,5	0,25...2,5	0,2...1,5	0,25...1	0,5...1,5
	AWG	24... 12	24...12	24...16	24...18	20...16
		Ø 3,5 mm (0.14 in)			Nm	0.5... 0.6
					lb-in	4,4... 5,3

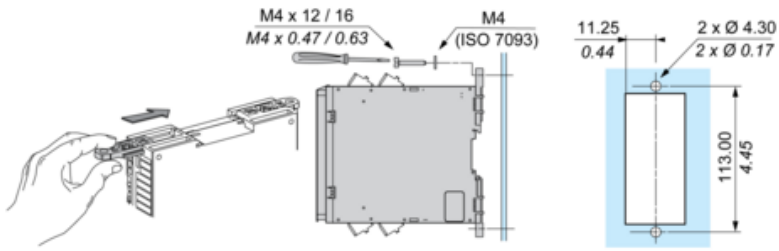
## Mounting to DIN rail

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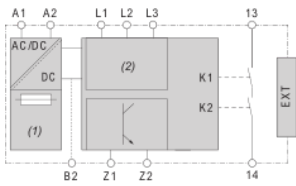
Screw-mounting

mm  
in.



## Wiring Diagram

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**(1)** : A1-A2 (Power supply)

**(2)** : L1-L2-L3 (Input channels of safety-related analog input )

**13-14** : Terminals of the safety-related outputs

**B2** : Terminal for common reference potential for 24 Vdc signals. The power supplies of the connected equipment must have a common reference potential to be connected to this terminal. In the case of XPSUVN31A\*, terminal B2 must be grounded. In the case of XPSUVN11A\*, the safety module is already grounded via the PELV power supply unit connected to terminals A1 and A2.

**Z1** : Pulsed output for diagnostics, not safety-related

**Z2** : Solid state output, not safety-related

**EXIT** : Connector for output extension module XPSUEP

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