

# Product data sheet

Specifications



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

XPSUVN31AC

### 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 for normally open relay contact 3 A AC-15 for normally open relay contact 5 A DC-1 for normally open relay contact 3 A DC-13 for normally open relay contact
<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 spring terminal block solid or flexible 0.2...2.5 mm <sup>2</sup> Removable spring terminal block flexible with ferrule 0.25...2.5 mm <sup>2</sup> single conductor Removable spring terminal block solid or flexible 0.2...1.5 mm <sup>2</sup> twin conductor Removable spring terminal block flexible with ferrule 2 x 0.25...1 mm <sup>2</sup> without cable end, with bezel Removable spring 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>Product weight</b>	0.44 lb(US) (0.2 kg)
<b>Environment</b>	
<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
<b>Packing Units</b>	
<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1

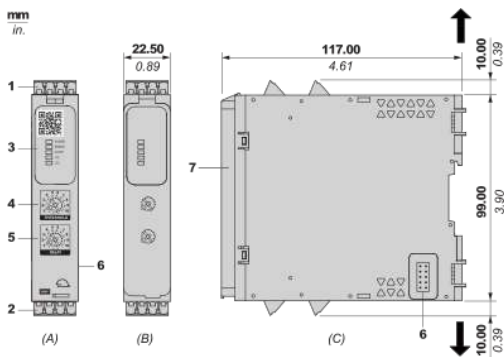
<b>Package 1 Height</b>	2.68 in (6.8 cm)
<b>Package 1 Width</b>	5.43 in (13.8 cm)
<b>Package 1 Length</b>	6.22 in (15.8 cm)
<b>Package 1 Weight</b>	9.77 oz (277.0 g)
<b>Unit Type of Package 2</b>	S03
<b>Number of Units in Package 2</b>	16
<b>Package 2 Height</b>	11.81 in (30 cm)
<b>Package 2 Width</b>	11.81 in (30 cm)
<b>Package 2 Length</b>	15.75 in (40 cm)
<b>Package 2 Weight</b>	11.37 lb(US) (5.158 kg)
<b>Package 3 Height</b>	31.50 in (80 cm)

## Offer Sustainability






<b>Sustainable offer status</b>	Green Premium product
<b>REACH Regulation</b>	<a href="#">REACH Declaration</a>
<b>EU RoHS Directive</b>	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
<b>Mercury free</b>	Yes
<b>China RoHS Regulation</b>	<a href="#">China RoHS declaration</a>
<b>RoHS exemption information</b>	Yes
<b>Environmental Disclosure</b>	<a href="#">Product Environmental Profile</a>
<b>Circularity Profile</b>	<a href="#">End of Life Information</a>
<b>WEEE</b>	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

**Dimensions**

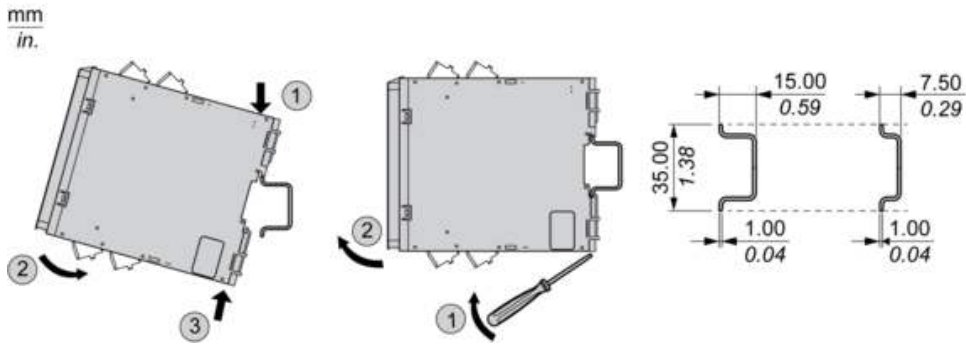
**Front and Side Views**



- (A) : Product drawing
- (B) : Spring 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

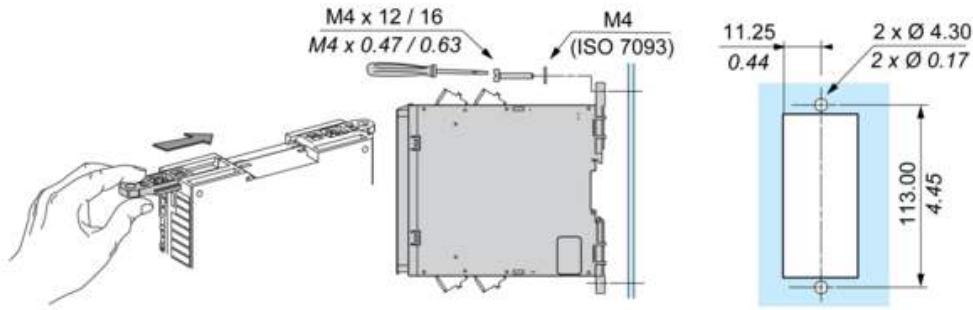
mm in.	12.0 0.47					
mm <sup>2</sup>		0,2...2,5	0,25...2,5	0,2...1,5	0,25...1	0,5...1,5
AWG		24...12	24...12	24...16	24...18	20...16

Mounting to DIN rail



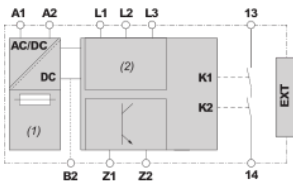
Screw-mounting

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

## Recommended replacement(s)