PSR-MM35-1NO-1DO-24DC-SC - Safety relay module

1249515

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Safety relay module for sensor-free speed and speed range monitoring up to SIL 3, Cat. 4, PL e, 2-channel evaluation of the rotating field of AC and three-phase motors, plug-in screw terminal block, width: 12.5 mm

Your advantages

- Safe motion monitoring based on sensor-free rotating field measurement of the drive
- Maximum system availability, robust measuring procedure in the face of interference factors such as shock, vibration, and EMI
- Integrated safety functions: SLS (Safe Limited Speed), SSM (Safe Speed Monitor), SSR (Safe Speed Range)
- Easy parameterization and online monitoring with the PSRmotion software, which can be downloaded free of charge
- 1 enabling current path, 1 parameterizable digital signal output
- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061

Commercial data

Item number	1249515
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DNA242
Product key	DNA242
GTIN	4063151353643
Weight per piece (including packing)	156.2 g
Weight per piece (excluding packing)	148 g
Customs tariff number	90328900
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

Product properties

Product type	Safety device
Application	Over-speed safety relay
Control	2-channel
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Overvoltage category	II (600 V)
	III (300 V)
	III
Degree of pollution	2

Times

Typical response time	70 ms (For U_s autostart)
	70 ms (For U_s manual, monitored start)
Delay time range	0 s ... 2 s ±10 % (Switch-off delay)
	0 s ... 10 s ±10 % (Switch-on delay)
Restart time	< 5 s (Boot time)
Start pulse length	≤ 2 s (manual start)
	≥ 200 ms (manual start)

Electrical properties

Maximum power dissipation for nominal condition	3 W (At U_S = 26.4 V, I_L^2 = 6 A²)
Nominal operating mode	100% operating factor
Interfaces	Without sensor
Rated insulation voltage	300 V (ÜKAT III)
	600 V (ÜKAT II)
Rated surge voltage/insulation	Basic insulation 4 kV between all current paths and housing
	Safe isolation, reinforced insulation 6 kV: between 13/14 and A1/A2, S34, MO
	Safe isolation, reinforced insulation 8 kV: between L1/L2/L3 and A1, A2, S34, MO between L1/L2/L3 and 13/14

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	20.4 V DC ... 26.4 V DC
Rated control circuit supply voltage U_S	24 V DC -15 % / +10 % (provide external protection)

Rated control supply current I_S	46 mA
Power consumption at U_S	1.1 W
Filter time	20 ms (in the event of voltage dips at U_s)
Protective circuit	Surge protection; Suppressor diode
Protection	1 A (slow-blow)

Input data

Digital: Digital input

Description of the input	IEC 61131-2 type 1
Number of inputs	1 (Non-safety-related parameterizable acknowledgment input: S34)
Input voltage range "0" signal	0 V DC ... 5 V DC
Input voltage range "1" signal	15 V DC ... 30 V DC
Input current range "0" signal	0 mA ... 0.5 mA
Filter time	20 ms (Test pulse width of low test pulses)
Max. permissible overall conductor resistance	500 Ω (Input and reset circuit at U_S)
Protective circuit	33 V suppressor diode
Current consumption	typ. 3 mA (at 24 V)

Measurement

Input name	Sensor inputs
Number of inputs	3 (Safety-related sensor inputs: L1 , L2 , L3)
Input voltage range "1" signal	90 V AC ... 690 V AC
Precision	± 1 %
Limit frequency	min. 0.5 Hz
	max. 1200 Hz
Current consumption	0.35 mA

Output data

Relay: Enabling current path

Output description	2 N/O contacts in series, floating
Number of outputs	1 (safety-related N/O contacts: 13/14)
Contact switching type	1 enabling current path
Contact material	$AgSnO_2$
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC
Switching capacity	min. 60 mW
Inrush current	min. 3 mA
	max. 6 A
Limiting continuous current	6 A
Sq. Total current	36 A^2 (observe derating)
Switching frequency	max. 0.1 Hz
Mechanical service life	10x 10^6 cycles
Output fuse	6 A gL/gG

Signal

Output description	PNP
Number of outputs	1 (Non-safety-related signal output: MO)
Voltage	23 V DC (U_S - 1 V)
Current	max. 100 mA
Maximum inrush current	500 mA
Ohmic load	min. 240 Ω
Switching frequency	0.5 Hz (ohmic)
Protective circuit	Reverse polarity protection 33 V suppressor diode
Short-circuit protection	Yes
Discharging circuit	Yes, internal

Connection data

Connection technology

pluggable	yes

Conductor connection

Connection method	Screw connection
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Signaling

Status display	1 x green, red LED (OUT)
Operating voltage display	1 x green, red LED (PWR)
Error indication	Red LED, (flashes in the event of short-circuits or overload)

Dimensions

Width	12.5 mm
Height	112.2 mm
Depth	114.5 mm

Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PA

Characteristics

Safety data

Stop category	0

Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3

Safety data

Safety Integrity Level (SIL)	3

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

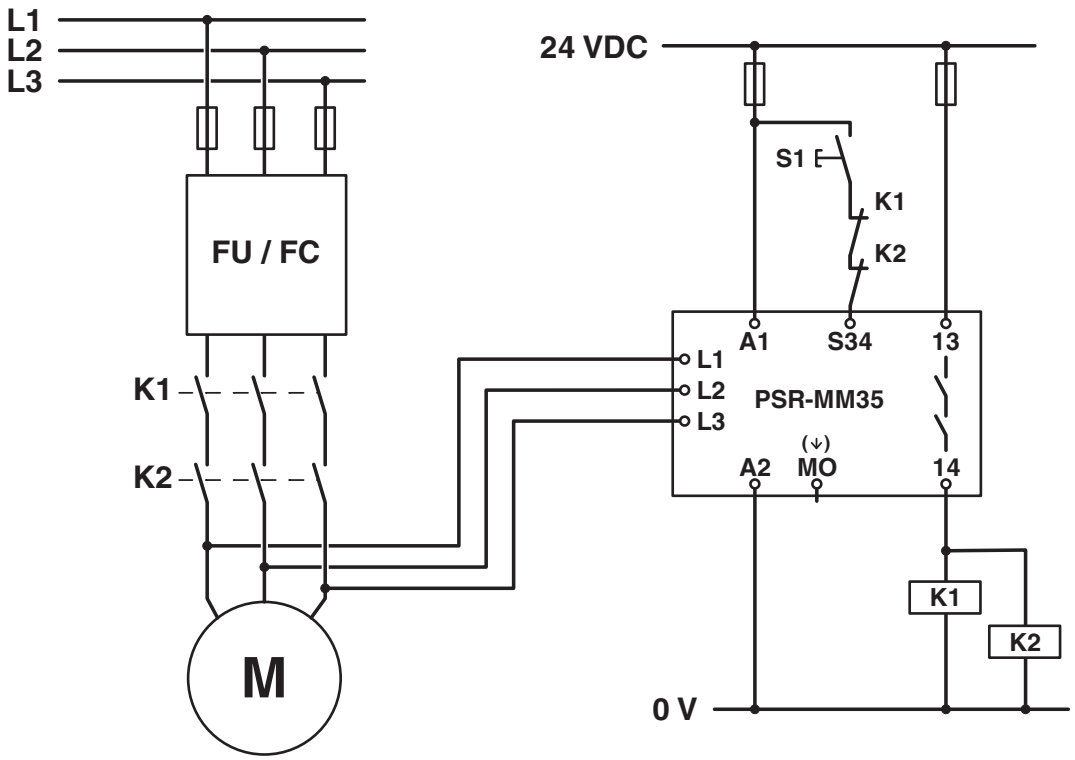
Certificate	CE-compliant

Mounting

Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

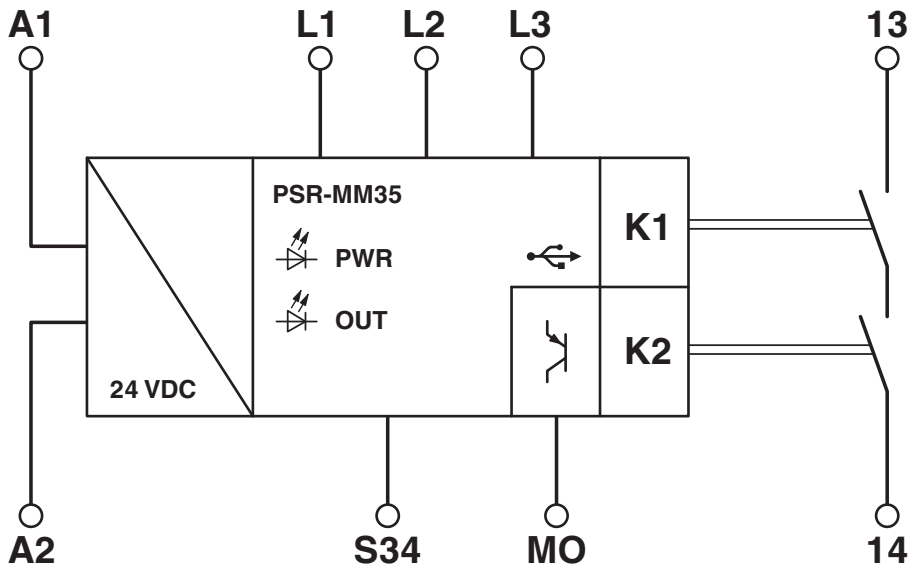
Drawings

Circuit diagram



Example application

Block diagram



Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/au/products/1249515

Functional Safety
Approval ID: 01/205/5879.01/24

UL Listed
Approval ID: E140324

cUL Listed
Approval ID: E140324

Classifications

ECLASS

ECLASS-13.0	27371811

ETIM

ETIM 9.0	EC001448

UNSPSC

UNSPSC 21.0	39122300

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead titanium zirconium oxide(CAS: 12626-81-2)
	Lead(CAS: 7439-92-1)
SCIP	1c579db6-00b8-464d-a7a6-8b4852aabe92

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