

# Safety device - PSR-MM25-1NO-2DO-24DC-SP - 2702356

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Safety relay module for sensorless standstill monitoring for 3- and 1-phase motors to SILCL 3, cat. 3, PL e, two-channel evaluation of the residual voltage of AC, three-phase, and DC motors, plug-in spring-cage terminal block, width: 12.5 mm

The figure shows a version with a screw connection

## Your advantages

- Monitoring of 1 and 3-phase AC or DC motors
- No additional sensors required
- Adjustable delay time from 0.5 s ... 20 s
- Adjustable switching threshold from 50 mV... 500 mV
- 1 enabling current path, 2 digital signal outputs
- Low housing width of just 12.5 mm
- Up to Cat.3/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061



## Key commercial data

<b>package_quantity</b>	1
<b>GTIN</b>	4055626133218

## Technical data

### Note

<b>Utilization restriction</b>	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

<b>Width</b>	12.5 mm
<b>Height</b>	116.6 mm
<b>Depth</b>	114.5 mm

### Ambient conditions

<b>Ambient temperature (operation)</b>	-20 °C ... 55 °C (observe derating)
<b>Ambient temperature (storage/transport)</b>	-40 °C ... 85 °C
<b>Max. permissible relative humidity (operation)</b>	75 % (on average, 85% infrequently, non-condensing)
<b>Max. permissible humidity (storage/transport)</b>	75 % (on average, 85% infrequently, non-condensing)
<b>Shock</b>	15g

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## Technical data

### Ambient conditions

Vibration (operation)	10 Hz ... 150 Hz, 2g
Maximum altitude	max. 2000 m (Above sea level)

### Input data

Rated control circuit supply voltage $U_s$	24 V DC -15 % / +10 %
Rated control supply current $I_s$	typ. 50 mA
Power consumption at $U_s$	typ. 1.2 W
Inrush current	5.6 A ( $\Delta t = 400 \mu s$ at $U_s$ )
Current consumption	max. 0.35 mA (at L1/L2/L3)
Typ. starting time with $U_s$	< 1 s
Status display	4 x LED Bi-Colour
Maximum switching frequency	0.5 Hz
Filter time	1 ms (at A1 in the event of voltage dips at $U_s$ )
Limit frequency	max. 3 kHz (At voltages > 2 $V_{RMS}$ )

### Output data

Contact type	1 enabling current path
Contact material	AgSnO <sub>2</sub>
Minimum switching voltage	24 V AC/DC
Maximum switching voltage	250 V AC/DC (Observe the load curve)
Limiting continuous current	5 A (observe derating)
Inrush current, minimum	3 mA
Maximum inrush current	5 A
Sq. Total current	25 A <sup>2</sup> (observe derating)
Switching capacity	min. 72 mW
Output fuse	5 A gL/gG (N/O contact)
Response time	typ. 20 ms (at 50 Hz input frequency)

### Alarm outputs

Number of outputs	2 (digital, PNP)
Voltage	23 V DC ( $U_s - 1 V$ )
Current	max. 100 mA
Maximum inrush current	500 mA
Short-circuit protection	Yes

### General

Mechanical service life	10 x 10 <sup>6</sup> cycles
Nominal operating mode	100% operating factor
Net weight	146.7 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical or horizontal
Degree of protection	IP20

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## Technical data

### General

<b>Min. degree of protection of inst. location</b>	IP54
<b>Control</b>	Two-channel
<b>Housing material</b>	PBT
<b>Housing color</b>	yellow
<b>Interfaces</b>	Without sensor

### Connection data

<b>Connection method</b>	Spring-cage connection
<b>pluggable</b>	Yes
<b>Conductor cross section solid min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	1.5 mm <sup>2</sup>
<b>Conductor cross section flexible min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section flexible max.</b>	1.5 mm <sup>2</sup>
<b>Conductor cross section AWG min.</b>	24
<b>Conductor cross section AWG max.</b>	16
<b>Stripping length</b>	8 mm

### Safety-related characteristic data

<b>Stop category</b>	0
<b>Designation</b>	IEC 61508 - High demand
<b>Safety Integrity Level (SIL)</b>	3 (4 A DC13; 5 A AC15; 17520 switching cycles/year)
<b>Designation</b>	EN ISO 13849
<b>Performance level (PL)</b>	e (4 A DC13; 5 A AC15; 17520 switching cycles/year)
<b>Category</b>	3
<b>Designation</b>	EN 62061
<b>Safety Integrity Level Claim Limit (SIL CL)</b>	3 (4 A DC13; 5 A AC15; 17520 switching cycles/year)

### Standards and Regulations

<b>Shock</b>	15g
<b>Designation</b>	Air clearances and creepage distances between the power circuits
<b>Standards/regulations</b>	DIN EN 50178
<b>Rated insulation voltage</b>	250 V AC
<b>Rated insulation voltage</b>	250 V AC
<b>Rated surge voltage/insulation</b>	Basic insulation 4 kV:between all current paths and housing Safe isolation, reinforced insulation 6 kV:between A1/A2 and 13/14 between MO/FO and 13/14 Safe isolation, reinforced insulation 8 kV:between L1/L2/L3 and A1/A2 between L1/L2/L3 and MO/FO between L1/L2/L3 and 13/14
<b>Degree of pollution</b>	2
<b>Overvoltage category</b>	III
<b>Vibration (operation)</b>	10 Hz ... 150 Hz, 2g
<b>Conformance</b>	CE-compliant

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## Classifications

### eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371811
eCl@ss 9.0	27371811

### ETIM

ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001448
ETIM 6.0	EC001448

### UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39122331

## Approvals

UL Listed / cUL Listed / Functional Safety / Functional Safety / cULus Listed /

### Approval details

UL Listed

cUL Listed

Functional Safety

cULus Listed

## Accessories

### Connector

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### Accessories

C-RCI 2,5/M4 - 3240023



C-RCI 2,5/M6 - 3240025



C-RCI 2,5/M8 - 3240026



C-RC 2,5/M3,5 DIN - 3240077



C-RC 2,5/M5 DIN - 3240079



C-RC 2,5/M6 DIN - 3240080



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## Accessories

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C-RC 2,5/M8 DIN - 3240081

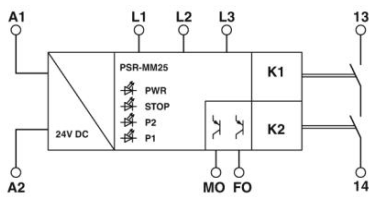


C-RC 2,5/M10 DIN - 3240082

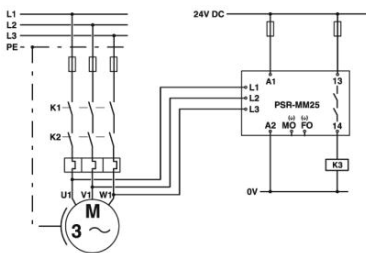


## Drawings

### Block diagram



### Circuit diagram



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