

PSR-MC38-2NO-1DO-24DC-PI - Safety relays



1009832

<https://www.phoenixcontact.com/us/products/1009832>

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Safety relay for emergency stop, safety doors and light grids up to SIL 3, Cat. 4, PL e, 1- or 2-channel operation, automatic or manual, monitored start, 2 enabling current paths, 1 signal output, TBUS interface, $U_S = 24$ V DC, pluggable push-in terminal

Your advantages

- Up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- 1- and 2-channel control
- 2 enabling current paths, 1 digital signal output
- For emergency stop and safety door monitoring, plus evaluation of light grids
- TBUS interface for connecting CONTACTRON hybrid motor starters and MINI POWER power supplies

Commercial data

Item number	1009832
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA181
GTIN	4055626482712
Weight per piece (including packing)	201.9 g
Weight per piece (excluding packing)	169.38 g
Customs tariff number	85371098
Country of origin	DE

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Technical data

Notes

Note on application

Note on application

Only for industrial use

Product properties

Product type	Safety relays
Product family	PSRmini
Application	Emergency stop Safety door Light grid Magnetic switch Transponder
Control	1 and 2 channel
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Ovvoltage category	III
Degree of pollution	2

Times

Typical response time	30 ms (manual, monitored start) 200 ms (automatic start)
Typ. starting time with U_s	200 ms (when controlled via A1)
Typical release time	25 ms (when actuation is via the sensor circuit) 60 ms (when controlled via A1)
Restart time	< 1 s (Boot time)
Recovery time	< 500 ms

Electrical properties

Maximum power dissipation for nominal condition	16.6 W (at $U_s = 26.4$ V, $I_L^2 = 72$ A 2)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V
Rated surge voltage/insulation	See data sheet, section "Insulation coordination".

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	typ. 75 mA
Power consumption at U_s	typ. 1.8 W
Inrush current	< 4 A ($\Delta t = 3$ ms at U_s)
Filter time	20 ms (at A1 in the event of voltage dips at U_s)

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Protective circuit

Serial protection against polarity reversal; Suppressor diode

Input data

Digital: Sensor circuit (S10, S12, S13, S22)

Description of the input	safety-related sensor inputs
Number of inputs	4
Input voltage range "1" signal	20.4 V DC ... 26.4 V DC
Inrush current	< 40 mA (typ. with U_S at S10) < 300 mA (typ. with U_S at S12, $\Delta t = 150$ ms) < 3 mA (typ. with U_S at S13) > -300 mA (typ. with U_S at S22, $\Delta t = 150$ ms)
Filter time	2 ms (At S10, S12, S13; test pulse width of low test pulses) 1 s (At S10, S12, S13; test pulse rate of low test pulses) No brightness test pulses / high test pulses permitted.
Concurrence	∞
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	40 mA (typ. with U_S at S10) 45 mA (typ. with U_S at S12) 3 mA (typ. with U_S at S13) -35 mA (typ. with U_S at S22, $\Delta t = 150$ ms)

Digital: Start circuit (Y1, S34, S35)

Description of the input	non-safety-related
Input voltage range "1" signal	20.4 V DC ... 26.4 V DC
Inrush current	< 60 mA (typ. with U_S at Y1, $\Delta t = 150$ ms) < 270 mA (typ. with U_S at S34, $\Delta t = 15$ ms) < 80 mA (typ. with U_S at S35, $\Delta t = 25$ ms)
Filter time	No darkness test pulses / low test pulses permitted. No brightness test pulses / high test pulses permitted.
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	typ. 10 mA (typ. with U_S at Y1) typ. 34 μ A (typ. with U_S at S35)

Output data

Relay: Enabling current path (13/14, 23/24)

Output description	safety-related N/O contacts
Number of outputs	2 NO contacts each in series, without delay, floating
Contact switching type	2 (undelayed)
Contact material	2 enabling current paths
Switching voltage	AgSnO ₂
	min. 10 V AC/DC
	max. 250 V AC/DC (Observe the load curve)

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Switching power	min. 100 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	5 A (24 V (DC13)) 5 A (250 V (AC15))
Limiting continuous current	6 A
Sq. Total current	72 A ² (observe derating)
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	10 A gL/gG 4 A gL/gG (for low-demand applications)

Signal: Y30

Output description	PNP non-safety-related
Number of outputs	1
Voltage	approx. 23.9 V DC (U _s - 0.1 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 1 ms at U _s)
Protective circuit	Suppressor diode

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 14
Stripping length	10 mm

Signaling

Status display	4 x LED (green)
Operating voltage display	1 x LED (green)

Dimensions

Width	22.5 mm
Height	117.5 mm
Depth	114.5 mm

Material specifications

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

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Characteristics

Safety data

Stop category	0
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Safety data: EN ISO 13849

Category	4 (5 A DC13; 5 A AC15; 8760 switching cycles/year)
Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3
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Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3
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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 ... 70 °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

Identification	CE-compliant
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Mounting

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

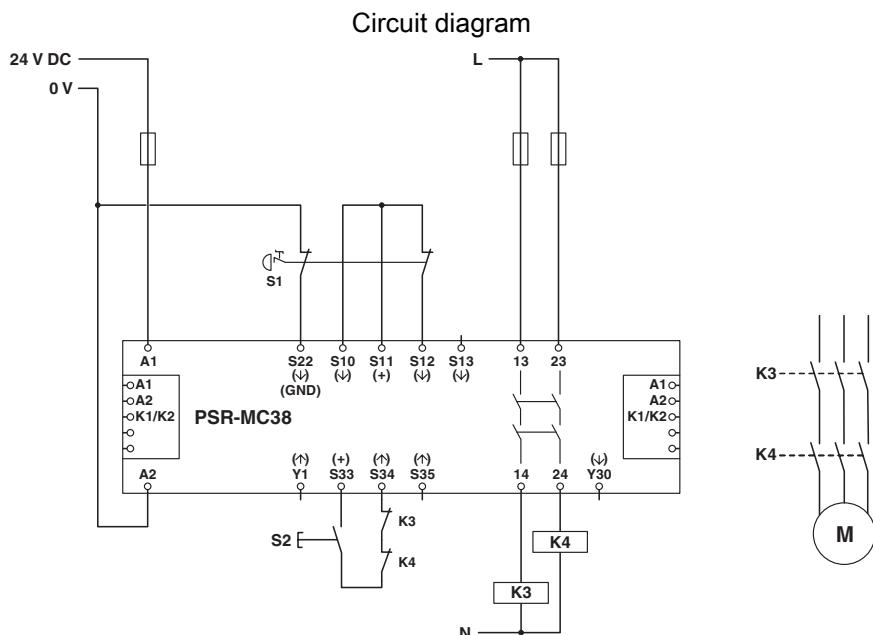
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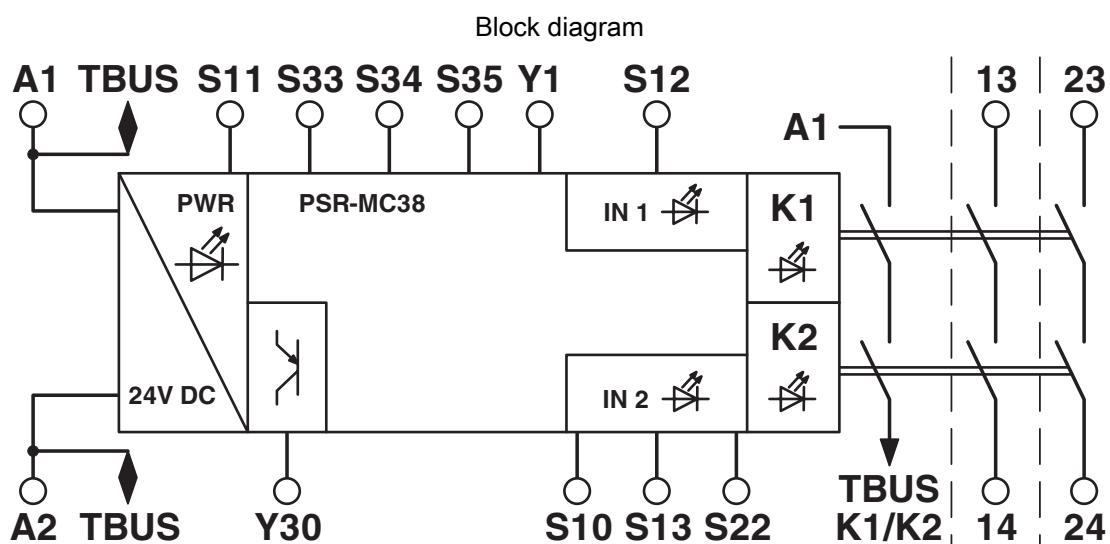
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Drawings



Example application



Block diagram

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Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1009832>



cULus Listed

Approval ID: E140324



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Approval ID: E140324



Functional Safety

Approval ID: 01/205/5651.02/24



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Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819
ECLASS-15.0 ASSET	27250101

ETIM

ETIM 9.0	EC001449
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UNSPSC

UNSPSC 21.0	39122200
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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(CAS: 7439-92-1)
SCIP	1e4df946-7ee5-4c2b-a4eb-460a3b26a1ed

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