

## Safety relays - PSR-SCP- 24DC/SDC4/2X1/B - 2981486

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Safety relay for emergency stop, safety door, and magnetic switches, as well as light grid, up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, 2 N/O contacts, TBUS interface, automatic or manual activation, plug-in screw connection terminal blocks

### Why buy this product

- ✓ Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- ✓ Single and two-channel control
- ✓ 2 enabling current paths, 1 signaling current path
- ✓ For emergency stop and safety door monitoring, plus evaluation of light grids
- ✓ Modular system with TBUS extension



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 051682
GTIN	4046356051682

### Technical data

#### Note

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

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

#### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)

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## Technical data

### Ambient conditions

Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Maximum altitude	≤ 2000 m (Above sea level)

### Input data

Nominal input voltage $U_N$	24 V DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	70 mA
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	20 ms (manual start) 150 ms (automatic start)
Typical release time	10 ms
Recovery time	1 s
Max. permissible overall conductor resistance	50 Ω (Input and start circuits at $U_N$ )

### Output data

Contact type	2 enabling current paths 1 semiconductor signaling output
Contact material	AgSnO <sub>2</sub>
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	15 V AC/DC
Limiting continuous current	6 A (N/O contact) 100 mA (signal output)
Maximum inrush current	6 A
Inrush current, minimum	25 mA
Sq. Total current	$72 A^2 (I_{TH}^2 = I_1^2 + I_2^2)$
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms) 288 W (48 V DC, τ = 0 ms) 77 W (110 V DC, τ = 0 ms) 88 W (220 V DC, τ = 0 ms) 1500 VA (250 V AC, τ = 0 ms)
Maximum interrupting rating (inductive load)	48 W (24 V DC, τ = 40 ms) 40 W (48 V DC, τ = 40 ms) 35 W (110 V DC, τ = 40 ms) 33 W (220 V DC, τ = 40 ms)
Switching capacity min.	0.4 W
Mechanical service life	approx. 10 <sup>7</sup> cycles
Switching capacity (360/h cycles)	6 A (24 V DC) 5 A (230 V (AC15))
Output fuse	10 A gL/gG NEOZED (N/O contact) Miniature circuit breaker C6 (24 V / 20 A power supply unit)

### General

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## Technical data

### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Nominal operating mode	100% operating factor
Net weight	224.8 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
	IP54
Min. degree of protection of inst. location	IP54
Housing color	yellow

### Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm
Screw thread	M3

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4 (Undelayed contacts)
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

### Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / Basic isolation, (safe isolation, reinforced insulation and 6 kV between input circuit and enabling current paths.)
Degree of pollution	2
Overvoltage category	III

# Safety relays - PSR-SCP- 24DC/SDC4/2X1/B - 2981486

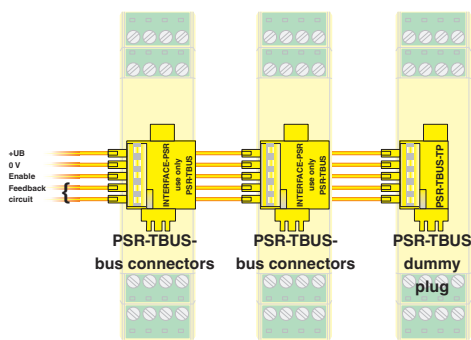
## Technical data

### Environmental Product Compliance

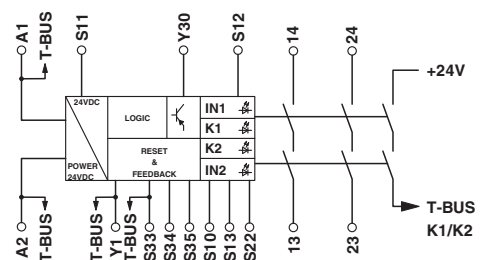
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Connection diagram

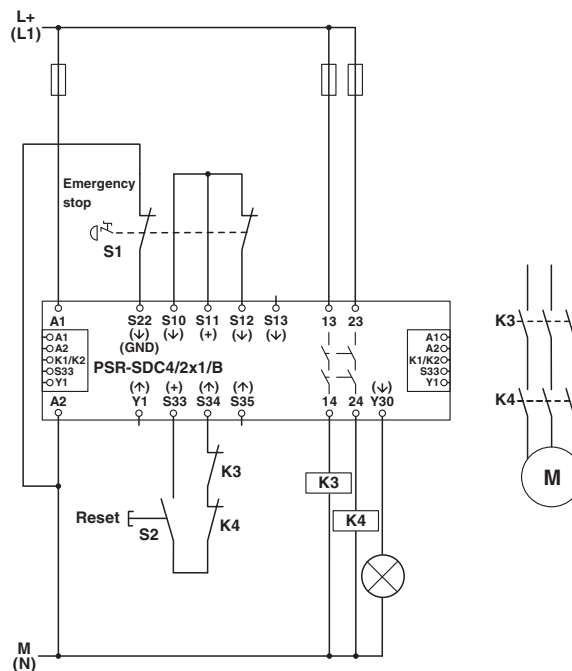


Circuit diagram



PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

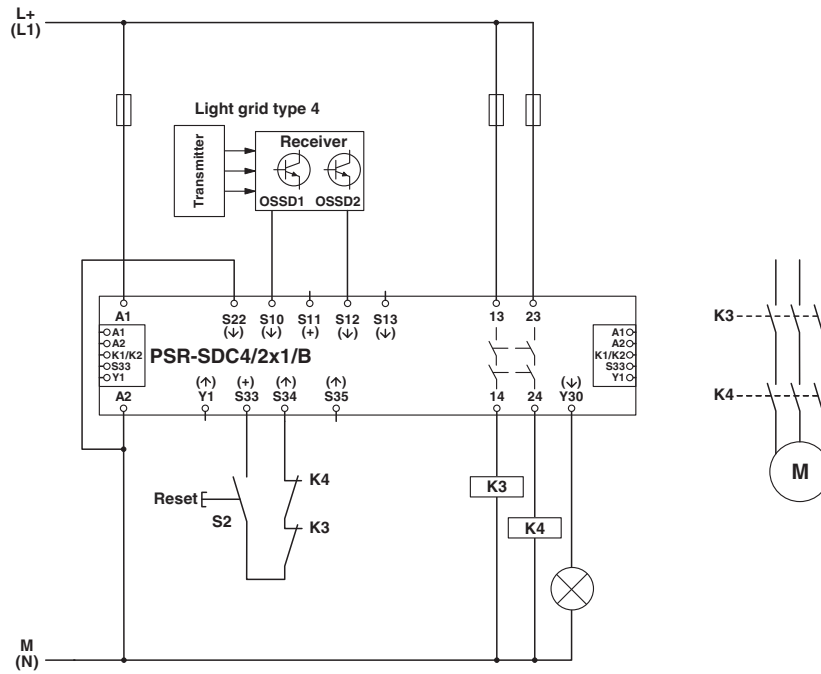
Circuit diagram



Two-channel emergency stop monitoring

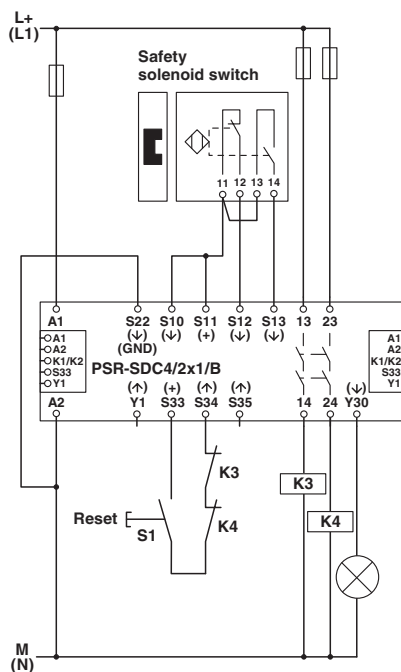
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Circuit diagram



Light grid monitoring

Circuit diagram



Two-channel magnetic switch monitoring

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## Approvals

### Approvals

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

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#### Ex Approvals

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### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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Functional Safety			968/EZ 369.02/15
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EAC			EAC-Zulassung
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Functional Safety			01/205/0660.01/15
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EAC			RU C- DE.A*30.B.01082
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Functional Safety			968/EZ 369.02/15
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cULus Listed			
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