

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



2981486

<https://www.phoenixcontact.com/us/products/2981486>

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

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
- Modular system with TBUS extension
- For emergency stop and safety door monitoring, plus evaluation of light grids
- 2 enabling current paths, 1 signaling current path
- 1- and 2-channel control

Commercial data

Item number	2981486
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA211
GTIN	4046356051682
Weight per piece (including packing)	185.8 g
Weight per piece (excluding packing)	224.8 g
Customs tariff number	85371098
Country of origin	DE

Technical data

Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
	Light grid
	Magnetic switch
Control	1 and 2 channel
Mechanical service life	approx. 10^7 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Overvoltage category	III
Degree of pollution	2

Times

Typical response time	20 ms (manual start)
	150 ms (automatic start)
Typical release time	10 ms
Recovery time	1 s

Electrical properties

Maximum power dissipation for nominal condition	1.68 W
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, PSR-TBUS
Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Rated control supply current I_S	typ. 70 mA
Power consumption at U_S	typ. 1.7 W
Protective circuit	Serial protection against polarity reversal
	Suppressor diode

Input data

Digital: S10, S12, S13, S22

Description of the input	safety-related
Max. permissible overall conductor resistance	50 Ω (Input and start circuits at U_S)
Protective circuit	Suppressor diode

Output data

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

Output description	2 N/O contacts in series, safety-related, floating
Number of outputs	2
Contact switching type	2 enabling current paths
Contact material	AgSnO ₂
Switching voltage	max. 250 V AC/DC min. 15 V AC/DC
Switching power	min. 0.4 W
Inrush current	min. 25 mA max. 6 A
Switching capacity (360/h cycles)	5 A (AC15)
Switching capacity (3600/h cycles)	3 A (AC15) 3 A (DC13)
Limiting continuous current	6 A
Sq. Total current	72 A ² (observe derating)
Mechanical service life	10x 10 ⁶ cycles
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)
Output fuse	10 A gL/gG NEOZED

Signal: Y30

Output description	PNP non-safety-related
Number of outputs	1
Voltage	typ. 23 V DC (U _S - 1 V)
Current	max. 100 mA

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Screw 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 ... 12
Stripping length	7 mm

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Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

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

Characteristics

Safety data

Stop category (EN 60204-1)	0
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Safety data: EN ISO 13849

Performance level (PL)	e
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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
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)

Approvals

CE

Identification	CE-compliant
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Mounting

Mounting type	DIN rail mounting
Mounting position	any

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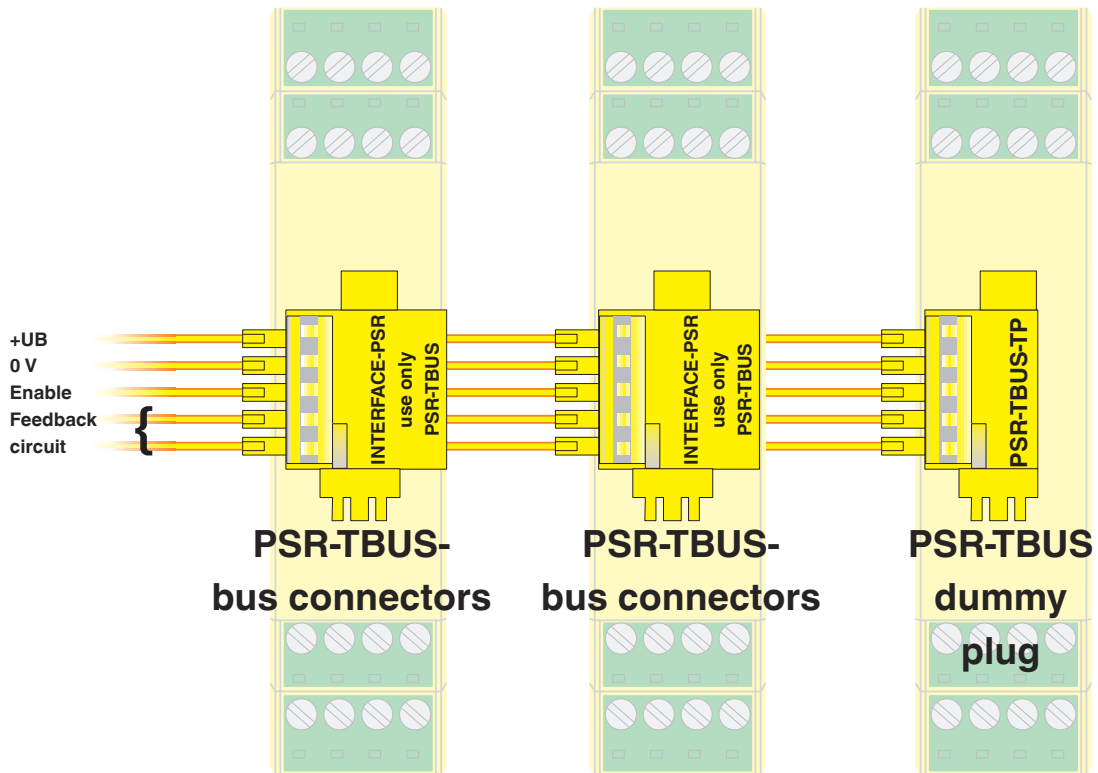


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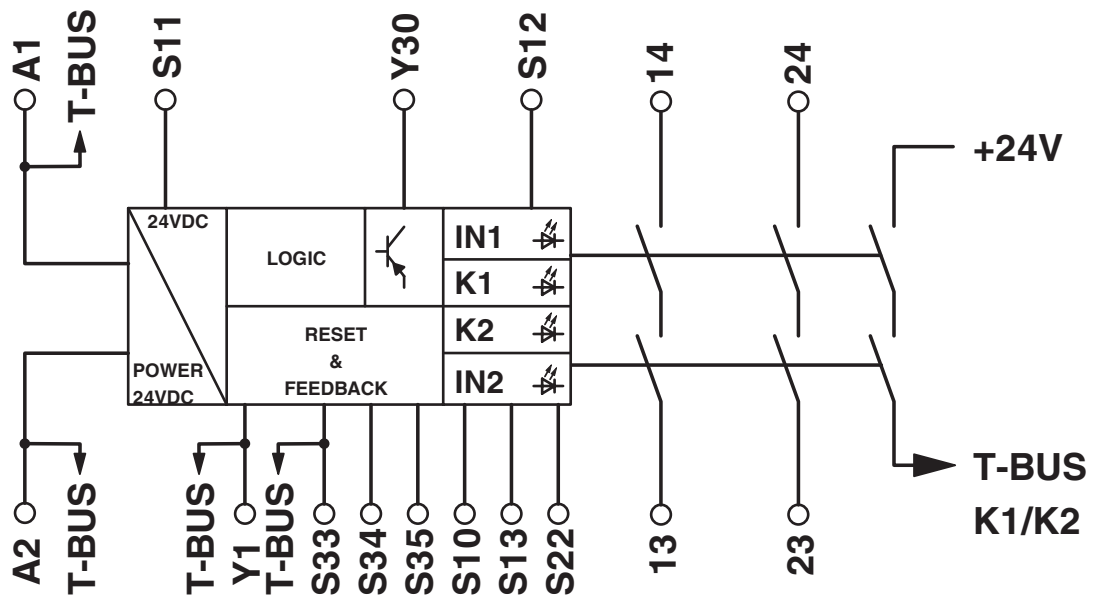
Drawings

Connection diagram



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

Circuit diagram



Block diagram

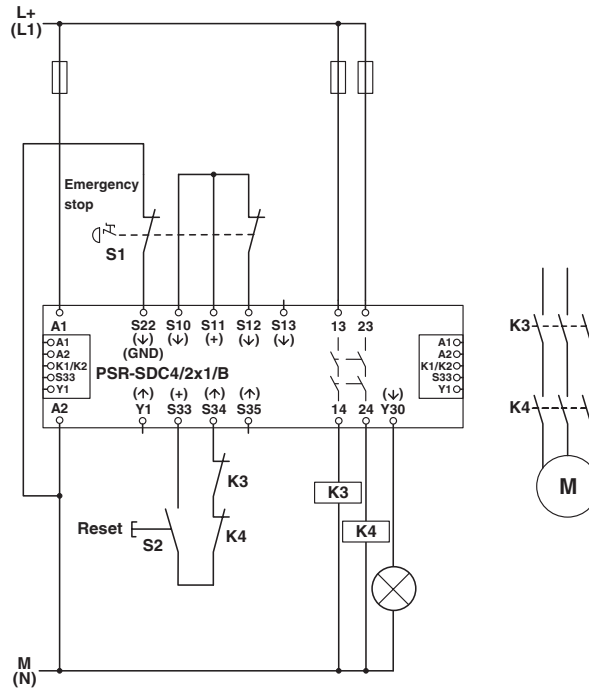
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Circuit diagram



2-channel emergency stop monitoring

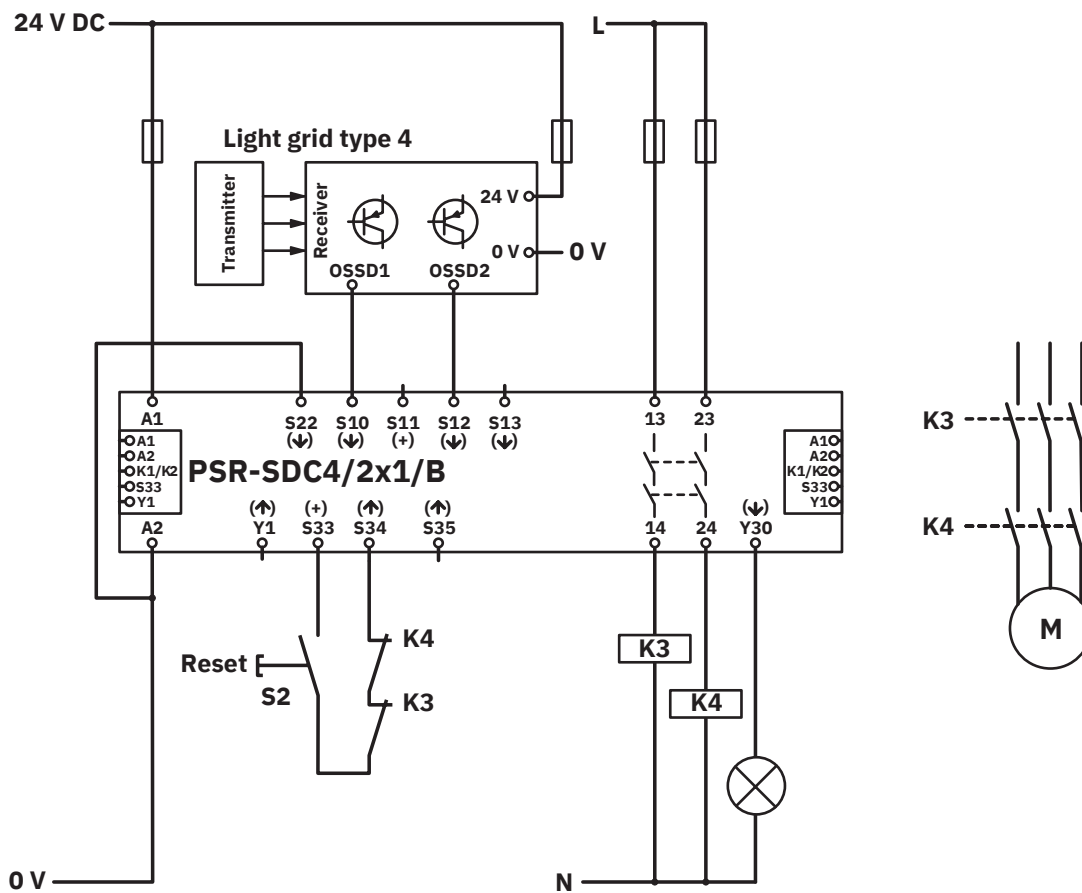
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Circuit diagram



Light grid monitoring

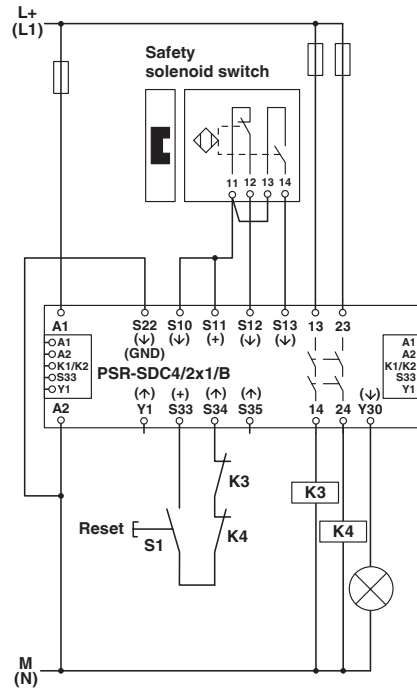
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Circuit diagram



Two-channel magnetic switch monitoring

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Approvals

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cULus Listed

Approval ID: E140324



Functional Safety

Approval ID: 01/205/0660.04/24

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Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	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	d72e7db1-94f1-4bbe-b1b1-ea81c50ae8cb

EF3.1 Climate Change

CO2e kg	5.859 kg CO2e
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