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

2981499

https://www.phoenixcontact.com/us/products/2981499

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The figure shows a version with a screw connection

Safety relay for emergency stop, safety door, and magnetic switches, as well as 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, pluggable Push-in terminal block

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	2981499
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA211
GTIN	4046356051699
Weight per piece (including packing)	185.7 g
Weight per piece (excluding packing)	197.9 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

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

Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section, flexible, with ferrule, without plastic	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)

sleeve	
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

Material specifications

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

Characteristics

Safety data

Stop category (EN 60204-1)	0

Safety data: EN ISO 13849

Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3

Safety data: IEC 61508 - Low demand

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
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

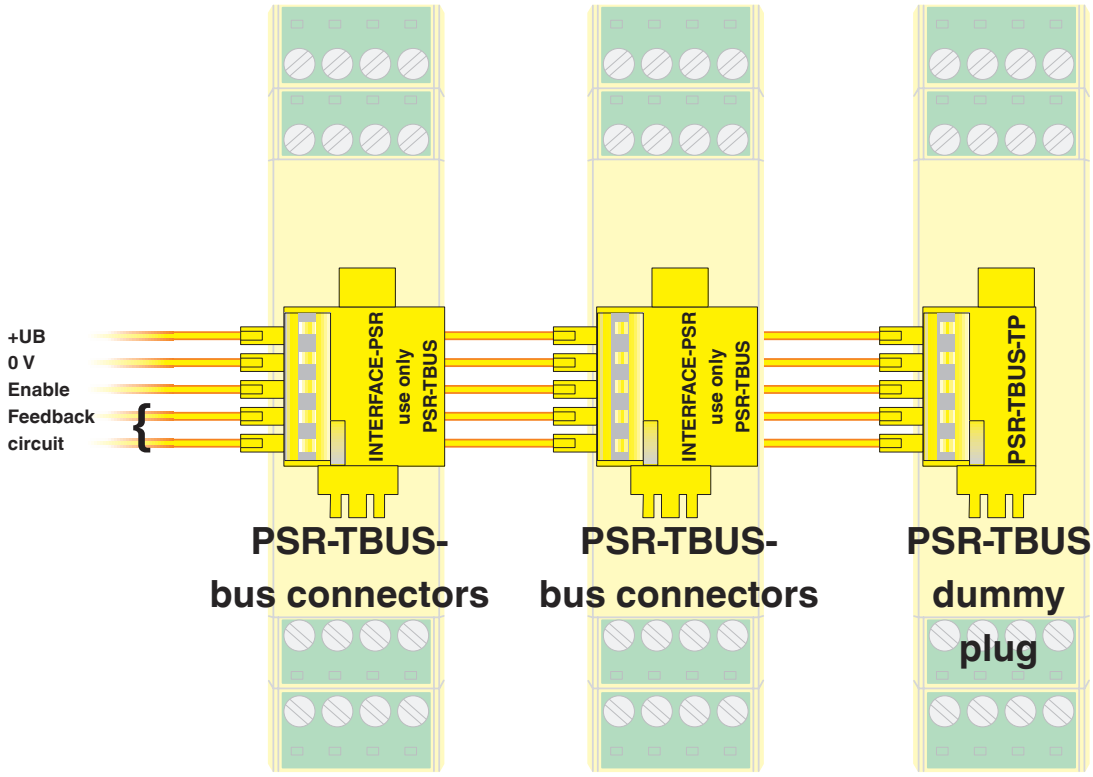
Mounting

Mounting type	DIN rail mounting

Mounting position	any

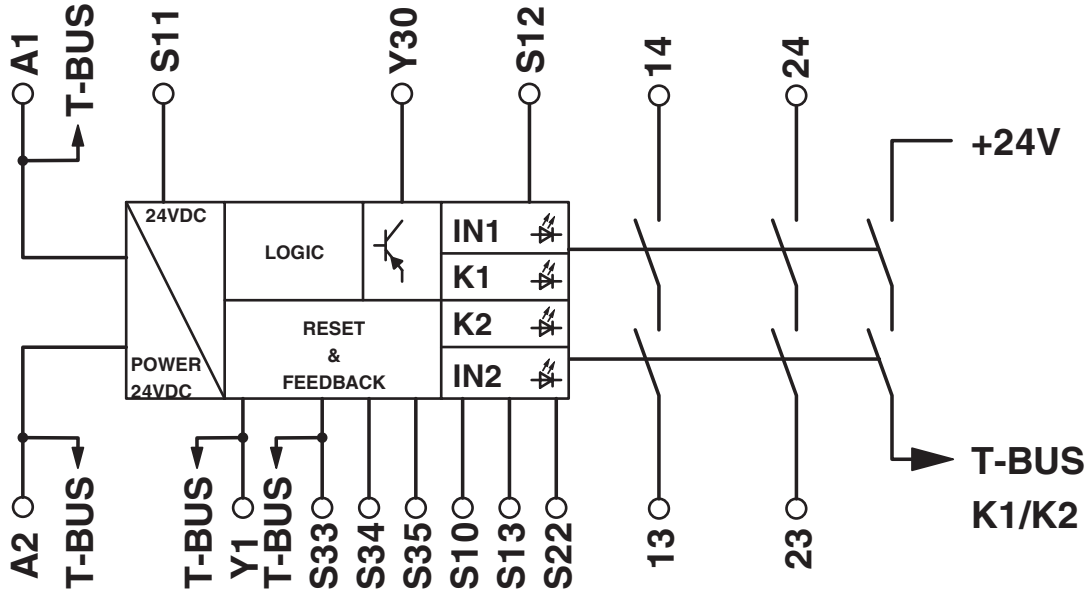
Drawings

Connection diagram



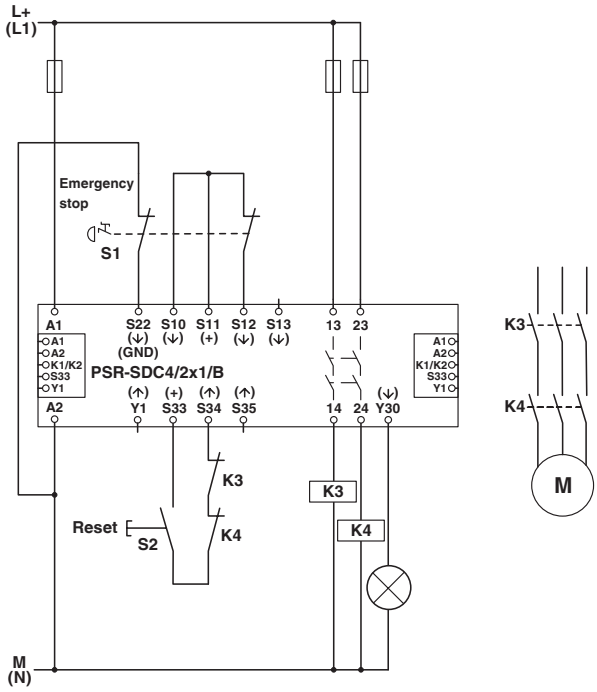
PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

Circuit diagram



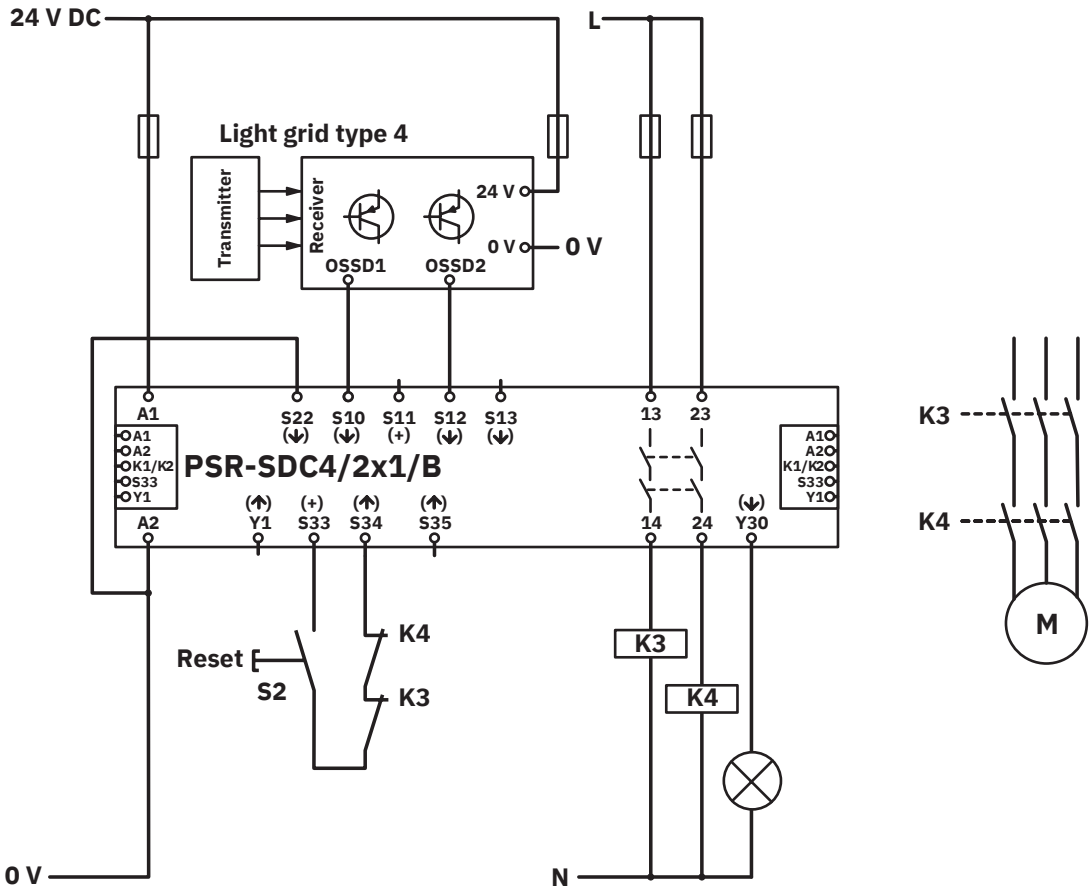
Block diagram

Circuit diagram



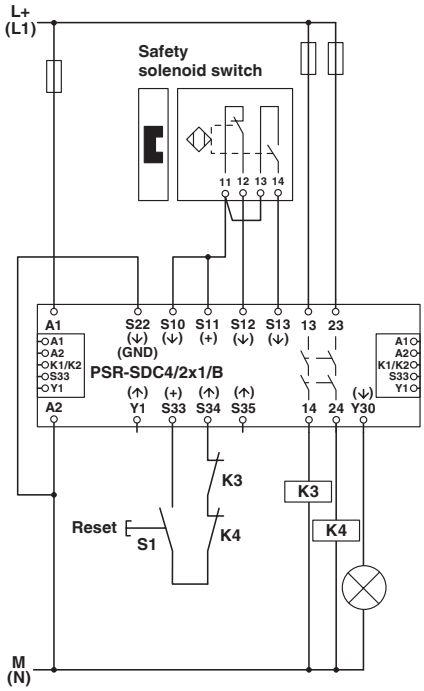
2-channel emergency stop monitoring

Circuit diagram



Light grid monitoring

Circuit diagram



Two-channel magnetic switch monitoring

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2981499

cULus Listed
Approval ID: E140324

Functional Safety
Approval ID: 01/205/0660.04/24

Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	EC001449

UNSPSC

UNSPSC 21.0	39122200

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	3ffe7659-7c07-4479-bf6c-1b797cdb1c40

EF3.1 Climate Change

CO2e kg	6.132 kg CO2e

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