

2981680
<https://www.phoenixcontact.com/us/products/2981680>

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Single-channel contact extension with TBUS interface, 4 N/O contacts, 1 N/C contact, 1 confirmation current path, undelayed, Cat. 4, PL e in accordance with EN ISO 13849, width: 22.5 mm, pluggable Push-in terminal block

Your advantages

- 4 enabling current paths, 1 signaling current path, and 1 confirmation current path
- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508

Commercial data

Item number	2981680
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA231
GTIN	4046356081542
Weight per piece (including packing)	174 g
Weight per piece (excluding packing)	153.35 g
Customs tariff number	85371098
Country of origin	DE

PSR-SPP- 24DC/URM4/4X1/2X2/B - Extension module



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Technical data

Notes

Note on application

Note on application	Only for industrial use
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Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Extension module
Control	1-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

Typ. starting time with U_s	10 ms (when controlled via K1/K2)
Typical release time	10 ms (when requested via K1/K2)

Electrical properties

Maximum power dissipation for nominal condition	16.14 W ($U_N = 26.4$ V, $I_L^2 = 72$ A ² , $P_{Total\ max} = 1.74$ W + 14.4 W)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit/N/C contacts and enabling current paths).

Input data

Digital: K1/K2

Description of the input	safety-related
Number of inputs	1
Input voltage range "1" signal	21.6 V DC ... 26.4 V DC
Inrush current	< 130 mA ($\Delta t = 800$ ms)
Protective circuit	Suppressor diode
Current consumption	typ. 60 mA

Output data

Relay: Enabling current paths (23/24, 33/34, 43/44, 53/54)

Output description	2 N/O contacts each in series, safety-related, floating
Number of outputs	4

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Contact switching type	4 enabling current paths
Contact material	AgSnO ₂
Switching voltage	min. 5 V AC/DC
	max. 250 V AC/DC
Switching power	min. 50 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	5 A (AC15)
	6 A (DC13)
Limiting continuous current	6 A (Observe derating and load limit curve)
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)

Relay: Confirmation current path (11/12)

Output description	Diagnostic contact, 2 NC in series, floating
Number of outputs	1
Contact switching type	2 N/C contacts in series, floating
Contact material	AgSnO ₂
Switching voltage	min. 5 V AC/DC
	max. 26.4 V AC/DC
Switching power	min. 50 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	1 A (AC15)
	1 A (DC13)
Limiting continuous current	1 A
Sq. Total current	1 A ²
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	1 A gL/gG

Relay: Signaling current path (61/62)

Output description	2 N/C contacts in parallel, floating
Number of outputs	1
Switching voltage	min. 5 V AC/DC
	250 V AC/DC
Switching power	min. 50 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	1 A (AC15)
	1 A (DC13)
Limiting continuous current	1 A

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Sq. Total current	1 A ²
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	1 A (gL/gG)

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 ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Signaling

Operating voltage display	1 x LED (green)
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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	0
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Safety data: EN ISO 13849

Category	4 (In conjunction with suitable evaluating device)
Performance level (PL)	e (5 A DC13; 5 A AC15; 8760 switching cycles/year)

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3 (In conjunction with suitable evaluating device)
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Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (In conjunction with suitable evaluating device)
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Safety data: EN IEC 62061

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Safety Integrity Level (SIL)	3 (In conjunction with suitable evaluating device)
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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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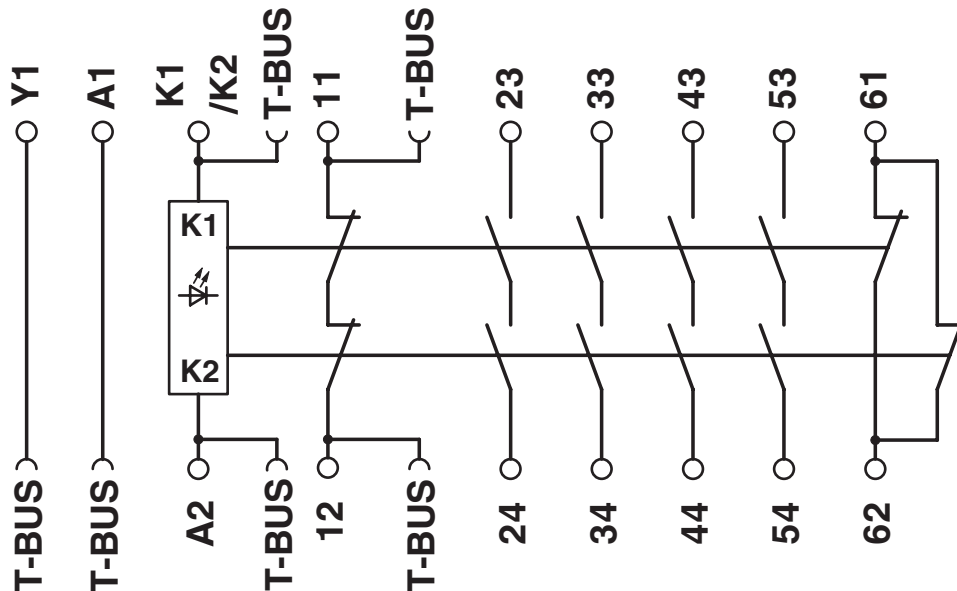
Mounting

Mounting type	DIN rail mounting
Mounting position	any

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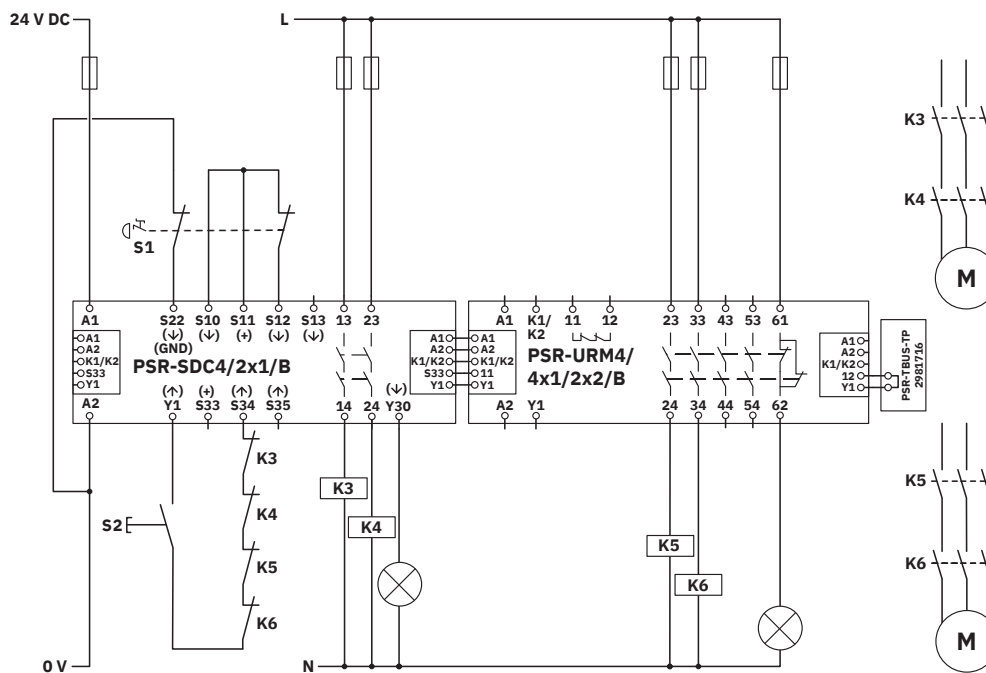
Drawings

Circuit diagram



Block diagram

Circuit diagram



Two-channel emergency stop monitoring with contact extension

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Approvals

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Functional Safety

Approval ID: 968/FSP 1678.01/23

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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	97932f17-76d8-46ba-af76-ef954f33e30c

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