

PSR-SCP-24DC/ESD/5X1/1X2/300 - Safety relays



2981428

<https://www.phoenixcontact.com/us/products/2981428>

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e (EN ISO 13849), one- or two-channel operation, automatic or manual activation, 3 N/O contacts, 1 N/C contact, 2 N/O contacts with dropout delay of 0.2 s ... 300 s, plug-in screw terminal block

Your advantages

- Maximum of 3 undelayed and 2 dropout delay contacts
- Manually monitored and automatic activation
- Up to Cat. 3/4 and PL d/e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- For emergency stop and safety door monitoring, plus evaluation of light grids
- 1- and 2-channel control
- Adjustable delay time of 0.2 s ... 300 s (24 increments)
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2981428 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA131 |
| GTIN | 4017918975227 |
| Weight per piece (including packing) | 430 g |
| Weight per piece (excluding packing) | 372.97 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 |
| Control | 1 and 2 channel |
| Mechanical service life | 10x 10 ⁶ 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 | < 70 ms (Monitored/manual start) |
| | < 600 ms (automatic start) |
| Typ. starting time with U _s | < 600 ms (with U _s / when controlled via A1) |
| Typical release time | < 20 ms (with U _s / when controlled via S11/S12 and S21/S22) |
| | < 20 ms (with U _s / when controlled via A1) |
| Delay time range | 0.2 s ... 300 s ±1%                         |

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| | |
|---|---|
| Number of inputs | 3 |
| Input voltage range "1" signal | 20.4 V ... 26.4 V |
| Inrush current | < 40 mA (with U_s/I_x to S10) < 190 mA (with U_s/I_x to S12) > -60 mA (with U_s/I_x to S22) |
| Filter time | max. 1.5 ms (Test pulse width of low test pulses) 7.5 ms (Test pulse rate) |
| Concurrency | ∞ |
| Max. permissible overall conductor resistance | approx. 22 Ω (Input and start circuits at U_N) |
| Protective circuit | Suppressor diode |
| Current consumption | < 40 mA (with U_s/I_x to S10) < 50 mA (with U_s/I_x to S12) > -40 mA (with U_s/I_x to S22) |

Digital: Start circuit (S34, S35)

| | |
|---|--|
| Description of the input | non-safety-related |
| Number of inputs | 2 |
| Inrush current | < 40 mA (with U_s/I_x to S34) < 40 mA (with U_s/I_x to S35) |
| Max. permissible overall conductor resistance | approx. 22 Ω (Input and start circuits at U_N) |
| Protective circuit | Suppressor diode |
| Current consumption | typ. 0 mA (with U_s/I_x to S34) < 5 mA (typ. with U_s/I_x at S35) |

Output data

Relay: Enabling current paths (13/14, 23/24, 33/34, 57/58, 67/68)

| | |
|-----------------------------|--|
| Output description | 2 N/O contacts each in series, safety-related, floating |
| Number of outputs | 3 (undelayed: 13/14, 23/24, 33/34) 2 (delayed: 57/58, 67/68) |
| Contact switching type | 3 enabling current paths |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 5 V AC/DC max. 250 V AC/DC (Observe the load curve) |
| Switching power | min. 50 mW |
| Inrush current | min. 10 mA max. 20 A ($\Delta t \leq$  ms, undelayed contacts) max. 8 A (delayed contacts) |
| Switching capacity | 3 A (AC15) 2.5 A (DC13) |
| Limiting continuous current | 6 A (observe derating) |
| Sq. Total current | 55 A ² (observe derating) |
| Switching frequency | max. 0.1 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 10 A gL/gG |

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Relay: Signaling current path (41/42)

| | |
|-----------------------------|---|
| Output description | 2 N/C contacts parallel, non-safety-related, floating |
| Number of outputs | 1 (undelayed) |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 5 V AC/DC max. 250 V AC/DC |
| Switching power | min. 50 mW |
| Inrush current | max. 20 A (≤ 100 ms) |
| Switching capacity | 3 A (AC15) 2.5 A (DC13) |
| Limiting continuous current | 6 A (observe derating) |
| Sq. Total current | 55 A ² (observe derating) |
| Switching frequency | max. 0.1 Hz |
| Output fuse | 6 A (gL/gG) |

Connection data

Connection technology

| | |
|-----------|-----|
| pluggable | yes |
|-----------|-----|

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

Signaling

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

Dimensions

| | |
|--------|----------|
| Width | 45 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 (Undelayed contacts) |
|----------------------------|------------------------|

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| | |
|--------------------------------------|--------------------------------|
| | 1 (delayed contacts) |
| Safety data: EN ISO 13849 | |
| Performance level (PL) | e (Undelayed contacts) |
| | d (delayed contacts) |
| Safety data: IEC 61508 - High demand | |
| Safety Integrity Level (SIL) | 3 (for delayed contacts SIL 2) |
| Safety data: IEC 61508 - Low demand | |
| Safety Integrity Level (SIL) | 3 (for delayed contacts SIL 2) |
| Safety data: EN IEC 62061 | |
| Safety Integrity Level (SIL) | 3 (Undelayed contacts) |
| | 2 (delayed contacts) |

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 |
|----------------|--------------|

Mounting

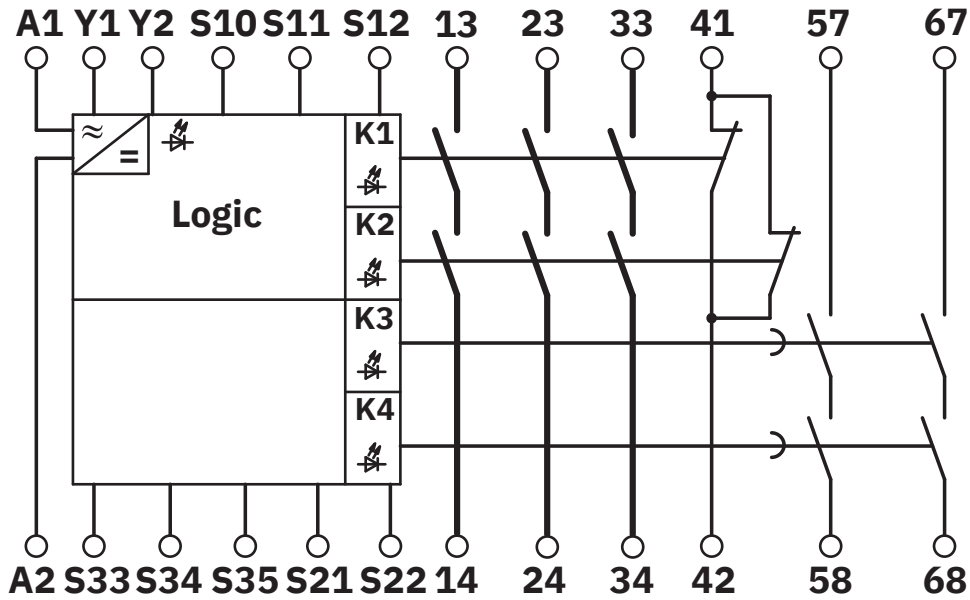
| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |

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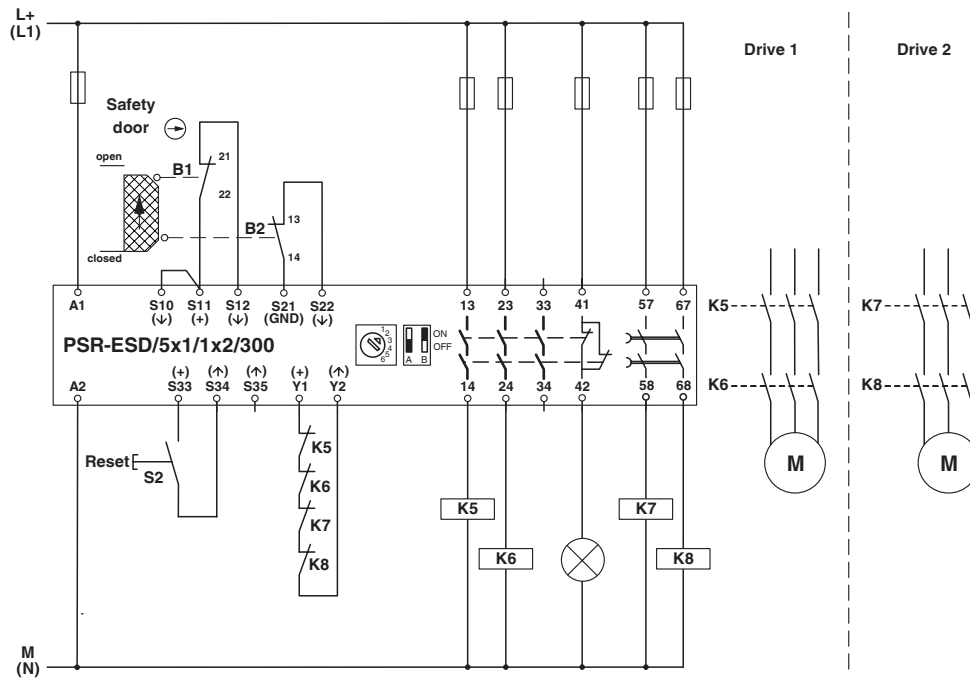
Drawings

Circuit diagram



Block diagram

Circuit diagram



Two-channel safety door monitoring

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Approvals

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cULus Listed

Approval ID: E140324



Functional Safety

Approval ID: 01/205/5347.04/23

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27371819 |
| ECLASS-15.0 | 27371819 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001449 |
|-----------|----------|

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 | ca5a2a67-a45c-4a19-95d5-8784c790051e |

EF3.1 Climate Change

| | |
|---------|--------------|
| CO2e kg | 9.95 kg CO2e |
|---------|--------------|

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