

Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 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 to 300 s, plug-in screw terminal block

Why buy this product

- ✓ Maximum of 3 undelayed and 2 dropout delay contacts
- ✓ Manually monitored and automatic activation
- ✓ Up to Cat. 3/4 and PL d/e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- ✓ For emergency stop and safety door monitoring, plus evaluation of light grids
- ✓ Single and two-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)



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 STK |
| GTIN |  4 017918 975227 |
| GTIN | 4017918975227 |
| Weight per Piece (excluding packing) | 430.000 g |
| Custom tariff number | 85371099 |
| Country of origin | Germany |

Technical data

Note

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

Dimensions

| | |
|--------|-------|
| Width | 45 mm |
| Height | 99 mm |

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Technical data

Dimensions

| | |
|-------|----------|
| Depth | 114.5 mm |
|-------|----------|

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -20 °C ... 55 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Max. permissible relative humidity (operation) | 75 % (on average, 85% infrequently, non-condensing) |
| Max. permissible humidity (storage/transport) | 75 % (on average, 85% infrequently, non-condensing) |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |
| Maximum altitude | ≤ 2000 m (Above sea level) |

Input data

| | |
|---|---|
| Rated control circuit supply voltage U_s | 24 V DC -15 % / +10 % |
| Power consumption at U_s | typ. 3.72 W |
| Rated control supply current I_s | typ. 155 mA |
| Inrush current | 200 mA (at U_s) |
| 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) |
| | 0 mA (with U_s/I_x to S34) |
| | < 5 mA (with U_s/I_x to S35) |
| Voltage at input/start and feedback circuit | 24 V DC -15 % / +10 % |
| Typical response time | < 600 ms (automatic start) |
| | < 70 ms (manual start) |
| Typ. starting time with U_s | < 600 ms (when controlled via A1) |
| Typical release time | < 20 ms (when controlled via S11/S12 and S21/S22) |
| | < 20 ms (when controlled via A1) |
| Concurrence input 1/2 | ∞ |
| Recovery time | < 1 s |
| Status display | 4 x green LEDs |
| Maximum switching frequency | 0.5 Hz |
| Max. permissible overall conductor resistance | approx. 22 Ω (Input and start circuits at U_s) |
| Filter time | 1 ms (at A1 in the event of voltage dips at U_s) |
| | max. 1.5 ms (at S10, S12; test pulse width) |
| | 7.5 ms (at S10, S12; test pulse rate) |
| | Test pulse rate = 5 x Test pulse width |

Output data

| | |
|---------------------------|--------------------------|
| Contact type | 5 enabling current paths |
| | 1 signaling current path |
| Contact material | AgSnO ₂ |
| Minimum switching voltage | 5 V AC/DC |

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Output data

| | |
|--|--|
| Maximum switching voltage | 250 V AC/DC (Observe the load curve) |
| Limiting continuous current | 6 A (N/O contact, pay attention to the derating) |
| | 6 A (N/C contact) |
| Inrush current, minimum | 10 mA |
| Maximum inrush current | 20 A (Δt # 100 ms, undelayed contacts) |
| | 8 A (delayed contacts) |
| Sq. Total current | 55 A ² (observe derating) |
| Interrupting rating (ohmic load) max. | 144 W (24 V DC, $\tau = 0$ ms) |
| | 288 W (48 V DC, $\tau = 0$ ms) |
| | 110 W (110 V DC, $\tau = 0$ ms, delayed contacts: 77 W) |
| | 88 W (220 V DC, $\tau = 0$ ms) |
| | 1500 VA (250 V AC, $\tau = 0$ ms, delayed contacts: 2000 VA) |
| Maximum interrupting rating (inductive load) | 42 W (24 V DC, $\tau = 40$ ms, delayed contacts: 48 W) |
| | 42 W (48 V DC, $\tau = 40$ ms, delayed contacts: 40 W) |
| | 42 W (110 V DC, $\tau = 40$ ms, delayed contacts: 35 W) |
| | 42 W (220 V DC, $\tau = 40$ ms, delayed contacts: 33 W) |
| Switching capacity min. | 50 mW |
| Output fuse | 10 A gL/gG (N/O contact) |
| | 6 A gL/gG (N/C contact) |

General

| | |
|---|---|
| Relay type | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Mechanical service life | 10 x 10 ⁶ cycles |
| Nominal operating mode | 100% operating factor |
| Net weight | 430 g |
| Mounting type | DIN rail mounting |
| Mounting position | any |
| Degree of protection | IP54 |
| | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Control | one and two channel |
| Housing material | PBT |
| Housing color | yellow |

Connection data

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| pluggable | Yes |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |

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Connection data

| | |
|----------------------------------|------|
| 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 |
| | 1 |
| Designation | IEC 61508 - High demand |
| Safety Integrity Level (SIL) | 3 (for delayed contacts SIL 2) |
| Designation | IEC 61508 - Low demand |
| Safety Integrity Level (SIL) | 3 (for delayed contacts SIL 2) |
| Designation | EN ISO 13849 |
| Performance level (PL) | e (for delayed contacts PL d) |
| Category | 4 (Undelayed contacts) |
| Designation | EN 62061 |
| Safety Integrity Level Claim Limit (SIL CL) | 3 (for delayed contacts SILCL 2) |

Standards and Regulations

| | |
|--------------------------------|---|
| Shock | 15g |
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | DIN EN 50178/VDE 0160 |
| Rated insulation voltage | 250 V AC |
| Rated surge voltage/insulation | Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between 13/14, 23/24, 33/34, and the remaining current paths between 13/14, 23/24, 33/34 among one another |
| Degree of pollution | 2 |
| Overvoltage category | III |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |
| Conformance | CE-compliant |

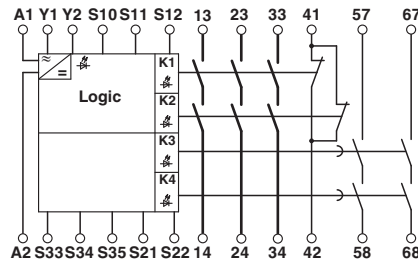
Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

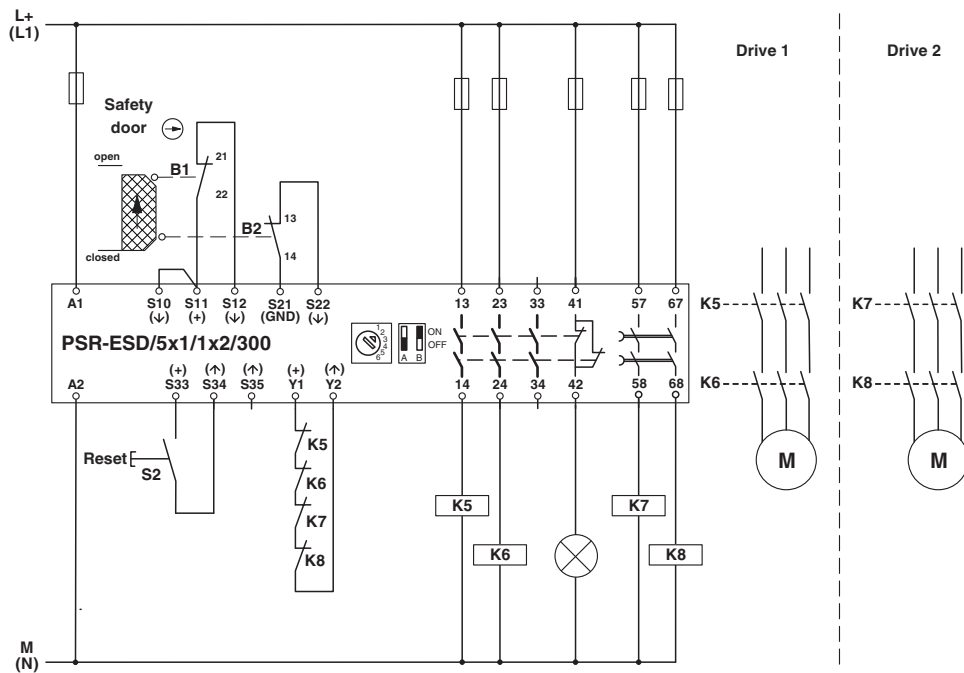
Drawings

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Circuit diagram



Circuit diagram



Two-channel safety door monitoring

Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27371102 |
| eCl@ss 4.1 | 27371102 |
| eCl@ss 5.0 | 27371901 |
| eCl@ss 5.1 | 27371901 |
| eCl@ss 6.0 | 27371819 |
| eCl@ss 7.0 | 27371819 |
| eCl@ss 8.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC001449 |
|----------|----------|

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Classifications

ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211901 |
| UNSPSC 7.0901 | 39121501 |
| UNSPSC 11 | 39121501 |
| UNSPSC 12.01 | 39121501 |
| UNSPSC 13.2 | 39121501 |

Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 140324 |
|-----------|--|---|---------------|


| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 140324 |
|------------|--|---|---------------|

| | | | |
|-------------------|--|--|-------------------|
| Functional Safety | | | 01/205/5347.01/16 |
|-------------------|--|--|-------------------|

| | | | |
|-----|--|--|---------------------|
| EAC | | | 7500651.22.01.00244 |
|-----|--|--|---------------------|

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Approvals

| | | |
|-----|---|---------------|
| EAC |  | EAC-Zulassung |
|-----|---|---------------|

| | | |
|--------------|---|--|
| cULus Listed |  | |
|--------------|---|--|