

Safety relays - PSR-SCP- 24UC/ESL4/3X1/1X2/B - 2981059

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Safety relay for emergency stop and safety door and light grid monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, single or two-channel operation, 3 enabling current paths, nominal input voltage of 24 V AC/DC, plug-in screw terminal blocks

Why buy this product

- Manually monitored and automatic activation
- Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- Three enabling and one signaling current path
- Single and two-channel control



Key Commercial Data

| | |
|--------------|-----------------|
| Packing unit | 1 STK |
| GTIN | 4 017918 927202 |

Technical data

Note

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

Dimensions

| | |
|--------|----------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -20 °C ... 55 °C |
| 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) |

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Technical data

Ambient conditions

| | |
|------------------|----------------------------|
| Maximum altitude | ≤ 2000 m (Above sea level) |
|------------------|----------------------------|

Input data

| | |
|---|--------------------------|
| Nominal input voltage U_N | 24 V AC/DC |
| Input voltage range in reference to U_N | 0.85 ... 1.1 |
| Typical input current at U_N | 150 mA AC |
| | 70 mA DC |
| Voltage at input/start and feedback circuit | approx. 24 V DC |
| Typical response time | 25 ms (manual start) |
| | 100 ms (automatic start) |
| Typical release time | 10 ms |
| Concurrence input 1/2 | ∞ |
| Recovery time | 1 s |
| Status display | Green LED |

Output data

| | |
|--|---|
| Contact type | 3 enabling current paths |
| | 1 signaling current path |
| Contact material | AgSnO ₂ , + 0.2 μm Au |
| Minimum switching voltage | 15 V AC/DC |
| Maximum switching voltage | 250 V AC/DC |
| Limiting continuous current | 6 A |
| Inrush current, minimum | 25 mA |
| Maximum inrush current | 6 A |
| Sq. Total current | $72 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2)$ |
| 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) |
| Switching capacity min. | 0.4 W |
| Output fuse | 10 A gL/gG NEOZED (N/O contact) |

General

| | |
|-------------------------|---|
| Relay type | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Mechanical service life | Approx. 10^7 cycles |
| Net weight | 193.9 g |

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Technical data

General

| | |
|---|---------------------|
| Mounting type | DIN rail mounting |
| Degree of protection | IP54 |
| | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Mounting position | any |
| Control | one and two channel |

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 |
| 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 |
| Designation | IEC 61508 - High demand |
| Safety Integrity Level (SIL) | 3 |
| Designation | IEC 61508 - Low demand |
| Safety Integrity Level (SIL) | 3 |
| Designation | EN ISO 13849 |
| Performance level (PL) | e |
| Category | 4 |
| Designation | EN 62061 |
| Safety Integrity Level Claim Limit (SIL CL) | 3 |

Standards and Regulations

| | |
|--------------------------------|--|
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | DIN EN 50178/VDE 0160 |
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | 4 kV / basic insulation (safe isolation, reinforced insulation, and 6 kV between A1-A2/logic/enabling and signaling current paths) |
| Degree of pollution | 2 |
| Overvoltage category | III |

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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 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC001449 |
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 5.0 | 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

Approvals submitted

Approval details

| |
|-----------|
| UL Listed |
|-----------|

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Approvals

cUL Listed

Functional Safety

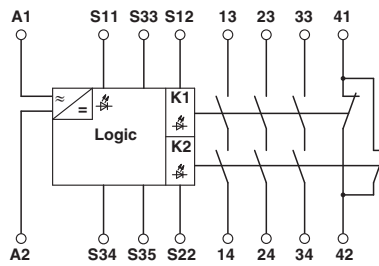
EAC

EAC

cULus Listed

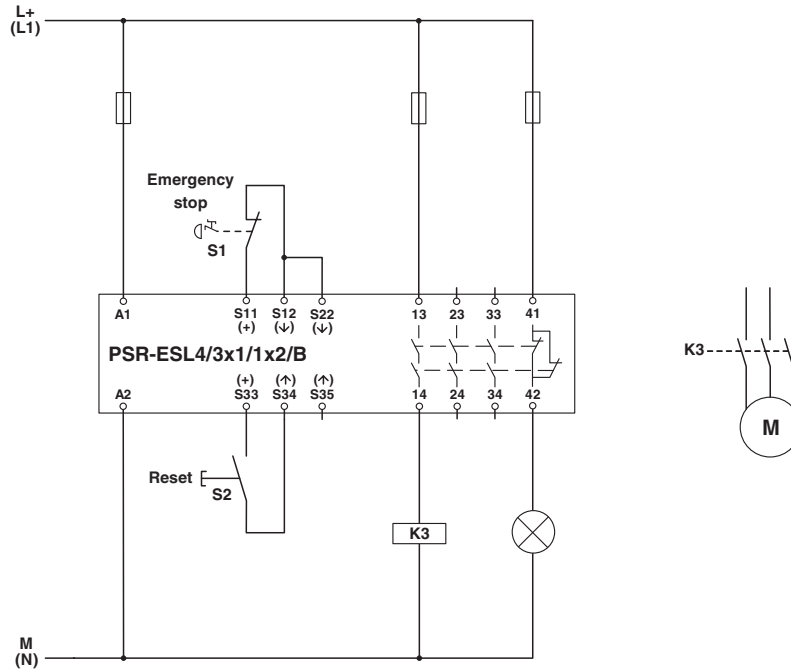
Drawings

Circuit diagram



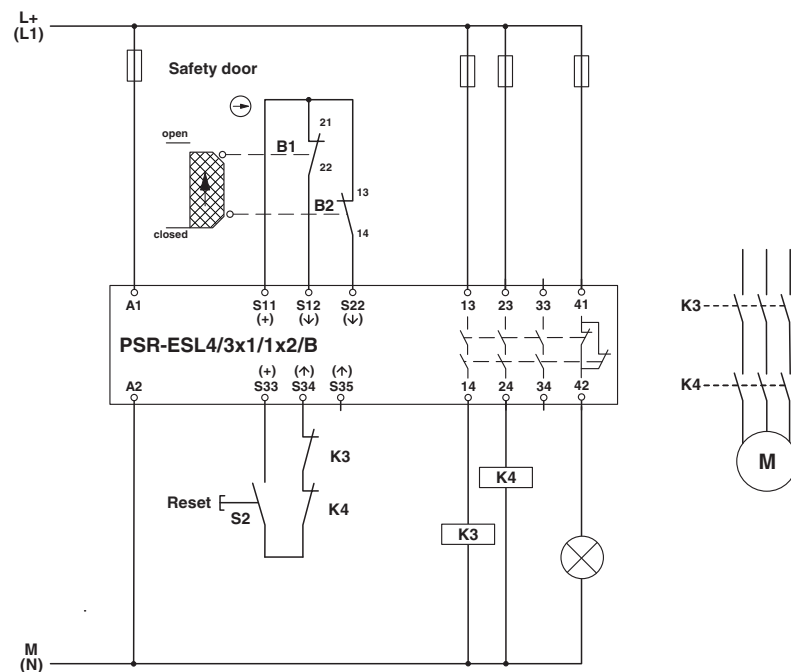
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Circuit diagram



Single-channel safety door monitoring

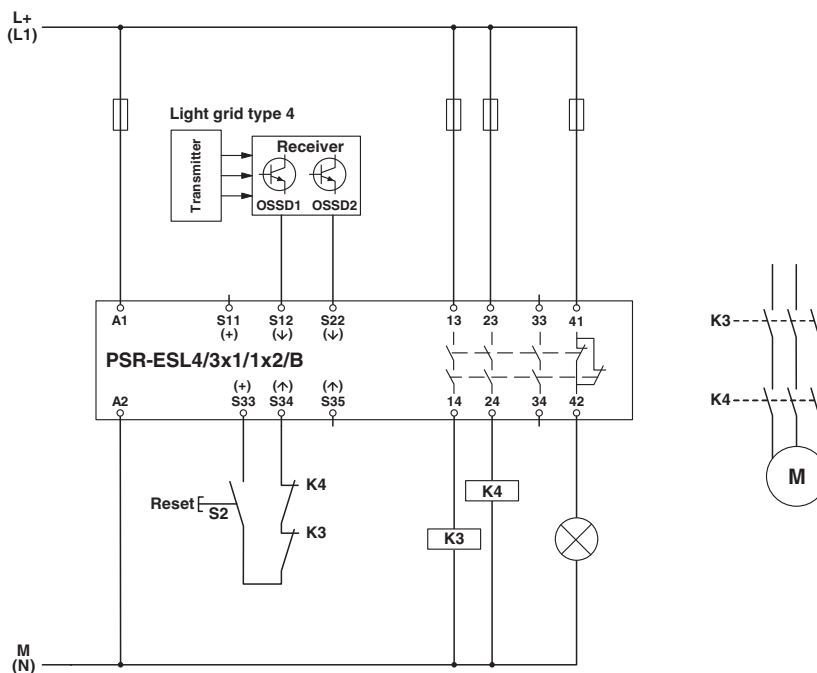
Circuit diagram



Two-channel safety door monitoring

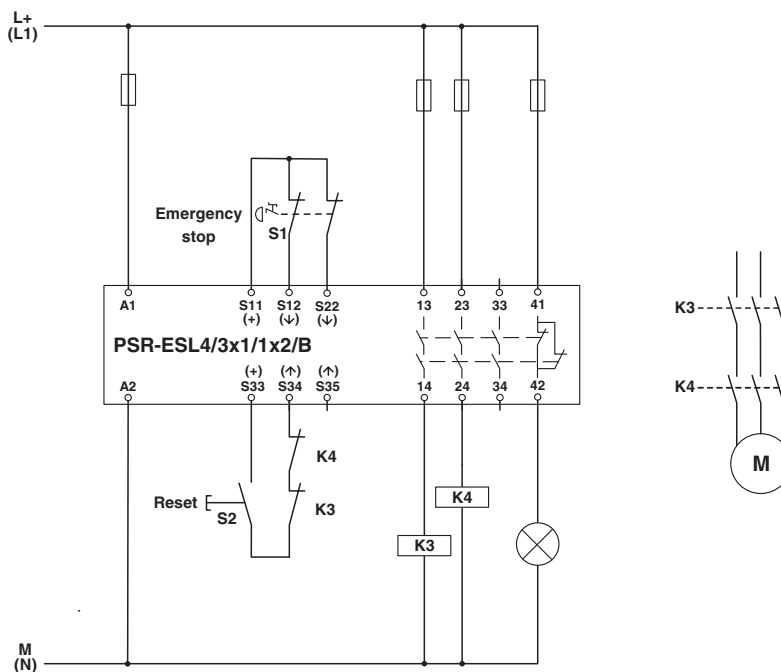
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Circuit diagram



Light grid monitoring

Circuit diagram



Two-channel emergency stop monitoring

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