

Safety relays - PSR-SCP- 24UC/ESM4/2X1/1X2 - 2963718

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 2-channel operation

Your advantages

- Up to Cat. 4/PL e according to EN ISO 13849-1, SIL 3 according to EN 62061, SIL 3 according to IEC 61508
- 2 channel control
- 2 enabling current paths, 1 signaling current path



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 017918 599379 |
| GTIN | 4017918599379 |
| Weight per Piece (excluding packing) | 220.000 g |
| Custom tariff number | 85371098 |
| Country of origin | Germany |

Technical data

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 |

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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 | 140 mA AC |
| | 65 mA DC |
| Voltage at input/start and feedback circuit | approx. 24 V DC |
| Typical response time | 20 ms (Monitored/manual start) |
| Typical release time | 45 ms (single-channel) |
| | 10 ms (two-channel) |
| Concurrence | ∞ |
| Recovery time | 1 s |
| Operating voltage display | Green LED |
| Status display | Green LED |
| Protective circuit | Surge protection Suppressor diode |
| Max. permissible overall conductor resistance | approx. 50 Ω (Input and start circuits at U_N) |

Output data

| | |
|--|---|
| Contact type | 2 enabling current paths |
| | 1 signaling current path |
| Contact material | AgSnO ₂ , + 0.2 μm Au |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 15 V AC/DC |
| Limiting continuous current | 6 A (N/O contact) |
| Maximum inrush current | 6 A |
| Inrush current, minimum | 25 mA |
| Sq. Total current | $72 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2)$ |
| 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) |
| | 35 W (220 V DC, τ = 40 ms) |
| Switching capacity min. | 0.4 W |

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Output data

| | |
|-----------------------------------|---------------------------------|
| Mechanical service life | approx. 10 ⁷ cycles |
| Switching capacity (360/h cycles) | 6 A (24 V DC) |
| | 5 A (230 V AC) |
| Output fuse | 10 A gL/gG NEOZED (N/O contact) |
| | 6 A gL/gG NEOZED (N/C contact) |

General

| | |
|---|--|
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |
| Nominal operating mode | 100% operating factor |
| Net weight | 192.1 g |
| Mounting position | any |
| Mounting type | DIN rail mounting |
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Housing material | Polyamide |
| Housing color | yellow |

Connection data

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| pluggable | Yes |
| Conductor cross section solid | 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 |

Safety-related characteristic data

| | |
|--|-------------------------|
| Stop category in accordance with IEC 60204 | 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 (SIL) | 3 |

Standards and Regulations

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Technical data

Standards and Regulations

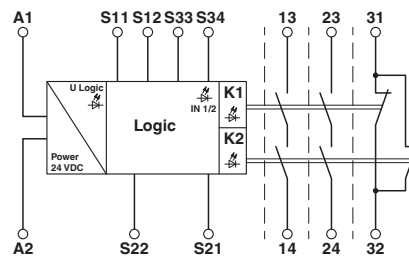
| | |
|--------------------------------|--|
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | DIN EN 50178/VDE 0160 |
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | 6 kV / Safe isolation, increased insulation |
| Degree of pollution | 2 |
| Overvoltage category | III |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

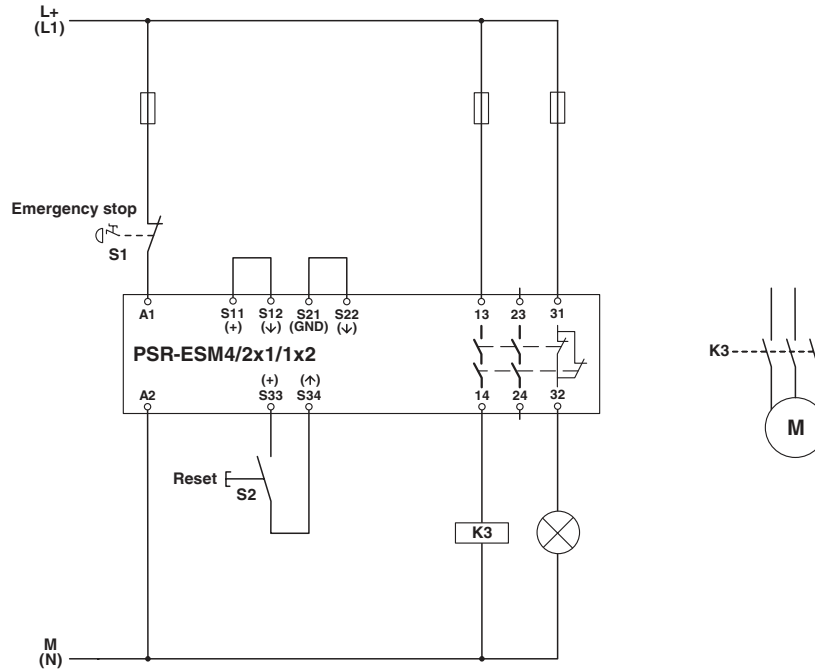
Circuit diagram



Block diagram

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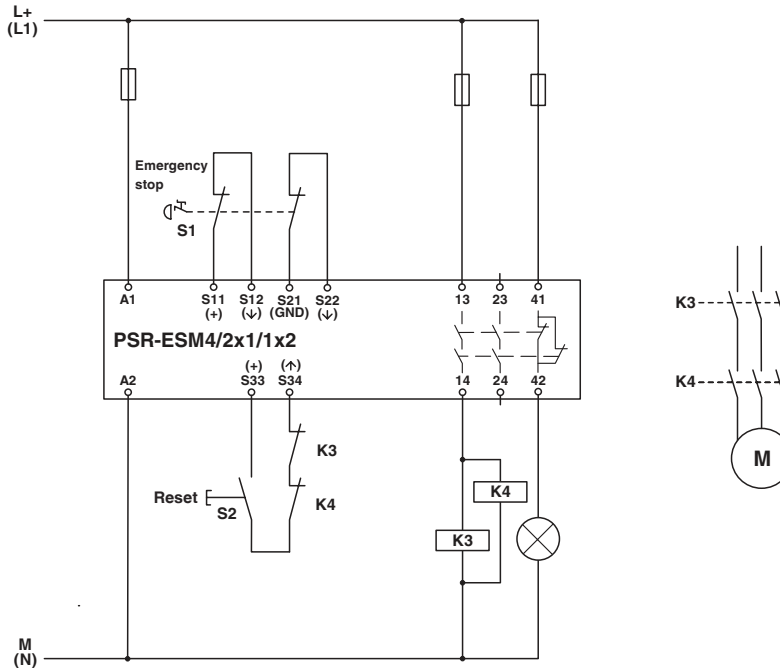
Circuit diagram



Single-channel emergency stop monitoring

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Circuit diagram



Two-channel emergency stop monitoring

Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27371819 |
| eCl@ss 11.0 | 27371819 |
| eCl@ss 4.0 | 40020600 |
| eCl@ss 4.1 | 40020600 |
| eCl@ss 5.0 | 27371900 |
| eCl@ss 5.1 | 27371900 |
| eCl@ss 6.0 | 27371800 |
| eCl@ss 7.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC000196 |
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 6.0 | EC001449 |
| ETIM 7.0 | EC001449 |

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Classifications

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211901 |
| UNSPSC 7.0901 | 39121501 |
| UNSPSC 11 | 39121501 |
| UNSPSC 12.01 | 39121501 |
| UNSPSC 13.2 | 39121501 |
| UNSPSC 18.0 | 39122205 |
| UNSPSC 19.0 | 39122205 |
| UNSPSC 20.0 | 39122205 |
| UNSPSC 21.0 | 39122205 |

Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

| | | | |
|-------------------|---|--|------------------|
| Functional Safety |  | | 968/EZ 404.05/22 |
|-------------------|---|--|------------------|

| | | | |
|-----------|---|---|---------------|
| 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 |  | | 01/205/0652.03/22 |
|-------------------|---|--|-------------------|

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Approvals

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

| | | |
|-----|---|--------------------------|
| EAC |  | RU C- DE.A*30.B.01082 |
|-----|---|--------------------------|

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