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Safety relays - PSR-SCP-230AC/ESAM2/3X1/1X2/B - 2901430

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Safety relay for emergency stop and safety door up to SIL 1, SIL CL 1, Cat. 1, PL c, depending on the application up to SIL 3, SIL CL 3, Cat. 4, PL e, single-channel operation, 3 enabling current paths, nominal input voltage of 230 V AC/DC, plug-in screw terminal blocks

Why buy this product

- Up to Cat. 1/PL c according to ISO 13849-1, SILCL 1 according to IEC 62061, SIL 1 according to IEC 61508
- Depending on the application, up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- Single-channel control
- Basic insulation



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 STK |
| GTIN |  4 046356 592185 |

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) | -25 °C ... 55 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °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 | 230 V AC |
| Input voltage range in reference to U_N | 0.85 ... 1.1 |
| Typical input current at U_N | 22 mA |
| Voltage at input/start and feedback circuit | ~ 24 V DC |
| Typical response time | 50 ms (manual start) |
| | 300 ms (automatic start) |
| Typical pick-up time | 300 ms (when controlled via A1 or S11/S12) |
| Typical release time | 20 ms (when controlled via S11/S12) |
| | 150 ms (when controlled via A1) |
| Recovery time | 1 s |
| Status display | 2 x green LEDs |
| Maximum switching frequency | 0.5 Hz |
| Max. permissible overall conductor resistance | 50 Ω |

Output data

| | |
|--|---|
| Contact type | 3 enabling current paths |
| | 1 signaling current path |
| Contact material | AgSnO ₂ , gold-flashed |
| Minimum switching voltage | 10 V AC/DC |
| Maximum switching voltage | 250 V AC/DC |
| Limiting continuous current | 6 A (N/O contact) |
| | 5 A (N/C contact) |
| Inrush current, minimum | 10 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 (at 24 V DC) |
| | 230 W (at 48 V DC) |
| | 68 W (at 110 V DC) |
| | 88 W (at 220 V DC) |
| | 2000 VA (for 250 V AC) |
| Maximum interrupting rating (inductive load) | 48 W (at 24 V DC) |
| | 40 W (at 48 V DC) |
| | 35 W (at 110 V DC) |
| | 33 W (at 220 V DC) |
| Switching capacity min. | 100 mW |
| Output fuse | 10 A gL/gG NEOZED (Enabling current paths) |
| | 6 A gL/gG NEOZED (Signaling current paths) |

General

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Technical data

General

| | |
|---|---|
| Relay type | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Mechanical service life | Approx. 10 ⁷ cycles |
| Net weight | 99.99 g |
| Mounting type | DIN rail mounting |
| Degree of protection | IP54 |
| | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Mounting position | any |
| Control | single-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 |
| Safety Integrity Level (SIL) | 1 (up to SIL 3 depending on the application) |
| | 1 (up to SIL 3 depending on the application) |
| Designation | EN ISO 13849 |
| Performance level (PL) | c (up to PL e depending on the application) |
| Category | 1 (up to Cat. 4 depending on the application) |
| Safety Integrity Level Claim Limit (SIL CL) | 1 (up to SILCL 3 depending on the application) |

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 AC |
| 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 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

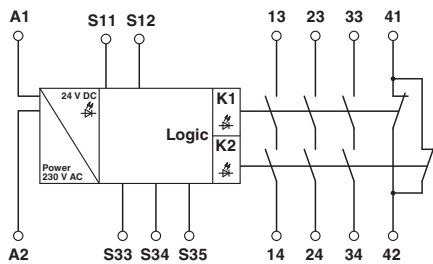
EAC

EAC

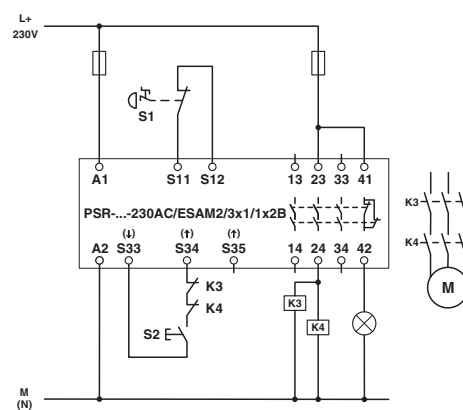
cULus Listed

Drawings

Circuit diagram



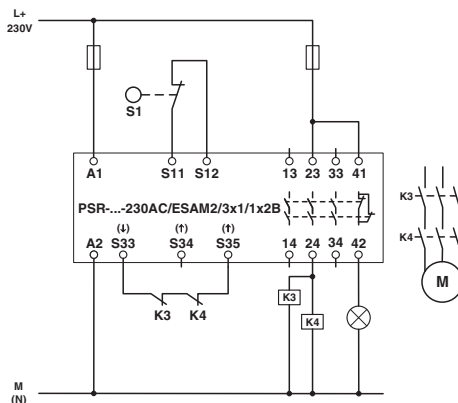
Circuit diagram



Single-channel emergency stop monitoring

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Circuit diagram



Single-channel safety door monitoring

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