

Safety relays - PSR-SCP-230UC/ESAM4/3X1/1X2/B - 2901428

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Safety relay for emergency stop and safety door 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 230 V AC/DC, plug-in screw terminal blocks


The figure shows the 230 V version.

Your advantages

- ✓ Up to Cat.4/PL e according to EN ISO 13849-1, SILCL 3 according to EN 62061, SIL 3 according to IEC 61508
- ✓ Manually monitored and automatic activation in a single device
- ✓ 3 enabling current paths, 1 signaling current path
- ✓ Single and two-channel control
- ✓ Basic insulation



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 592062 |
| GTIN | 4046356592062 |
| Weight per Piece (excluding packing) | 220.000 g |
| Custom tariff number | 85371098 |
| Country of origin | Germany |

Technical data

Note

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

Dimensions

| | |
|-------|---------|
| Width | 22.5 mm |
|-------|---------|

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Technical data

Dimensions

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

Input data

| | |
|---|--|
| Nominal input voltage U_N | 230 V AC/DC |
| 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 | 40 ms (man. start) |
| Typ. starting time with U_s | 330 ms (when controlled via A1) |
| Typical release time | 150 ms (when controlled via A1) |
| | 20 ms (when controlled via S11/S12 and S21/S22) |
| Concurrence input 1/2 | ∞ |
| Recovery time | 1 s |
| Operating voltage display | Green LED |
| Status display | Green LED |
| Protective circuit | Surge protection Varistor 275 V _{RMS} (A1-A2) |
| | Surge protection Varistor |
| 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 , + 0.2 μm Au |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 10 V AC/DC |
| Limiting continuous current | 6 A (N/O contact) |
| | 5 A (N/C contact) |
| Maximum inrush current | 6 A |
| Inrush current, minimum | 10 mA |

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Output data

| | |
|--|--|
| Sq. Total current | 72 A ² ($I_{TH}^2 = I_1^2 + I_2^2 + I_3^2$) |
| Interrupting rating (ohmic load) max. | 144 W (24 V DC, $\tau = 0$ ms) |
| | 230 W (48 V DC, $\tau = 0$ ms) |
| | 68 W (110 V DC, $\tau = 0$ ms) |
| | 88 W (220 V DC, $\tau = 0$ ms) |
| | 2000 VA (250 V AC, $\tau = 0$ ms) |
| Maximum interrupting rating (inductive load) | 48 W (24 V DC, $\tau = 40$ ms) |
| | 40 W (48 V DC, $\tau = 40$ ms) |
| | 35 W (110 V DC, $\tau = 40$ ms) |
| | 33 W (220 V DC, $\tau = 40$ ms) |
| Switching capacity min. | 100 mW |
| 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 forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205) |
| Nominal operating mode | 100% operating factor |
| Net weight | 177.31 g |
| Mounting position | any |
| Mounting type | DIN rail mounting |
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |

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 |

Safety-related characteristic data

| | |
|---------------|---|
| Stop category | 0 |
|---------------|---|

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Technical data

Safety-related characteristic data

| | |
|---|-------------------------|
| 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 |
| Designation | EN 50156 |
| Safety Integrity Level (SIL) | 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 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 |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

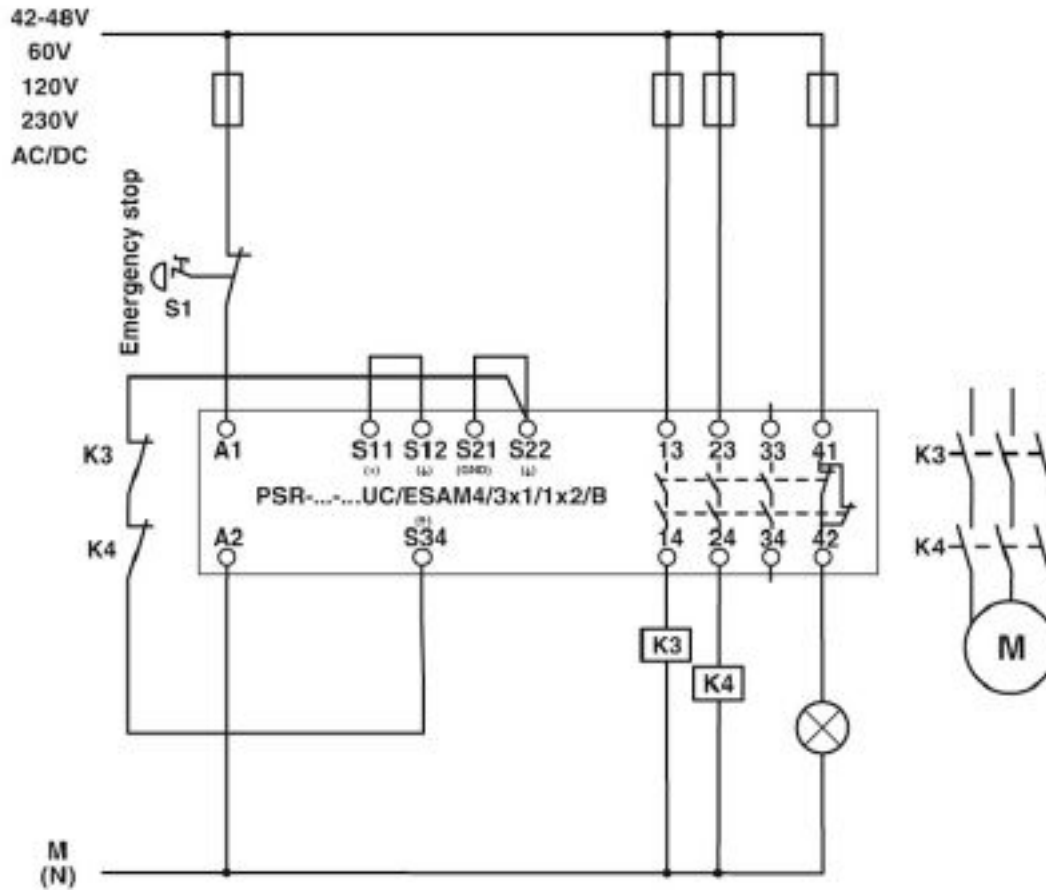
Environmental Product Compliance

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

Safety relays - PSR-SCP-230UC/ESAM4/3X1/1X2/B - 2901428

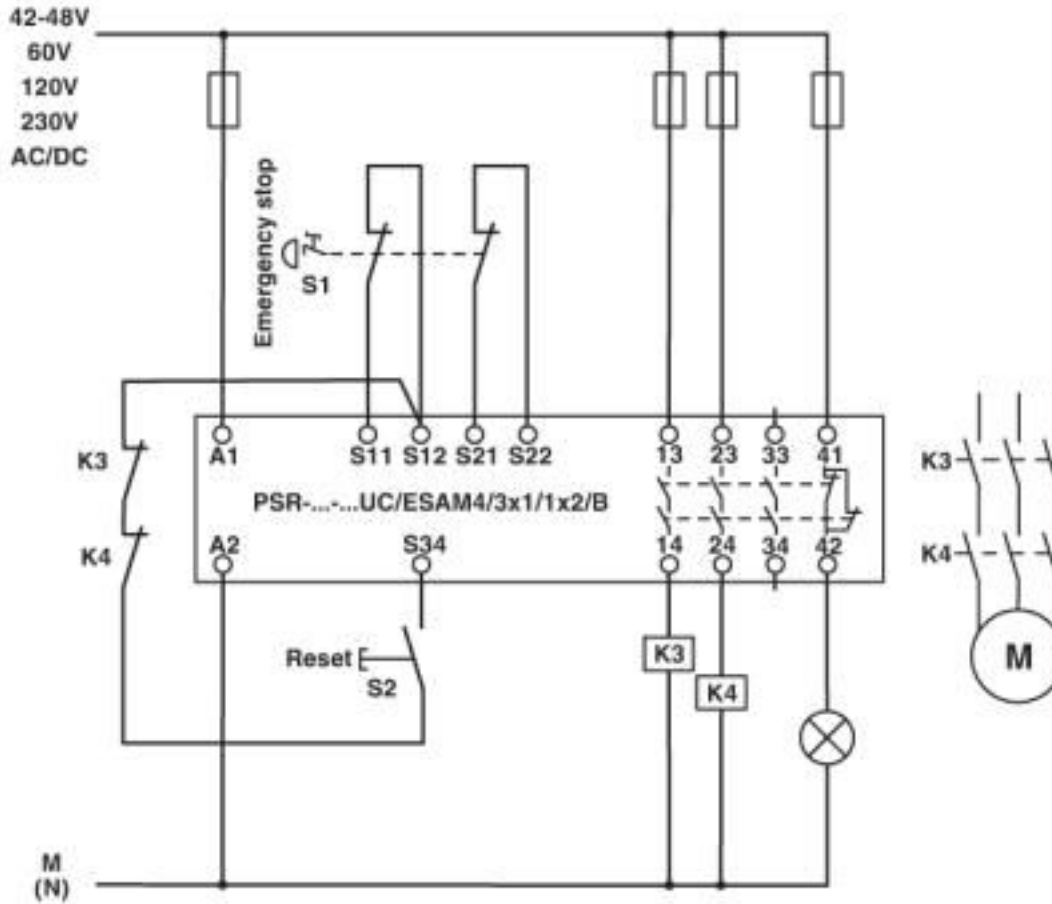
Application drawing



Single-channel emergency stop monitoring

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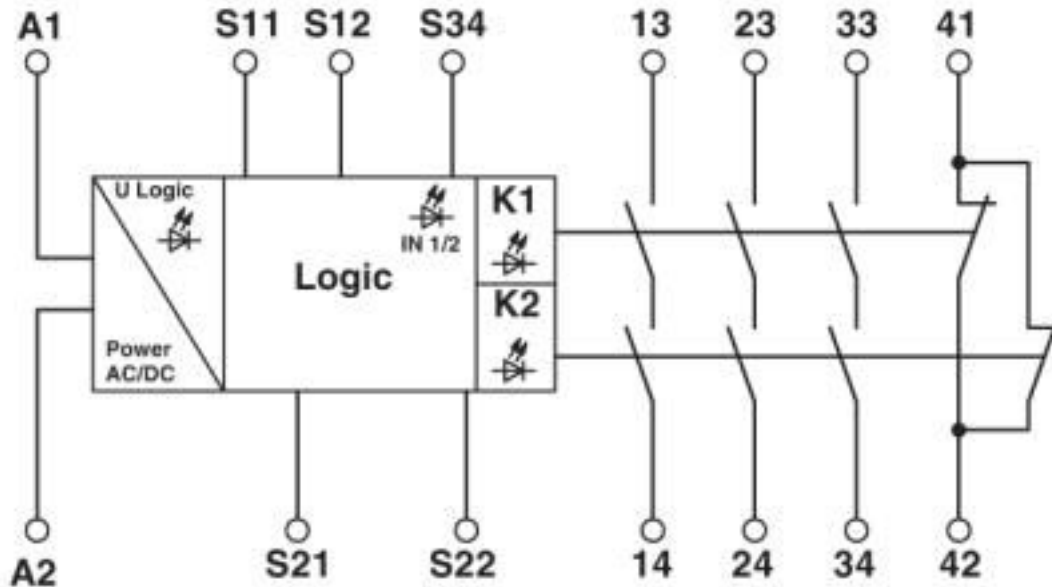
Application drawing



Two-channel emergency stop monitoring

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Circuit diagram



Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 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 8.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |

ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |
| ETIM 7.0 | EC001449 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211901 |
| UNSPSC 7.0901 | 39121501 |

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Classifications

UNSPSC

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

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 | | | 01/205/5117.01/16 |
|-------------------|--|--|-------------------|

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

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Approvals

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

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