

## Safety relays - PSR-SCP- 24UC/ESAM4/2X1/1X2 - 2900525

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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, 2 enabling current paths, nominal input voltage of 24 V AC/DC, plug-in screw terminal blocks

### Product Features

- ✓ 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
- ✓ 2 enabling current paths, 1 signaling current path
- ✓ Reinforced insulation
- ✓ Single and two-channel control



### Key Commercial Data

|                                      |          |
|--------------------------------------|----------|
| Packing unit                         | 1 pc     |
| Weight per Piece (excluding packing) | 240.0 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  | 22.5 mm  |
| Height | 99 mm    |
| Depth  | 114.5 mm |

#### Ambient conditions

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## Technical data

### 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) |
| 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 (manual start)                              |
|   | 150 ms (automatic start)                          |
| Typical release time                          | 45 ms (single-channel)                            |
|   | 10 ms (two-channel)                               |
| Concurrence input 1/2                         | ∞   |
| Recovery time                                 | 1 s   |
| Status display                                | Green LED   |
| 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 <sub>2</sub> , + 0.2 μm Au            |
| Minimum switching voltage                    | 15 V AC/DC                                  |
| Maximum switching voltage                    | 250 V AC/DC                                 |
| Limiting continuous current                  | 6 A (N/O contact)                           |
| Inrush current, minimum                      | 25 mA                                       |
| Maximum inrush current                       | 6 A   |
| Sq. Total current                            | $72 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2)$ |
| 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)                   |

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### Technical data

#### Output data

|                         |                                 |
|-------------------------|---------------------------------|
|                         | 35 W (110 V DC, $\tau = 40$ ms) |
|                         | 35 W (220 V DC, $\tau = 40$ ms) |
| Switching capacity min. | 0.4 W                           |
| 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 EN 50205 |
| Mechanical service life                     | Approx. $10^7$ cycles   |
| Net weight                                  | 137.48 g  |
| 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   |
| Parameters as per EN ISO 13849              | 4   |
| Stop category                               | 0   |
| Parameters for IEC 61508                    | 3   |

#### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| pluggable                             | Yes                 |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 7 mm                |
| Screw thread                          | M3                  |

#### 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  |

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## Technical data

### Standards and Regulations

|   |     |
|---|-----|
| Overvoltage category                        | III |
| Safety Integrity Level Claim Limit (SIL CL) | 3   |

## 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

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Approvals

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

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Ex Approvals

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Approvals submitted

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## Approvals

### Approval details

UL Listed

cUL Listed

Functional Safety

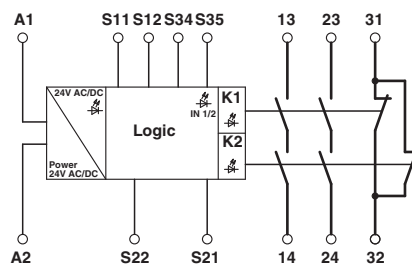
EAC

EAC

cULus Listed

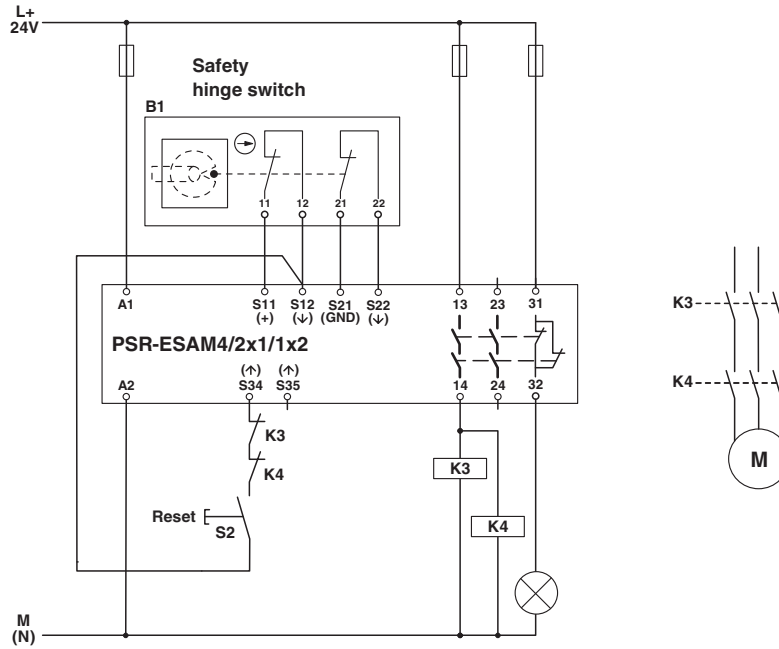
## Drawings

Circuit diagram



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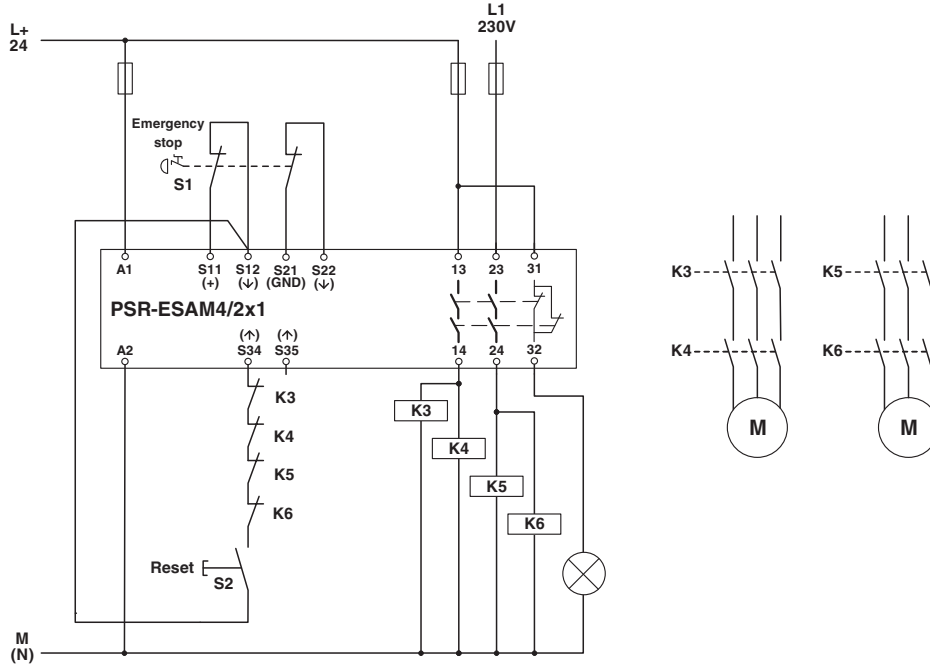
Circuit diagram



Hinge switch

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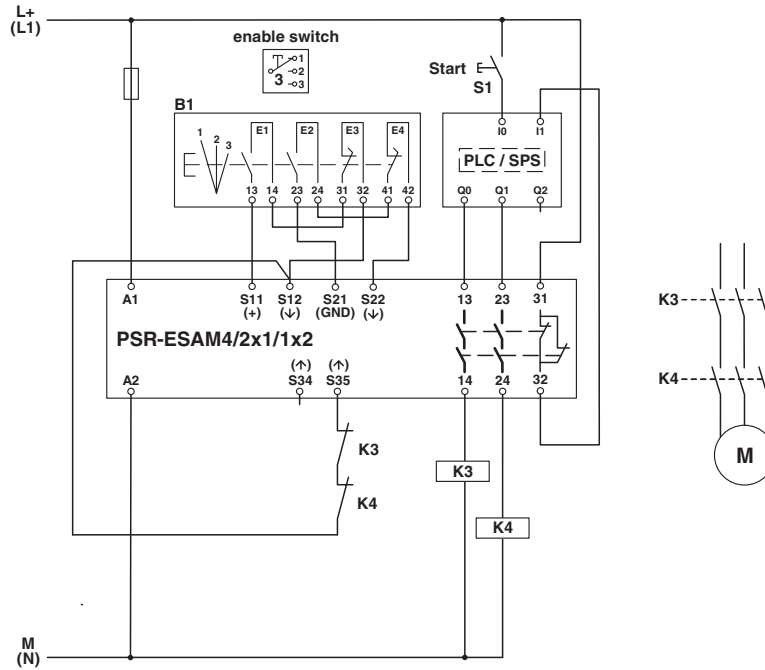
Circuit diagram



Two-channel emergency stop monitoring

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Circuit diagram



3-stage enable switch