# Safety relays - PSR-SPP- 24DC/ESD/4X1/30 - 2981813

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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, automatic or manual activation, 2 N/O contacts dropout delayed from 0.1 s to 30 s, plug-in spring-cage connection terminal blocks

## Why buy this product

- Maximum of 3 undelayed and 2 dropout delay contacts
- Manually monitored and automatic activation
- Up to Cat. 3/4 and PL d/e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- For emergency stop and safety door monitoring, plus evaluation of light grids (suitable light grids available on request)
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)
- Single and two-channel control


## Key commercial data

| | |
|---|---|
| Packing unit | 1 pc |
| GTIN | 4 046356 117265 |
| Weight per Piece (excluding packing) | 201.3 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 | 112 mm |
| Depth | 114.5 mm |

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -20 °C ... 45 °C |

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## Technical data

### Ambient conditions

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Max. permissible relative humidity (operation) | 75 % |
| Max. permissible humidity (storage/transport) | 75 % |

### Input data

| | |
|---|---|
| Nominal input voltage $U_N$ | 24 V DC |
| Input voltage range in reference to $U_N$ | 0.85 ... 1.1 |
| Typical input current at $U_N$ | 75 mA DC |
| Voltage at input/start and feedback circuit | approx. 24 V DC |
| Typical response time | 150 ms (Monitored/manual and auto-start) |
| Typical release time | 20 ms (undelayed contacts) |
| | 100 ms (delayed contacts) |
| Typical release time range | 0.1 s ... 30 s |
| Recovery time | 330 ms (Restart) |
| | 1 s (Electric torque) |
| Max. permissible overall conductor resistance | 50 Ω (Input and reset circuit at $U_N$) |

### Output data

| | |
|---|---|
| Contact type | 2 undelayed enabling current paths |
| | 2 enabling current paths delayed |
| Contact material | $AgSnO_2$ |
| 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 | 120 $A^2$ (see to derating) |
| Interrupting rating (ohmic load) max. | 144 W (24 V DC, τ = 0 ms) |
| | 288 W (48 V DC, τ = 0 ms) |
| | 90 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) | 42 W (24 V DC, τ = 40 ms) |
| | 33 W (48 V DC, τ = 40 ms) |
| | 25 W (110 V DC, τ = 40 ms) |
| | 23 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 | Electromechanically forcibly guided, dust-proof relay. |
| Mechanical service life | Approx. $10^7$ cycles |

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## Technical data

### General

| | |
|---|---|
| Mounting position | any |
| Category according to EN 13849-1 | 4 |
| Stop category | 0 (undelayed contacts) |
| | 1 (delayed contacts) |
| Name | Air and creepage distances between the power circuits |
| Standards/regulations | DIN EN 60947-1 |
| Rated surge voltage / insulation | 4 kV / basic insulation |
| Rated insulation voltage | 250 V |
| Pollution degree | 2 |
| Surge voltage category | II |

### Connection data

| | |
|---|---|
| Conductor cross section solid min. | 0.2 mm² |
| Conductor cross section solid max. | 1.5 mm² |
| Conductor cross section stranded min. | 0.2 mm² |
| Conductor cross section stranded max. | 1.5 mm² |
| Conductor cross section AWG/kcmil min. | 24 |
| Conductor cross section AWG/kcmil max | 16 |
| Stripping length | 8 mm |
| Connection method | Spring-cage connection |

## 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 |

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## Classifications

### UNSPSC

| | |
|---|---|
| UNSPSC 12.01 | 39121501 |
| UNSPSC 13.2 | 39121501 |

## Approvals

### Approvals

Approvals

UL Listed / GOST / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

Approvals submitted

### Approval details

UL Listed

GOST

cUL Listed

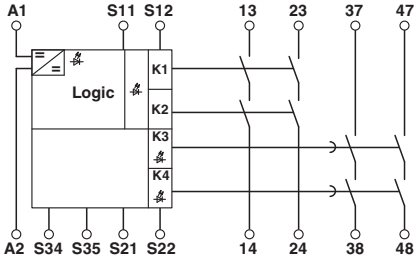
Functional Safety

cULus Listed

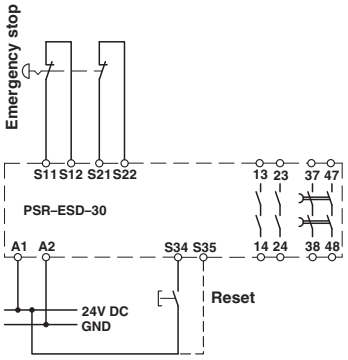
## Drawings

# Safety relays - PSR-SPP- 24DC/ESD/4X1/30 - 2981813

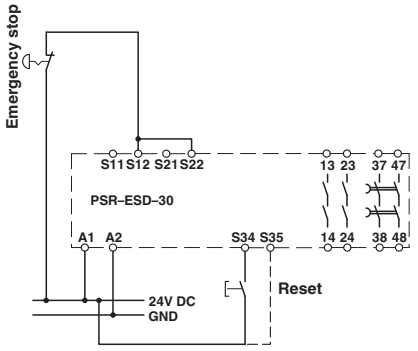
Circuit diagram



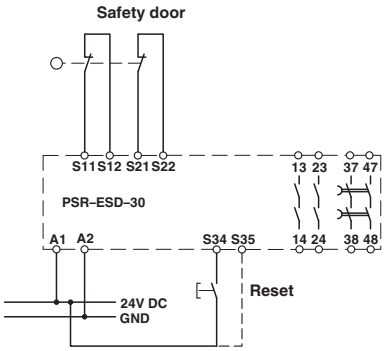

Circuit diagram



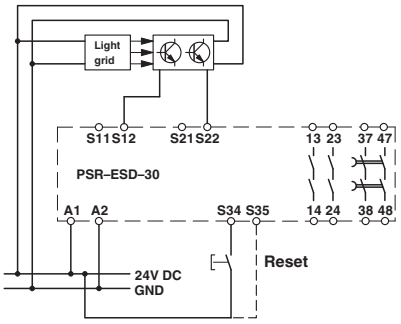

Circuit diagram



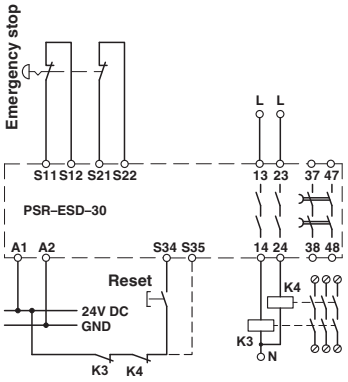

Circuit diagram




Circuit diagram




Circuit diagram



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Circuit diagram