

PSR-SCP- 24DC/ESD/4X1/30 - Safety relays



2981800

<https://www.phoenixcontact.com/in/products/2981800>

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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, automatic or manual activation, 2 N/O contacts with a dropout delay of 0.1 s ... 30 s, plug-in screw connection terminal block

Your advantages

- Maximum of 3 undelayed and 2 dropout delay contacts
- Manually monitored and automatic activation
- Up to Cat. 3/4 and PL d/e in accordance with EN ISO 13849-1, SIL 3 in accordance with IEC 62061, SIL 3 in accordance with IEC 61508
- For emergency stop and safety door monitoring, plus evaluation of light grids
- 1- and 2-channel control
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)
- Fixed delay times of 0.1 s ... 300 s

Commercial Data

| | |
|--------------------------------------|---------------------|
| Item number | 2981800 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | DNA |
| Product Key | DNA131 |
| Catalog Page | Page 230 (C-6-2019) |
| GTIN | 4046356117968 |
| Weight per Piece (including packing) | 229.3 g |
| Weight per Piece (excluding packing) | 198.9 g |
| Customs tariff number | 85371098 |
| Country of origin | DE |

Technical Data

Product properties

| | |
|-------------------------|--|
| Product type | Safety relays |
| Product family | PSRclassic |
| Set comprises | 1217839 PSR-SCP-24DC/ESD/4X1/30-SET35 |
| Application | Emergency stop Safety door Light grid |
| Mechanical service life | approx. 10^7 cycles |
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

Electrical properties

| | |
|---|-----------------------|
| Maximum power dissipation for nominal condition | 1.8 W |
| Nominal operating mode | 100% operating factor |

Air clearances and creepage distances between the power circuits

| | |
|--------------------------------|-------------------------|
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | 4 kV / basic insulation |

Input data

General

| | |
|---|---|
| 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) |
| Protective circuit | Suppressor diode, 33 V DC |
| Max. permissible overall conductor resistance | 500 Ω (Input and reset circuit at U_N) |
| Operating voltage display | Green LED |
| Status display | LED K1/K2 and K3(t)/K4(t), green |

Output data

| | |
|-----------------------------|--------------------------|
| Contact type | 4 enabling current paths |
| 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) |

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|--|--------------------------------------|
| 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, $\tau = 0$ ms) |
| | 288 W (48 V DC, $\tau = 0$ ms) |
| | 90 W (110 V DC, $\tau = 0$ ms) |
| | 88 W (220 V DC, $\tau = 0$ ms) |
| | 1500 VA (250 V AC, $\tau = 0$ ms) |
| Maximum interrupting rating (inductive load) | 42 W (24 V DC, $\tau = 40$ ms) |
| | 33 W (48 V DC, $\tau = 40$ ms) |
| | 25 W (110 V DC, $\tau = 40$ ms) |
| | 23 W (220 V DC, $\tau = 40$ ms) |
| Switching capacity min. | 0.4 W |
| Switching capacity (360/h cycles) | on request |
| Switching capacity (3600/h cycles) | 3 A (24 V (DC13)) |
| | 3 A (230 V (AC15)) |
| Output fuse | 10 A gL/gG NEOZED (N/O contact) |

Connection data

Connection technology

| | |
|-----------|-----|
| pluggable | yes |
|-----------|-----|

Conductor connection

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Conductor cross section rigid | 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 |

Dimensions

| | |
|--------|----------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|------------------|-----------|
| Housing material | Polyamide |
|------------------|-----------|

Characteristics

Safety data

| | |
|---------------|---|
| Stop category | 0 |
| | 1 |

Safety data: EN ISO 13849

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| | |
|---|-----------------------|
| Category | 4 |
| Performance level (PL) | e |
| Safety Integrity Level (SIL) | 3 |
| SFF _{Single-channel} | 99.98 % |
| SFF _{Two-channel} | 97.62 % |
| Mean time to a dangerous failure (MTTF _D) | 63311 Years |
| Probability of a hazardous failure per hour (PFH _D) | 1.80×10^{-9} |
| Diagnostic coverage (DC) | 99 % |
| Proof test interval | 240 Months |
| Duration of use | 240 Months |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Ambient temperature (operation) | -20 °C ... 45 °C |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Maximum altitude | ≤ 2000 m (Above sea level) |
| Max. permissible humidity (storage/transport) | 75 % (on average, 85% infrequently, non-condensing) |
| Max. permissible relative humidity (operation) | 75 % (on average, 85% infrequently, non-condensing) |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

Standards and regulations

Air clearances and creepage distances between the power circuits

| | |
|-----------------------|----------------|
| Standards/regulations | DIN EN 60947-1 |
|-----------------------|----------------|

Mounting

| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |
| Connection method | Screw connection |

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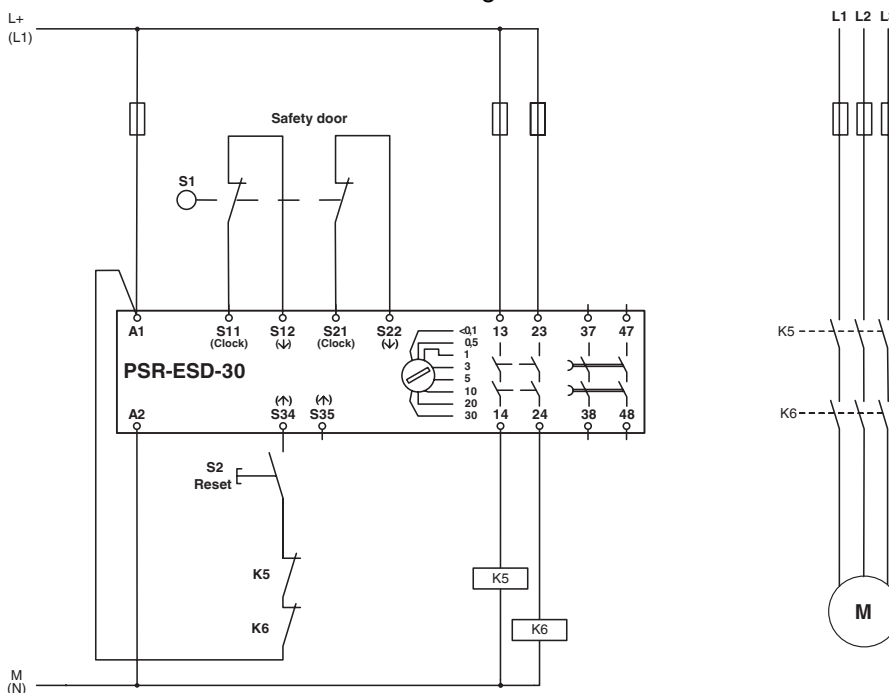


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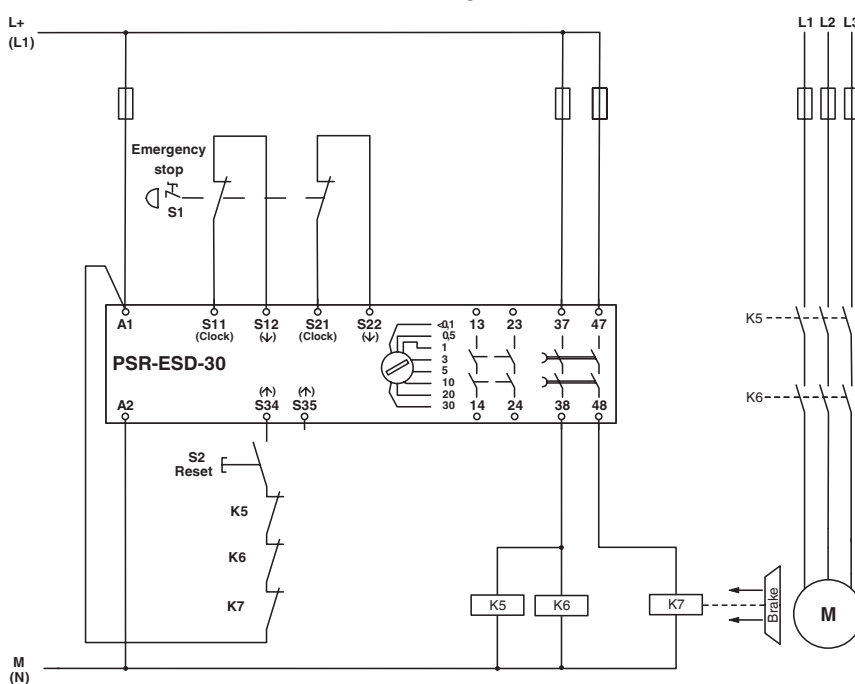
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Drawings

Circuit diagram



Circuit diagram



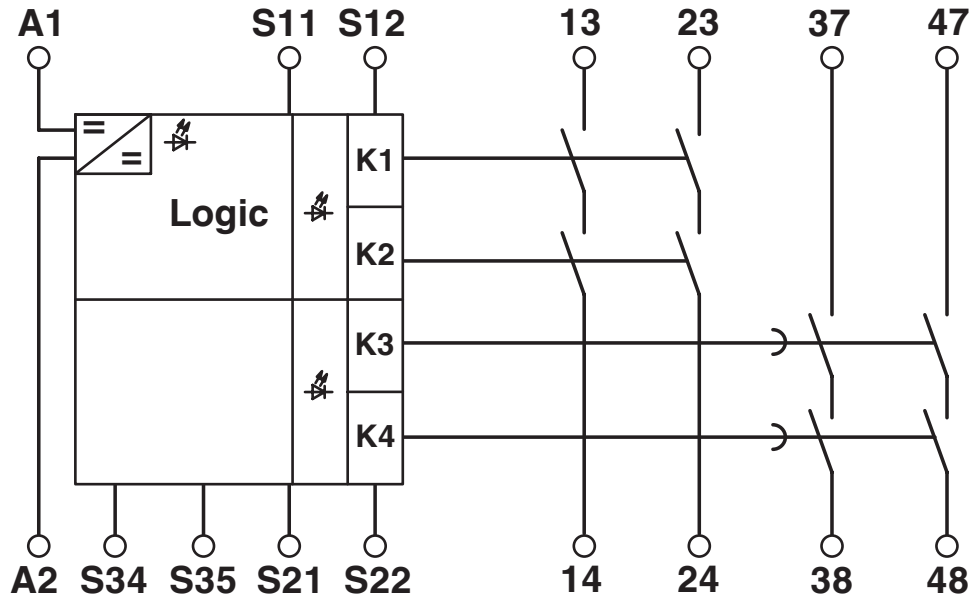
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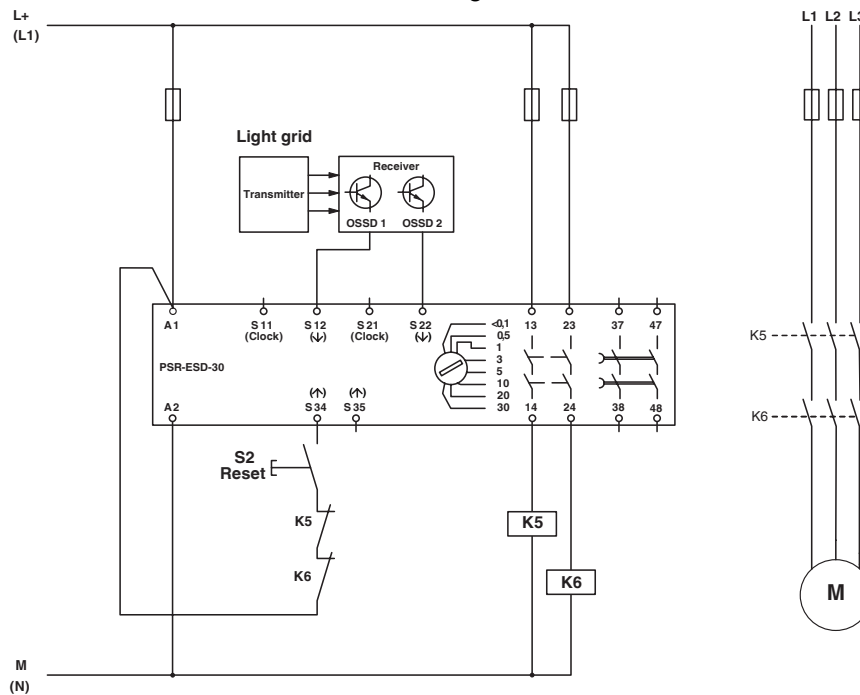
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Circuit diagram



Circuit diagram



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Approvals



EAC

Approval ID: TR_TS_D_00573_c



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27371819 |
| ECLASS-13.0 | 27371819 |
| ECLASS-12.0 | 27371819 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC001449 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39122200 |
|-------------|----------|

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Environmental Product Compliance

| | |
|------------|--|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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