

PSR-MC62-2NO-1DO-24DC-SP - Safety relays



2700575

<https://www.phoenixcontact.com/us/products/2700575>

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The figure shows a version with a screw connection

Safety relay for two-hand controls in accordance with ISO 13851 type IIIC, up to SIL 3, Cat. 4, PL e, synchronous activation monitoring < 0.5 s, 2 enabling current paths, $U_S = 24 \text{ V DC}$, plug-in Push-in terminal block

Your advantages

- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061
- Type IIIC in accordance with ISO 13851
- Low housing width of just 12.5 mm
- 2 enabling current paths, 1 digital signal output
- Automatic activation

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2700575 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | DN01 |
| Product key | DNA181 |
| GTIN | 4046356966962 |
| Weight per piece (including packing) | 158 g |
| Weight per piece (excluding packing) | 126.39 g |
| Customs tariff number | 85371098 |
| Country of origin | DE |

Technical data

Product properties

| | |
|----------------|--|
| Product type | Safety relays |
| Product family | PSRmini |
| Application | Two-hand control |
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

Insulation characteristics: Air clearances and creepage distances between the power circuits

| | |
|----------------------|-----|
| Overvoltage category | III |
| Degree of pollution | 2 |

Times

| | |
|-----------------------|--|
| Typical response time | < 50 ms |
| Typical release time | < 10 ms (when controlled via S12/S22) < 5 ms (when interrupted via A1; applicative deactivation via A1/A2 is not permitted) |
| Restart time | < 2 s (Boot time) |
| Recovery time | < 500 ms |

Electrical properties

| | |
|---|--|
| Maximum power dissipation for nominal condition | 5.09 W (at $U_S = 30$ V, $I_L^2 = 72$ A ²) |
| Nominal operating mode | 100% operating factor |

Air clearances and creepage distances between the power circuits

| | |
|--------------------------------|--|
| Rated insulation voltage | 250 V AC |
| | 250 V AC |
| Rated surge voltage/insulation | Basic insulation 4 kV between all current paths and housing |
| | Safe isolation, reinforced insulation 6 kV: between (A1, A2, S11, S12, S21, S22, S35, M1) and enabling current path (13/14) |
| | between (A1, A2, S11, S12, S21, S22, S35, M1) and enabling current path (23/24) |
| | between enabling current paths |

Supply

| | |
|--|---|
| Designation | A1/A2 |
| Rated control circuit supply voltage U_S | 19.2 V DC ... 30 V DC |
| Rated control circuit supply voltage U_S | 24 V DC -20 % / +25 % |
| Rated control supply current I_S | typ. 40 mA |
| Power consumption at U_S | typ. 0.96 W |
| Inrush current | typ. 20 A ($\Delta t = 10$ μ s at U_S) |
| Filter time | 10 ms (For the logic. At A1 in the event of voltage dips at U_S) |
| Protective circuit | Surge protection; Suppressor diode |
| | Protection against polarity reversal for rated control circuit supply voltage |

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Input data

Digital: Sensor circuit (S12, S22)

| | |
|---|--------------------------------------|
| Description of the input | safety-related sensor inputs |
| Number of inputs | 2 |
| Inrush current | < 10 mA (with U_s/I_x to S12/S22) |
| Concurrence | < 0.5 s |
| Max. permissible overall conductor resistance | 150 Ω |
| Current consumption | < 4.2 mA (with U_s/I_x to S12/S22) |

Digital: Feedback circuit (S35)

| | |
|---|-----------------------------|
| Description of the input | non-safety-related |
| Number of inputs | 1 |
| Inrush current | < 5.5 mA (typ. with U_s) |
| Max. permissible overall conductor resistance | 150 Ω |
| Voltage at input/start and feedback circuit | 24 V DC -20 % / +25 % |
| Current consumption | < 5.1 mA (typ. with U_s) |

Output data

Relay: Enabling current paths (13/14, 23/24)

| | |
|-----------------------------|--|
| Output description | safety-related N/O contacts |
| Number of outputs | 2 (undelayed) |
| Contact switching type | 2 enabling current paths |
| Contact material | AgSnO ₂ (enabling current path) |
| Switching voltage | min. 12 V AC/DC max. 250 V AC/DC |
| Switching power | min. 60 mW |
| Inrush current | min. 3 mA max. 6 A |
| Limiting continuous current | 6 A |
| Sq. Total current | 72 A ² (observe derating) |
| Switching frequency | 0.1 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 6 A gL/gG (N/O contact) |

Signal: M1

| | |
|--------------------------|---------------------------------------|
| Output description | PNP non-safety-related |
| Number of outputs | 1 (digital, PNP) |
| Voltage | 22 V DC ($U_s - 2$ V) |
| Current | max. 100 mA |
| Maximum inrush current | 500 mA ($\Delta t = 1$ ms at U_s) |
| Short-circuit protection | Yes |

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Connection data

Connection technology

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

Conductor connection

| | |
|---|--|
| Connection method | Push-in connection |
| Conductor cross-section rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6) |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6) |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Signaling

| | |
|----------------|------------------|
| Status display | 5 x bi-color LED |
|----------------|------------------|

Dimensions

| | |
|--------|----------|
| Width | 12.5 mm |
| Height | 116.6 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|------------------|--------|
| Color | yellow |
| Housing material | PA |

Characteristics

Safety data

| | |
|----------------------------|------|
| Stop category (EN 60204-1) | 0 |
| Type class | IIIC |

Safety data: EN ISO 13849

| | |
|------------------------|--|
| Performance level (PL) | e (4 A DC13; 5 A AC15; 8760 switching cycles/year) |
|------------------------|--|

Safety data: IEC 61508 - High demand

| | |
|------------------------------|--|
| Safety Integrity Level (SIL) | 3 (4 A DC13; 5 A AC15; 8760 switching cycles/year) |
|------------------------------|--|

Safety data: EN IEC 62061

| | |
|------------------------------|--|
| Safety Integrity Level (SIL) | 3 (4 A DC13; 5 A AC15; 8760 switching cycles/year) |
|------------------------------|--|

Environmental and real-life conditions

Ambient conditions

| | |
|---|------|
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |

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| | |
|--|---|
| Ambient temperature (operation) | -35 °C ... 60 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °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 |

Approvals

CE

| | |
|----------------|--------------|
| Identification | CE-compliant |
|----------------|--------------|

Standards and regulations

Air clearances and creepage distances between the power circuits

| | |
|-----------------------|--------------|
| Standards/regulations | DIN EN 50178 |
|-----------------------|--------------|

Mounting

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|-------------------|------------------------|
| Mounting type | DIN rail mounting |
| Assembly note | See derating curve |
| Mounting position | vertical or horizontal |

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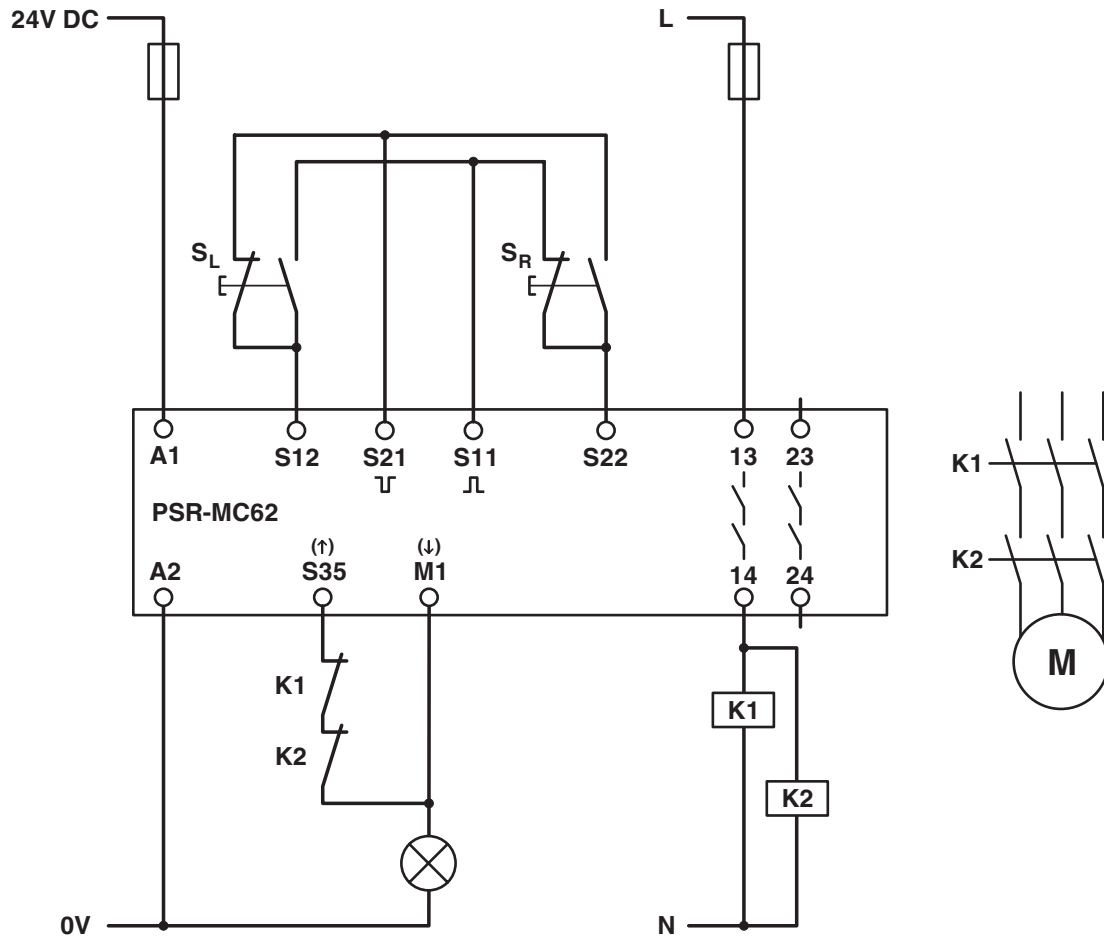


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Drawings

Circuit diagram



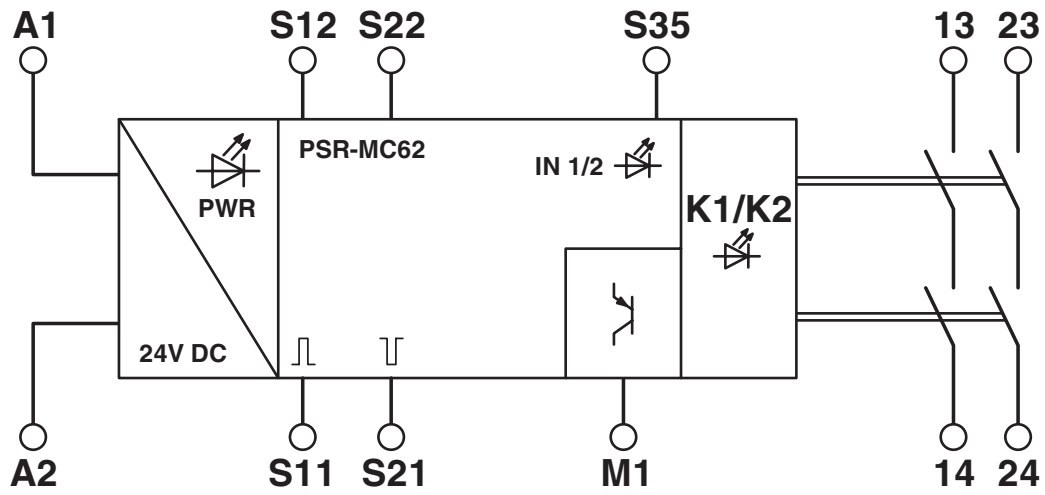
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Block diagram



Block diagram

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Classifications

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121100 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|----------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
|-------------------------------------|----------------------|

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