

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Safety relay for emergency stop, safety doors, light grid up to SILCL 3, Cat. 4, PL e, 1- or 2-channel operation, cross-circuit detection, can be retriggered, fall back/tightening delay 0.2 s to 60 s, 2 enabling current paths, $U_S = 24 \text{ V DC}$, plug-in screw terminal block

Your advantages

- ✓ Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- ✓ Low housing width of just 12.5 mm
- ✓ Single and two-channel control
- ✓ 2 enabling current paths, 1 digital signal output
- ✓ Manually monitored and automatic activation in a single device



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 952484 |
| GTIN | 4046356952484 |
| Weight per Piece (excluding packing) | 300.000 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 | 12.5 mm |
|-------|---------|

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Technical data

Dimensions

| | |
|--------|----------|
| Height | 112.2 mm |
| Depth | 114.5 mm |

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -35 °C ... 60 °C (observe derating) |
| 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) |

Power supply

| | |
|--|---|
| Designation | A1/A2 |
| Rated control circuit supply voltage U_s | 24 V DC -20 % / +25 % |
| | 19.2 V DC ... 30 V DC |
| Rated control supply current I_s | typ. 60 mA |
| Power consumption at U_s | typ. 1.44 W |
| Inrush current | typ. 25 A ($\Delta t = 10 \mu s$ 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 |

Digital inputs

| | |
|---|---|
| Input name | Sensor circuit |
| | S12, S22 |
| Description of the input | safety-related sensor inputs |
| Number of inputs | 2 |
| Input voltage range "0" signal | 0 V DC ... 5 V DC |
| Input current range "0" signal | 0 mA ... 2 mA |
| Inrush current | < 11 mA (typically with U_s) |
| Current consumption | < 4.1 mA (typically with U_s) |
| Filter time | max. 3 ms (Test pulse width of low test pulses) |
| | min. 21 ms (Test pulse rate for low test pulse) |
| | Test pulse rate = 7 x Test pulse width |
| Max. permissible overall conductor resistance | 150 Ω |
| Concurrence | ∞ |
| Limit frequency | min. 0 Hz |
| | max. 1 Hz |

2. Digital inputs

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Technical data

2. Digital inputs

| | |
|---|---|
| Input name | Start circuit |
| | S34 |
| Description of the input | non-safety-related |
| Number of inputs | 1 |
| Inrush current | < 8.6 mA (typically with U_S) |
| Current consumption | < 3.2 mA (typically with U_S) |
| Filter time | max. 3 ms (Test pulse width of low test pulses) |
| | min. 21 ms (Test pulse rate for low test pulse) |
| | Test pulse rate = 7 x Test pulse width |
| Max. permissible overall conductor resistance | 150 Ω |

Relay outputs: enabling current path

| | |
|-----------------------------|---|
| Output name | Enabling current paths |
| | 13/14, 27/28 |
| Output description | safety-related N/O contacts |
| Number of outputs | 1 (undelayed) |
| | 1 (delayed) |
| Contact type | 2 enabling current paths |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 12 V AC/DC |
| | max. 250 V AC (Observe the load curve) |
| Limiting continuous current | 6 A (observe derating) |
| Inrush current | min. 3 mA |
| | max. 6 A |
| Sq. Total current | 72 A ² (observe derating) |
| Switching capacity | min. 60 mW |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 6 A gL/gG (N/O contact) |
| | 4 A gL/gG (for low-demand applications) |

Alarm outputs

| | |
|------------------------|---------------------------------------|
| Designation | M1 |
| Output description | PNP |
| | non-safety-related |
| Number of outputs | 1 |
| Voltage | approx. 23 V DC ($U_S - 1$ V) |
| Current | max. 100 mA |
| Maximum inrush current | 500 mA ($\Delta t = 1$ ms at U_S) |

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Technical data

Alarm outputs

| | |
|--------------------------|-----|
| Short-circuit protection | Yes |
|--------------------------|-----|

Times

| | |
|-----------------------------|---|
| Typical response time at US | < 35 ms (automatic start) |
| | < 30 ms (manual, monitored start) |
| Typical release time at US | < 25 ms (when controlled via S12 (only for undelayed contact 13/14)) |
| | < 5 ms (when interrupted via A1; applicative deactivation via A1/A2 is not permitted) |
| Delay time range | 0.2 s ... 60 s \pm 5 % (can be set for 27/28) |
| Restart time | < 1 s (Boot time) |

General

| | |
|---|--|
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |
| Nominal operating mode | 100% operating factor |
| Net weight | 108.98 g |
| Mounting position | vertical or horizontal |
| Mounting type | DIN rail mounting |
| Assembly instructions | See derating curve |
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Housing material | PBT |
| Housing color | yellow |
| Status display | 5 x bi-color LED |

Connection data

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| pluggable | Yes |
| Conductor cross section solid | 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 |

Safety-related characteristic data

| | |
|--|-------------------------|
| Stop category in accordance with IEC 60204 | 0 |
| | 1 |
| Designation | IEC 61508 - High demand |
| Safety Integrity Level (SIL) | 3 |
| Designation | EN ISO 13849 |

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Technical data

Safety-related characteristic data

| | |
|---|----------|
| Performance level (PL) | e |
| Category | 4 |
| Designation | EN 62061 |
| Safety Integrity Level Claim Limit (SIL CL) | 3 |

Standards and Regulations

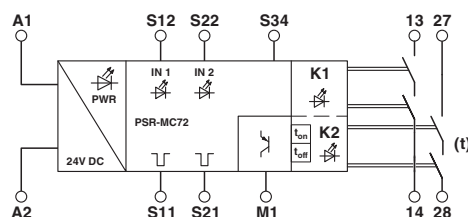
| | |
|--------------------------------|---|
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | DIN EN 50178 |
| Rated insulation voltage | 250 V AC |
| | 250 V AC |
| Rated surge voltage/insulation | Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between (A1, A2, S11, S12, S21, S22, S34, M1) and enabling current path (13/14) between (A1, A2, S11, S12, S21, S22, S34, M1) and enabling current path (27/28) between enabling current paths |
| Degree of pollution | 2 |
| Overvoltage category | III |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |
| Conformance | CE-compliant |

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

Block diagram



Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

Classifications

UNSPSC

| | |
|-------------|----------|
| UNSPSC 20.0 | 39122205 |
| UNSPSC 21.0 | 39122205 |

Approvals

Approvals

Approvals


UL Listed / cUL Listed / Functional Safety / 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 |  | | 01/205/5486.00/16 |
|-------------------|---|--|-------------------|

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