

Safety relays - PSR-SCP-24DC/MXF2/4X1/2X2/B - 2903254

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Multifunctional safety relay for emergency stop and safety doors up to SIL 3, Cat. 4, PL e, automatically or manually monitored activation, 4 N/O contacts, 3 safety functions, 2 shutdown levels, plug-in screw terminal block

Your advantages

- Up to Cat.4/PL e according to EN ISO 13849-1, SILCL 3 according to EN 62061, SIL 3 according to IEC 61508
- 3 safety functions in one device
- Low housing width of only 22.5mm
- No software configuration required
- Also available with push-in connection



Key commercial data

| | |
|-------------------------|---------------|
| package_quantity | 1 |
| GTIN | 4046356730174 |

Technical data

Note

| | |
|--------------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|--------------------------------|---|

Dimensions

| | |
|---------------|----------|
| Width | 22.5 mm |
| Height | 112.2 mm |
| Depth | 114.5 mm |

Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -20 °C ... 45 °C (see derating curve) |
| Ambient temperature (storage/transport) | -25 °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) |

Input data

| | |
|--|---------|
| Nominal input voltage U_N | 24 V DC |
|--|---------|

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Input data

| | |
|--|---|
| Input voltage range in reference to U _N | 0.85 ... 1.1 |
| Typical input current at U _N | 125 mA (with actuated relays) |
| Typical input current at U _N | 55 mA (Two-channel 24 V/0 V + max. 200 mA control (message outputs 32/62) with non-actuated relays) |
| Current consumption | typ. 5 mA (I _{max} /I _x inputs) |
| Current consumption | 20 mA (in electric torque) |
| Voltage at input/start and feedback circuit | 24 V -15 %; +10 % (first channel: 24 V; second channel: 0 V) |
| Typical response time | 175 ms (monitored/manual start) |
| Typical response time | 250 ms (automatic start) |
| Typ. starting time with U _s | 250 ms (when controlled via A1) |
| Typical release time | 25 ms (when controlled via S11/S12 and S21/S22) |
| Typical release time | 20 ms (when controlled via A1) |
| Concurrence input 1/2 | ∞ |
| Recovery time | 1 s (Availability time after activation of sensor circuit: 100ms) |
| Status display | 5 green LEDs |
| Maximum switching frequency | 0.5 Hz |
| Max. permissible overall conductor resistance | 100 Ω |
| Filter time | max. 1.5 ms (Test pulse duration; for all equivalent inputs) |
| Filter time | min. 7.5 ms (Test pulse rate; for all equivalent inputs) |

Output data

| | |
|--|---|
| Contact type | 4 enabling current paths |
| Contact type | 2 semiconductor alarm outputs |
| Contact material | AgCuNi, +0,2 -0,4 μm Au |
| Minimum switching voltage | 10 V AC/DC |
| Maximum switching voltage | 250 V AC/DC |
| Limiting continuous current | 6 A (N/O contact) |
| Limiting continuous current | max. 100 mA (Alarm output (24 V DC)) |
| Inrush current, minimum | 10 mA |
| Maximum inrush current | 6 A |
| Sq. Total current | $72 A^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$ |
| Interrupting rating (ohmic load) max. | 1500 VA (250 V AC, τ = 0 ms) |
| Interrupting rating (ohmic load) max. | 66 W (220 V DC, τ = 0 ms) |
| Interrupting rating (ohmic load) max. | 66 W (110 V DC, τ = 0 ms) |
| Interrupting rating (ohmic load) max. | 100 W (48 V DC, τ = 0 ms) |
| Interrupting rating (ohmic load) max. | 144 W (24 V DC, τ = 0 ms) |
| Maximum interrupting rating (inductive load) | 48 W (24 V DC, τ = 40 ms) |
| Maximum interrupting rating (inductive load) | 43 W (48 V DC, τ = 40 ms) |
| Switching capacity min. | 0.1 W |
| Output fuse | 6 A gL/gG NEOZED (N/O contact) |
| Output fuse | 4 A gL/gG NEOZED (for low-demand applications) |

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General

| | |
|--|---|
| Relay type | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Mechanical service life | 10 x 10 ⁶ cycles |
| Nominal operating mode | 100% operating factor |
| Net weight | 26.1 g |
| Mounting type | DIN rail mounting |
| Assembly instructions | See derating curve |
| Mounting position | vertical or horizontal |
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Control | one and two channel |
| Housing color | yellow |

Connection data

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

Safety-related characteristic data

| | |
|--|--|
| Stop category | 0 |
| Safety Integrity Level (SIL) | 3 |
| Safety Integrity Level (SIL) | 3 |
| Designation | EN ISO 13849 |
| Performance level (PL) | e (5 A DC13; 3 A AC15; 8760 cycles/year) |
| Category | 4 |
| Safety Integrity Level Claim Limit (SIL CL) | 3 |
| Designation | EN 50156 |
| Safety Integrity Level (SIL) | 3 |

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 AC |
| Rated surge voltage/insulation | 4 kV/basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit, enabling current paths and safety circuit 1 (13/14, 23/24) and safety circuit 2 (43/44, 53/54).) |
| Degree of pollution | 2 |

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Standards and Regulations

| | |
|-----------------------------|-----|
| Overvoltage category | III |
|-----------------------------|-----|

Environmental Product Compliance

| | |
|-------------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| China RoHS | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

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 |
| eCl@ss 9.0 | 27371819 |

ETIM

| | |
|-----------------|----------|
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |



UNSPSC


| | |
|----------------------|----------|
| UNSPSC 6.01 | 30211901 |
| UNSPSC 7.0901 | 39121501 |
| UNSPSC 11 | 39121501 |
| UNSPSC 12.01 | 39121501 |
| UNSPSC 13.2 | 39121501 |


Approvals

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

Approval details

| |
|--|
| Functional Safety   |
|--|

| |
|--|
| UL Listed  |
|--|

| |
|---|
| cUL Listed  |
|---|

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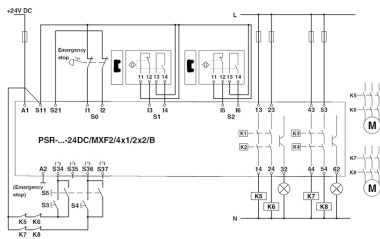
Approvals

EAC ENEC

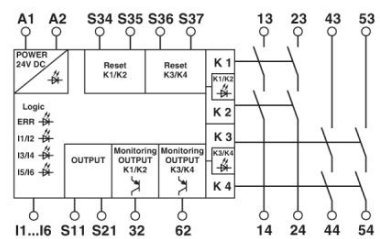
cULus Listed

Drawings

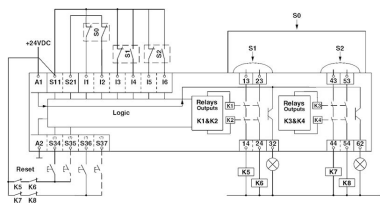
Circuit diagram



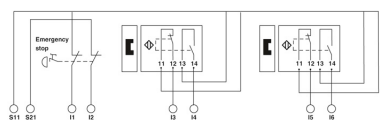
Circuit diagram



Circuit diagram



Circuit diagram



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