

Safety relays - PSR-MS35-1NO-24DC-SC - 2904953

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Safety relay for emergency stop and safety doors up to SILCL 3, Cat. 4, PL e, 1 or 2-channel operation, manual, monitored start, cross-circuit detection, 1 enabling current path, $U_S = 24 \text{ V DC}$, fixed 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 6.8 mm
- Two-channel control
- 1 enabling current path
- Manual and monitored activation
- Cross-circuit detection



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 905015 |
| GTIN | 4046356905015 |

Technical data

Note

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

Dimensions

| | |
|--------|----------|
| Width | 6.8 mm |
| Height | 93.1 mm |
| Depth | 102.5 mm |

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -40 °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) |

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Ambient conditions

| | |
|---|---|
| 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 -15 % / +10 % |
| | 20.4 V DC ... 26.4 V DC |
| Rated control supply current I_s | typ. 42 mA |
| Power consumption at U_s | typ. 1 W |
| Inrush current | 4.5 A ($\Delta t < 120 \mu s$ at U_s) |
| Filter time | 1 ms (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 |
| | S11, S12, S22 |
| Description of the input | safety-related sensor inputs |
| Input voltage range "0" signal | 0 V DC ... 5 V DC (for safe Off; at S12) |
| Input current range "0" signal | 0 mA ... 2 mA (for safe Off; at S12) |
| Inrush current | < 20 mA (with U_s/I_x to S12) |
| | < 5 mA (with U_s/I_x to S22) |
| | > -15 mA (with U_s/I_x to S22/0V) |
| Current consumption | < 5 mA (with U_s/I_x to S12) |
| | < 5 mA (with U_s/I_x to S22) |
| | > -5 mA (with U_s/I_x to S22/0V) |
| Filter time | max. 1.5 ms (at S12, S22; test pulse width) |
| | min. 7.5 ms (at S12, S22; test pulse rate) |
| | Test pulse rate = 5 x Test pulse width |
| Max. permissible overall conductor resistance | 150 Ω |
| Input name | Start circuit |
| | S34 |
| Description of the input | non-safety-related |
| Number of inputs | 1 |
| Input voltage range "1" signal | 20.4 V DC ... 26.4 V DC |
| Inrush current | < 10 mA |
| Current consumption | < 10 mA |
| Max. permissible overall conductor resistance | 150 Ω |
| Protective circuit/component | Suppressor diode |

Relay outputs: enabling current path

| | |
|-------------|-----------------------|
| Output name | Enabling current path |
|-------------|-----------------------|

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Relay outputs: enabling current path

| | |
|-----------------------------|---|
| | 13/14 |
| Output description | safety-related N/O contacts |
| Number of outputs | 1 (undelayed) |
| Contact type | 1 enabling current path |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 12 V AC/DC |
| | max. 250 V AC/DC (Observe the load curve) |
| Limiting continuous current | 6 A (observe derating) |
| Inrush current | min. 3 mA |
| | max. 6 A |
| Sq. Total current | 36 A ² (observe derating) |
| Switching capacity | min. 60 mW |
| Switching frequency | max. 0.5 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 6 A gL/gG (N/O contact) |
| | 4 A gL/gG (for low-demand applications) |

Times

| | |
|-----------------------------|--|
| Typical response time at US | < 175 ms |
| Typical release time at US | < 20 ms (when controlled via A1 or S12 and S22.) |
| Recovery time | < 500 ms |

General

| | |
|---|--|
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |
| Nominal operating mode | 100% operating factor |
| Net weight | 69 g |
| Mounting position | vertical or horizontal |
| Mounting type | DIN rail mounting |
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Housing material | PBT |
| Housing color | yellow |
| Operating voltage display | 1 x green LED |
| Status display | 2 x green LEDs |

Connection data

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| pluggable | no |
| 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 |

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Technical data

Connection data

| | |
|------------------|-------|
| Stripping length | 12 mm |
| Screw thread | M3 |

Safety-related characteristic data

| | |
|---|--|
| Stop category | 0 |
| Designation | IEC 61508 - High demand |
| Safety Integrity Level (SIL) | 3 |
| Designation | IEC 61508 - Low demand |
| Safety Integrity Level (SIL) | 3 |
| Designation | EN ISO 13849 |
| Performance level (PL) | e (4 A DC13; 5 A AC15; 8760 switching cycles/year) |
| 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 | Safe isolation, reinforced insulation 6 kV between input circuit and enabling current path Basic insulation 4 kV between all current paths and housing |
| Degree of pollution | 2 |
| Overvoltage category | III |
| Shock | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |
| Conformance | CE-compliant |

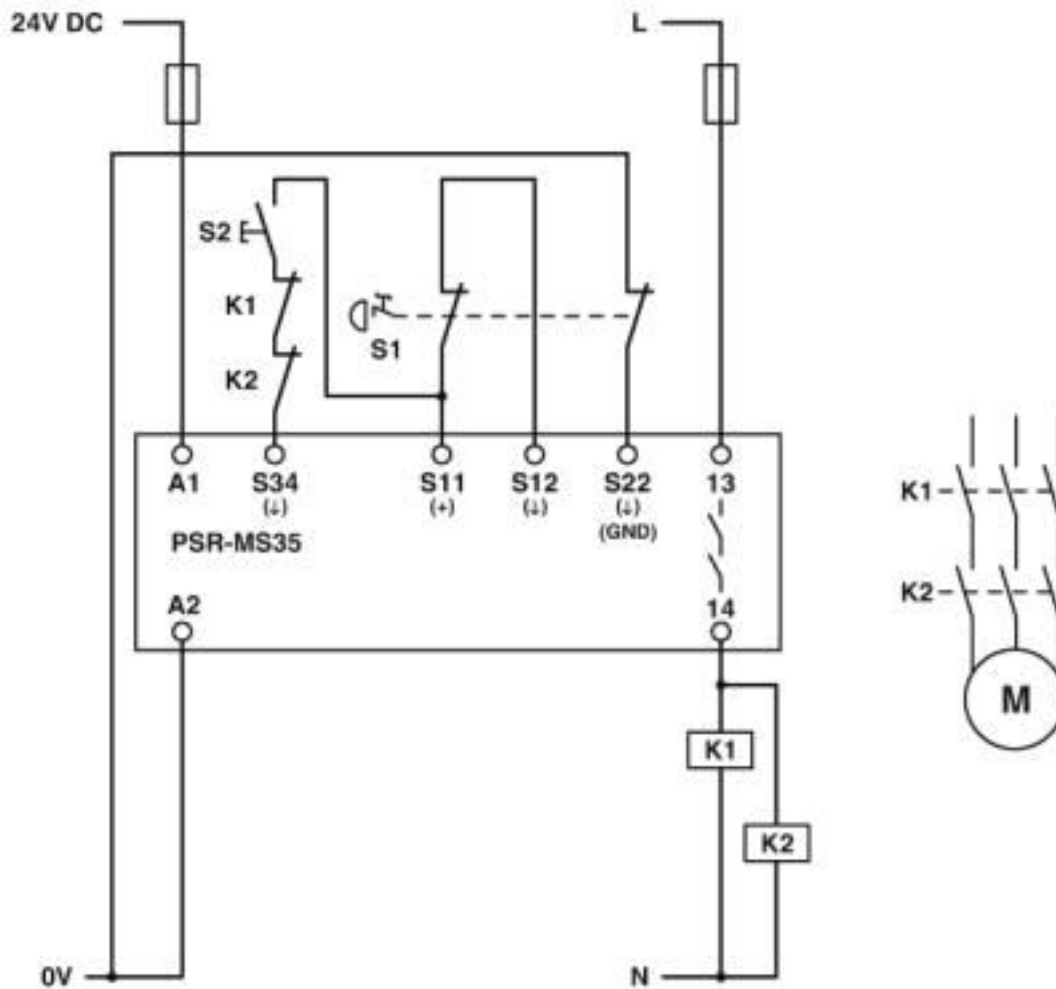
Environmental Product Compliance

| | |
|------------|---|
| 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

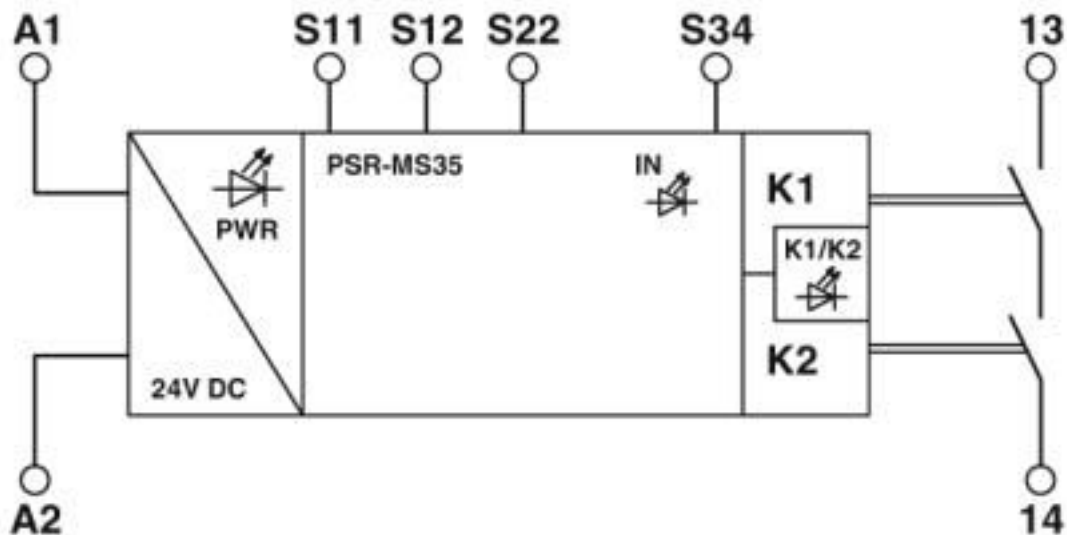
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Application drawing

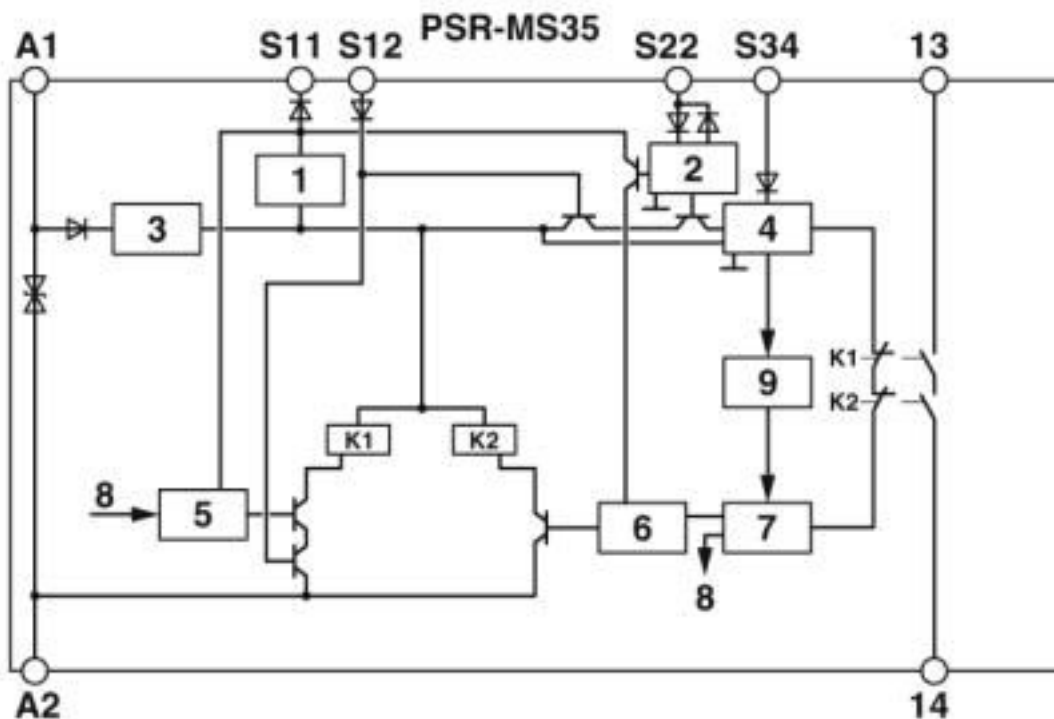


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Block diagram



Block diagram



- Key:
- 1 = Current limitation
 - 2 = Input circuit
 - 3 = Voltage limitation
 - 4 = Start circuit
 - 5 = Control circuit channel 1
 - 6 = Control circuit channel 2
 - 7 = Start channel 1 and 2
 - 8 = Channel 1

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9 = Diagnostics

K1, K2 = Force-guided elementary relays

Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27371819 |
| eCl@ss 4.0 | 40020600 |
| eCl@ss 4.1 | 40020600 |
| eCl@ss 5.0 | 27371900 |
| eCl@ss 5.1 | 27371900 |
| eCl@ss 6.0 | 27371800 |
| eCl@ss 7.0 | 27371819 |
| eCl@ss 8.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |

ETIM

| | |
|----------|----------|
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |
| ETIM 7.0 | EC001449 |

UNSPSC

| | |
|-------------|----------|
| UNSPSC 13.2 | 39121501 |
| UNSPSC 18.0 | 39122205 |
| UNSPSC 19.0 | 39122205 |
| UNSPSC 20.0 | 39122205 |
| UNSPSC 21.0 | 39122205 |

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / EAC / 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 |
|-----------|--|---|---------------|

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Approvals

| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 140324 |
|------------|--|---|---------------|

| | | | |
|-------------------|--|--|-----------------|
| Functional Safety | | | 44-205-13755202 |
|-------------------|--|--|-----------------|

| | | | |
|-----|--|--|--------------------------|
| EAC | | | RU C- DE.A*30.B.01082 |
|-----|--|--|--------------------------|

| | | | |
|-------------------|--|--|-----------------|
| Functional Safety | | | 44-780-13755207 |
|-------------------|--|--|-----------------|

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

Accessories

Accessories

Terminal marking

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

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[C500ETL01](#) [C500OD415CN](#) [2-1618068-0](#) [9-1618103-2](#) [SP10-ETL01](#) [22-060X](#) [C200HNC112](#) [C200HOD214](#) [C500CN812N](#) [4NK0AQY](#)
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[607.5111.020](#) [DOLD 48173](#) [CS AR-02V024](#) [CS AR-22V024](#) [CS AR-22V230](#) [CS AR-46V024](#) [750136](#) [PSR-MS21-1NO-1DO-24DC-SC](#)
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