

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

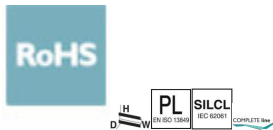
Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Safety relay for monitoring non-equivalent signal generators up to SILCL 3, Cat. 4, PL e, 2-channel, non-equivalent operation, manual, monitored start, 1 enabling current path, $U_S = 24$ 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 non-equivalent control
- ✓ 1 enabling current path, 1 digital signal output
- ✓ Manual and monitored activation



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 904872 |
| GTIN | 4046356904872 |
| Weight per Piece (excluding packing) | 80.000 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 | 6.8 mm |
| Height | 93.1 mm |

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Technical data

Dimensions

| | |
|-------|----------|
| 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) |
| 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 |
| | S12, S13 |
| 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) |
| | < 20 mA (with U_s/I_x to S13) |
| Current consumption | < 5 mA (with U_s/I_x to S12) |
| | < 5 mA (with U_s/I_x to S13) |
| Filter time | max. 1.5 ms (at S12, S13; test pulse width) |
| | min. 7.5 ms (at S12, S13; 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 |

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Technical data

Digital inputs

| | |
|---|-------------------------|
| 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 |
| | 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) |

Alarm outputs

| | |
|--------------------------|---------------------------------------|
| Designation | M1 |
| Output description | 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 (Δt = 1 ms at U _s) |
| Short-circuit protection | no |

Times

| | |
|-----------------------------|--|
| Typical pickup time at US | < 250 ms (when controlled via A1) |
| Typical response time at US | < 175 ms |
| Typical release time at US | < 20 ms (when controlled via A1 or S12 and S13.) |

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Technical data

Times

| | |
|---------------|----------|
| Recovery time | < 500 ms |
|---------------|----------|

General

| | |
|---|--|
| Relay type | Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205) |
| 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 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. | 26 |
| Conductor cross section AWG max. | 12 |
| 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 |

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Technical data

Standards and Regulations

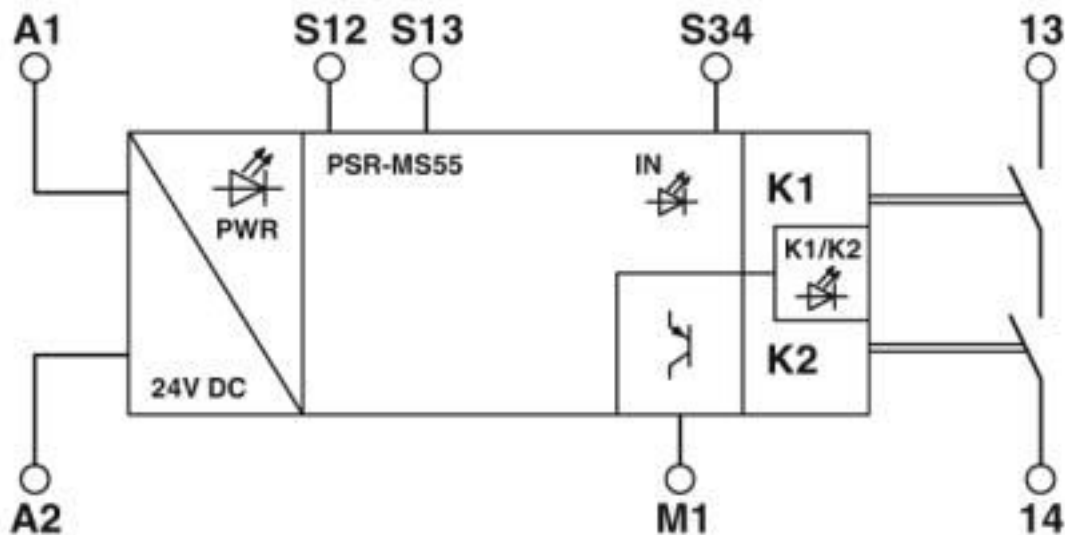
| | |
|--------------------------------|---|
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | DIN EN 50178 |
| Rated insulation voltage | 250 V AC |
| | 250 V AC |
| Rated surge voltage/insulation | Safe isolation, reinforced insulation 6 kV 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" |

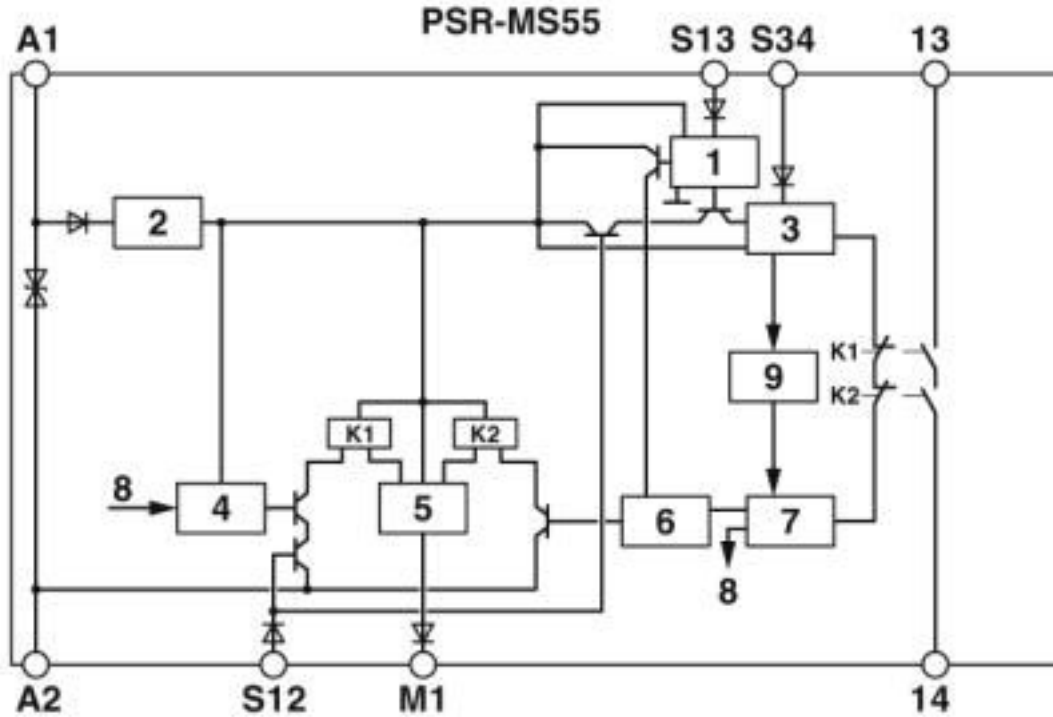
Drawings

Block diagram



Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

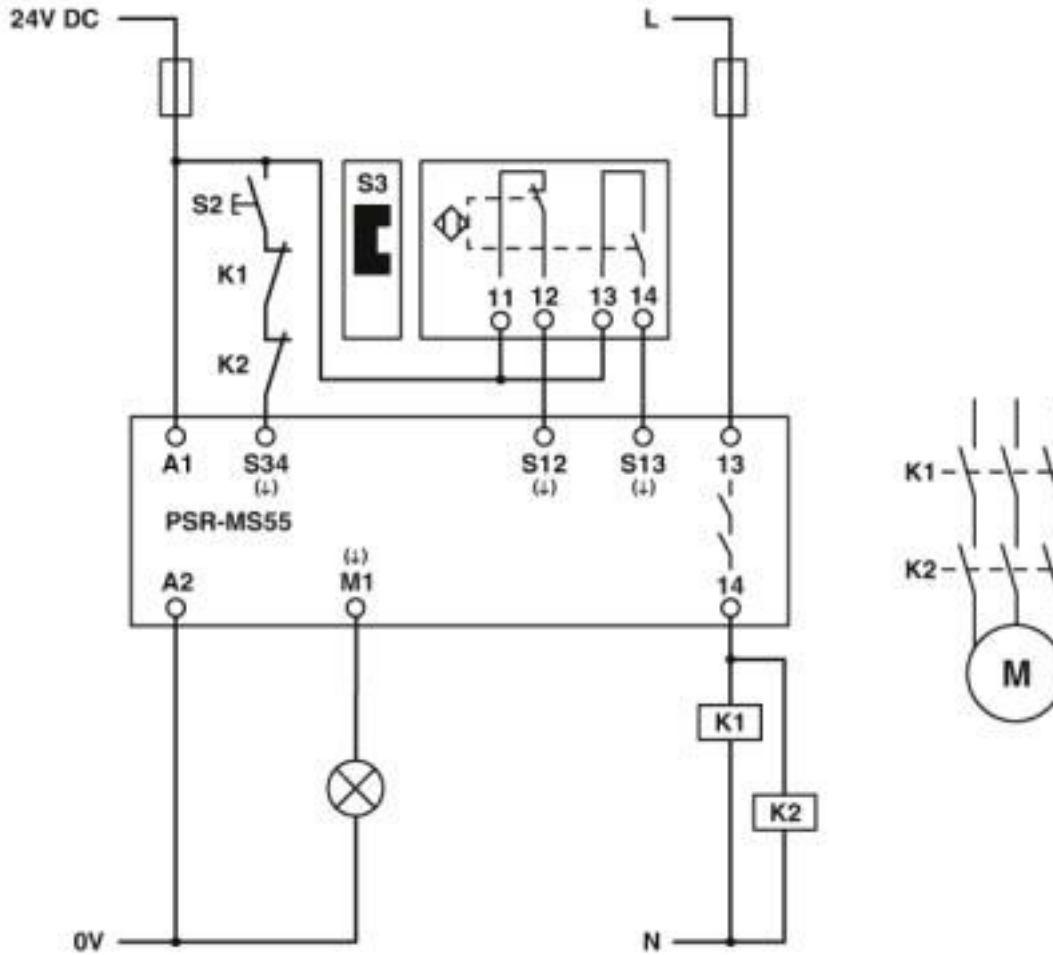
Block diagram



- Key:
- 1 = Input circuit
 - 2 = Voltage limitation
 - 3 = Start circuit
 - 4 = Control circuit channel 1
 - 5 = Control circuit signal output
 - 6 = Control circuit channel 2
 - 7 = Start channel 1 and 2
 - 8 = Channel 1
 - 9 = Diagnostics
 - K1, K2 = Force-guided elementary relays

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Circuit diagram



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 |

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Classifications

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

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 | | 44-205-13755202 |
|-------------------|--|-----------------|

Safety relays - PSR-MS55-1NO-1DO-24DC-SC - 2904957

Approvals

| | | | |
|-----------|--|---|---------------|
| 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 | | | 44-205-13755202 |
|-------------------|--|--|-----------------|

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

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

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

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

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

