

PSR-SCP- 24UC/THC4/2X1/1X2 - Safety relays



2963721

<https://www.phoenixcontact.com/us/products/2963721>

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Safety relay for two-hand control devices in accordance with ISO 13851 type IIIC to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, synchronous activation monitoring < 0.5 s, 2 N/O contacts, 1 N/C contact, safe isolation, width: 22.5 mm, pluggable screw terminal block

Your advantages

- For two-hand controls in accordance with ISO 13851 type IIIC
- Up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- 2 channel control
- Synchronous activation monitoring < 0.5 s
- Automatic activation
- Two enabling and one signaling current path

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2963721 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA141 |
| GTIN | 4017918818692 |
| Weight per piece (including packing) | 186 g |
| Weight per piece (excluding packing) | 163.12 g |
| Customs tariff number | 85371098 |
| Country of origin | DE |

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Technical data

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Product properties

| | |
|-------------------------|--|
| Product type | Safety relays |
| Product family | PSRclassic |
| Application | Two-hand control Safety door |
| Mechanical service life | approx. 10^7 cycles |
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

Insulation characteristics

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

Times

| | |
|-----------------------|--|
| Typical response time | 50 ms (automatic start) |
| Typical release time | 90 ms (on demand via the sensor circuit) 20 ms (on demand via A1) |
| Delay time | < 500 ms (fixed setting) |
| Restart time | < 1 s (Boot time, after switching on the supply voltage) |
| Recovery time | < 500 ms (following demand of the safety function) |

Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | 16.6 W ($U_S = 26.4$ V, $I_L^2 = 72$ A ² , $P_{Total\ max} = 2.2$ W + 14.4 W) |
| Nominal operating mode | 100% operating factor |
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | 6 kV / Safe isolation, increased insulation |

Supply

| | |
|--|---|
| Designation | A1/A2 |
| Rated control circuit supply voltage U_S | 24 V AC/DC -15 %; +10 % |
| Rated control supply current I_S | 125 mA AC (at U_S) 60 mA DC (at U_S) |
| Power consumption at U_S | typ. 1.6 W |
| Apparent power | 3.6 VA (at U_S) |
| Filter time | 3 ms (Rate > 100 ms) |
| Protective circuit | Serial protection against polarity reversal Surge protection Suppressor diode |

Input data

Digital: Sensor circuit (S11, S21)

| | |
|---|--------------------------------------|
| Description of the input | safety-related sensor inputs |
| Number of inputs | 2 |
| Input voltage range "0" signal | 0 V DC ... 5 V DC |
| Input voltage range "1" signal | > 18.5 V |
| Input current range "0" signal | 0 mA ... 2 mA |
| Filter time | No test pulses permitted |
| Concurrence | < 500 ms |
| Max. permissible overall conductor resistance | 50 Ω |
| Protective circuit | Suppressor diode |
| Current consumption | < 100 mA (typ. with U _S) |

Digital: Feedback circuit (Y1, Y2)

| | |
|---|--------------------------|
| Description of the input | non-safety-related |
| Number of inputs | 1 |
| Input voltage range "1" signal | > 18.5 V |
| Filter time | No test pulses permitted |
| Max. permissible overall conductor resistance | 50 Ω |

Output data

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

| | |
|-----------------------------|---|
| Output description | 2 N/O contacts each in series, safety-related, floating |
| Number of outputs | 2 |
| Contact switching type | 2 enabling current paths |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 10 V AC/DC max. 250 V AC |
| Switching power | min. 100 mW |
| Inrush current | min. 10 mA max. 6 A |
| Switching capacity | 6 A (DC13) 5 A (AC15) |
| Limiting continuous current | 6 A (observe derating) |
| Sq. Total current | 72 A ² (observe derating) |
| Switching frequency | max. 0.1 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 10 A gL/gG 4 A gL/gG (for low-demand applications) |

Relay: Signaling current path (31/32)

| | |
|--------------------|---|
| Output description | 2 N/C contacts parallel, non-safety-related, floating |
| Number of outputs | 1 |

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| | |
|-----------------------------|----------------------------------|
| Contact switching type | 1 signaling current path |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 10 V AC/DC max. 250 V AC |
| Switching power | min. 100 mW |
| Inrush current | min. 10 mA max. 5 A |
| Switching capacity | 1.5 A (AC15) 2 A (DC13) |
| Limiting continuous current | 5 A |
| Sq. Total current | 25 A ² |
| Switching frequency | max. 0.1 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 5 A gL/gG |

Connection data

Connection technology

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

Conductor connection

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Conductor cross-section rigid | 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 |

Signaling

| | |
|---------------------------|---------------------|
| Status display | 2 x LED (green) |
| Operating voltage display | 1 x green LED (PWR) |

Dimensions

| | |
|--------|----------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|------------------|-------------------|
| Color (Housing) | yellow (RAL 1018) |
| Housing material | PA |

Characteristics

Safety data

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

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Safety data: EN ISO 13849

| | |
|------------------------|---|
| Performance level (PL) | e |
|------------------------|---|

Safety data: IEC 61508 - High demand

| | |
|------------------------------|---|
| Safety Integrity Level (SIL) | 3 |
|------------------------------|---|

Safety data: IEC 61508 - Low demand

| | |
|------------------------------|---|
| Safety Integrity Level (SIL) | 3 |
|------------------------------|---|

Safety data: EN IEC 62061

| | |
|------------------------------|---|
| Safety Integrity Level (SIL) | 3 |
|------------------------------|---|

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Ambient temperature (operation) | -20 °C ... 55 °C |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Maximum altitude | max. 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

Conformity/Approvals

| | |
|-------------|--------------|
| Conformance | CE-compliant |
|-------------|--------------|

Mounting

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

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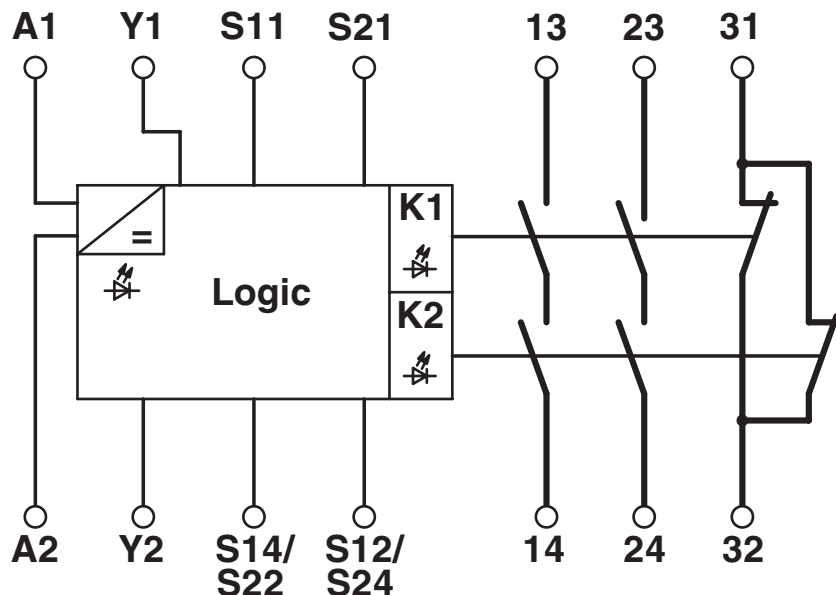


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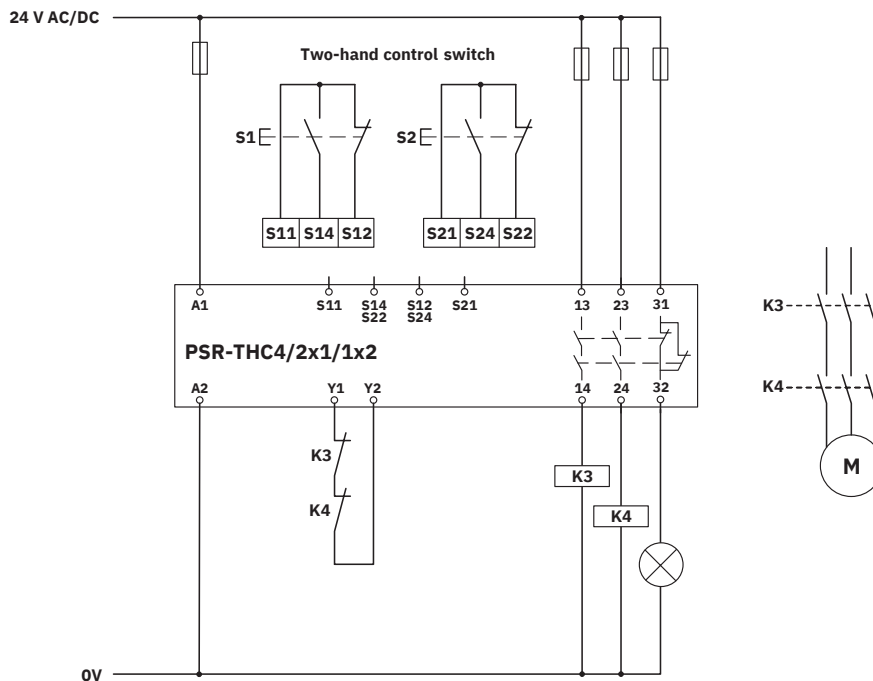
Drawings

Circuit diagram



Block diagram

Circuit diagram



Two-hand control device

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Approvals

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cULus Listed

Approval ID: E140324



Functional Safety

Approval ID: 01/205/0542.04/23

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27371821 |
| ECLASS-15.0 | 27371821 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001452 |
|-----------|----------|

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) |
| SCIP | ad09c00b-7a7f-44ce-99b7-1943080c4694 |

EF3.1 Climate Change

| | |
|---------|--------------|
| CO2e kg | 4.88 kg CO2e |
|---------|--------------|

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