

## Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

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 and safety door monitoring up to SIL 3 or Cat. 4, PL e (EN ISO 13849), one- or two-channel operation, automatic or manual activation, 3 N/O contacts, 1 N/C contact, 2 N/O contacts with dropout delay of 0.2 s to 300 s, plug-in screw terminal block

### Why buy this product

- ✓ Maximum of 3 undelayed and 2 dropout delay contacts
- ✓ Manually monitored and automatic activation
- ✓ Up to Cat. 3/4 and PL d/e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- ✓ For emergency stop and safety door monitoring, plus evaluation of light grids
- ✓ Single and two-channel control
- ✓ Adjustable delay time of 0.2 s ... 300 s (24 increments)
- ✓ Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 STK                                                                                                   |
| GTIN                                 | <br>4 017918 975227 |
| GTIN                                 | 4017918975227                                                                                           |
| Weight per Piece (excluding packing) | 430.000 g                                                                                               |
| Custom tariff number                 | 85371099                                                                                                |
| Country of origin                    | Germany                                                                                                 |

### Technical data

#### Note

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

#### Dimensions

|        |       |
|--------|-------|
| Width  | 45 mm |
| Height | 99 mm |

# Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

## Technical data

### Dimensions

|       |          |
|-------|----------|
| Depth | 114.5 mm |
|-------|----------|

### Ambient conditions

|                                                |                                                     |
|------------------------------------------------|-----------------------------------------------------|
| Ambient temperature (operation)                | -20 °C ... 55 °C (observe derating)                 |
| Ambient temperature (storage/transport)        | -40 °C ... 70 °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) |
| Shock                                          | 15g                                                 |
| Vibration (operation)                          | 10 Hz ... 150 Hz, 2g                                |
| Maximum altitude                               | ≤ 2000 m (Above sea level)                          |

### Input data

|                                               |                                                     |
|-----------------------------------------------|-----------------------------------------------------|
| Rated control circuit supply voltage $U_s$    | 24 V DC -15 % / +10 %                               |
| Power consumption at $U_s$                    | typ. 3.72 W                                         |
| Rated control supply current $I_s$            | typ. 155 mA                                         |
| Inrush current                                | 200 mA (at $U_s$ )                                  |
| Current consumption                           | < 40 mA (with $U_s/I_x$ to S10)                     |
|                                               | < 50 mA (with $U_s/I_x$ to S12)                     |
|                                               | > -40 mA (with $U_s/I_x$ to S22)                    |
|                                               | 0 mA (with $U_s/I_x$ to S34)                        |
|                                               | < 5 mA (with $U_s/I_x$ to S35)                      |
| Voltage at input/start and feedback circuit   | 24 V DC -15 % / +10 %                               |
| Typical response time                         | < 600 ms (automatic start)                          |
|                                               | < 70 ms (manual start)                              |
| Typ. starting time with $U_s$                 | < 600 ms (when controlled via A1)                   |
| Typical release time                          | < 20 ms (when controlled via S11/S12 and S21/S22)   |
|                                               | < 20 ms (when controlled via A1)                    |
| Concurrence input 1/2                         | ∞                                                   |
| Recovery time                                 | < 1 s                                               |
| Status display                                | 4 x green LEDs                                      |
| Maximum switching frequency                   | 0.5 Hz                                              |
| Max. permissible overall conductor resistance | approx. 22 Ω (Input and start circuits at $U_s$ )   |
| Filter time                                   | 1 ms (at A1 in the event of voltage dips at $U_s$ ) |
|                                               | max. 1.5 ms (at S10, S12; test pulse width)         |
|                                               | 7.5 ms (at S10, S12; test pulse rate)               |
|                                               | Test pulse rate = 5 x Test pulse width              |

### Output data

|                           |                          |
|---------------------------|--------------------------|
| Contact type              | 5 enabling current paths |
|                           | 1 signaling current path |
| Contact material          | AgSnO <sub>2</sub>       |
| Minimum switching voltage | 5 V AC/DC                |

# Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

## Technical data

### Output data

|                                              |                                                              |
|----------------------------------------------|--------------------------------------------------------------|
| Maximum switching voltage                    | 250 V AC/DC (Observe the load curve)                         |
| Limiting continuous current                  | 6 A (N/O contact, pay attention to the derating)             |
|                                              | 6 A (N/C contact)                                            |
| Inrush current, minimum                      | 10 mA                                                        |
| Maximum inrush current                       | 20 A ( $\Delta t$ # 100 ms, undelayed contacts)              |
|                                              | 8 A (delayed contacts)                                       |
| Sq. Total current                            | 55 A <sup>2</sup> (observe derating)                         |
| Interrupting rating (ohmic load) max.        | 144 W (24 V DC, $\tau$ = 0 ms)                               |
|                                              | 288 W (48 V DC, $\tau$ = 0 ms)                               |
|                                              | 110 W (110 V DC, $\tau$ = 0 ms, delayed contacts: 77 W)      |
|                                              | 88 W (220 V DC, $\tau$ = 0 ms)                               |
|                                              | 1500 VA (250 V AC, $\tau$ = 0 ms, delayed contacts: 2000 VA) |
| Maximum interrupting rating (inductive load) | 42 W (24 V DC, $\tau$ = 40 ms, delayed contacts: 48 W)       |
|                                              | 42 W (48 V DC, $\tau$ = 40 ms, delayed contacts: 40 W)       |
|                                              | 42 W (110 V DC, $\tau$ = 40 ms, delayed contacts: 35 W)      |
|                                              | 42 W (220 V DC, $\tau$ = 40 ms, delayed contacts: 33 W)      |
| Switching capacity min.                      | 50 mW                                                        |
| Output fuse                                  | 10 A gL/gG (N/O contact)                                     |
|                                              | 6 A gL/gG (N/C contact)                                      |

### General

|                                             |                                                                                   |
|---------------------------------------------|-----------------------------------------------------------------------------------|
| Relay type                                  | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Mechanical service life                     | 10 x 10 <sup>6</sup> cycles                                                       |
| Nominal operating mode                      | 100% operating factor                                                             |
| Net weight                                  | 430 g                                                                             |
| Mounting type                               | DIN rail mounting                                                                 |
| Mounting position                           | any                                                                               |
| Degree of protection                        | IP54                                                                              |
|                                             | IP20                                                                              |
| Min. degree of protection of inst. location | IP54                                                                              |
| Control                                     | one and two channel                                                               |
| Housing material                            | PBT                                                                               |
| Housing color                               | yellow                                                                            |

### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| pluggable                             | Yes                 |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |

## Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

### Technical data

#### Connection data

|                                  |      |
|----------------------------------|------|
| 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                                |
|                                             | 1                                |
| Designation                                 | IEC 61508 - High demand          |
| Safety Integrity Level (SIL)                | 3 (for delayed contacts SIL 2)   |
| Designation                                 | IEC 61508 - Low demand           |
| Safety Integrity Level (SIL)                | 3 (for delayed contacts SIL 2)   |
| Designation                                 | EN ISO 13849                     |
| Performance level (PL)                      | e (for delayed contacts PL d)    |
| Category                                    | 4 (Undelayed contacts)           |
| Designation                                 | EN 62061                         |
| Safety Integrity Level Claim Limit (SIL CL) | 3 (for delayed contacts SILCL 2) |

#### Standards and Regulations

|                                |                                                                                                                                                                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock                          | 15g                                                                                                                                                                                                                             |
| 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 | Basic insulation 4 kV:<br>between all current paths and housing<br>Safe isolation, reinforced insulation 6 kV:<br>between 13/14, 23/24, 33/34, and the remaining current paths<br>between 13/14, 23/24, 33/34 among one another |
| Degree of pollution            | 2                                                                                                                                                                                                                               |
| Overvoltage category           | III                                                                                                                                                                                                                             |
| Vibration (operation)          | 10 Hz ...150 Hz, 2g                                                                                                                                                                                                             |
| Conformance                    | CE-compliant                                                                                                                                                                                                                    |

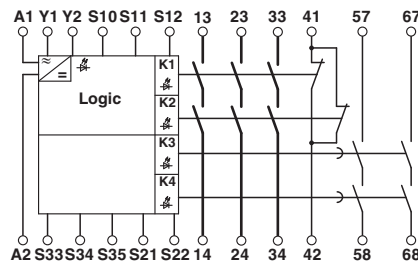
#### Environmental Product Compliance

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

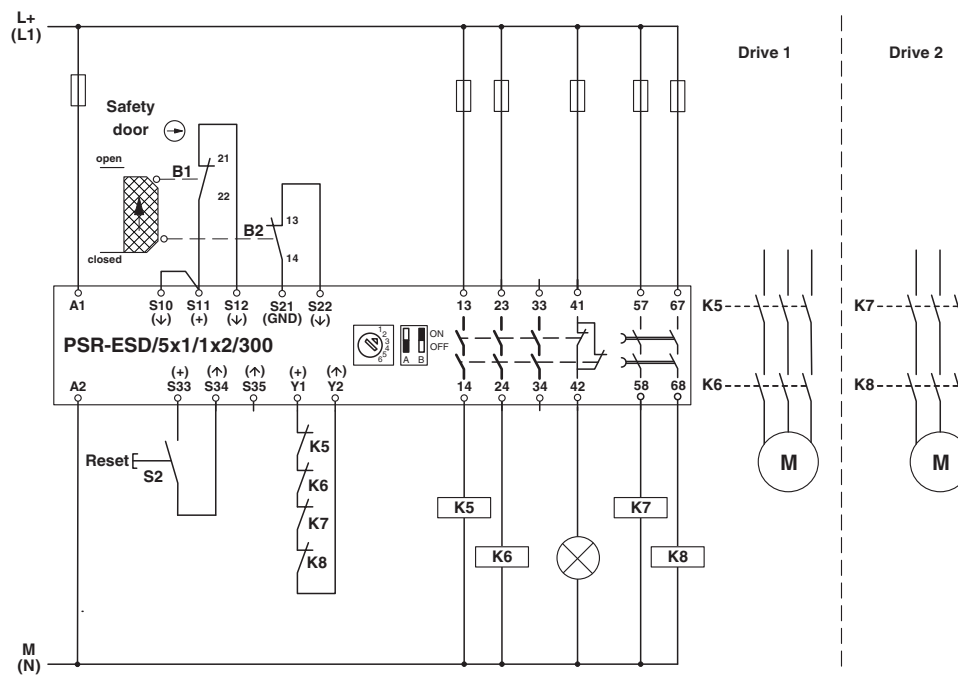
### Drawings

## Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

Circuit diagram



Circuit diagram



Two-channel safety door monitoring

### 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 2.0 | EC001449 |
|----------|----------|

## Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

### Classifications

#### 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

#### Approvals

#### Approvals

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

#### Ex Approvals

#### Approval details

|           |                                                                                     |                                                                                                                                                       |               |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 140324 |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|            |                                                                                     |                                                                                                                                                       |               |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| cUL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 140324 |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|                   |                                                                                     |                   |
|-------------------|-------------------------------------------------------------------------------------|-------------------|
| Functional Safety |  | 01/205/5347.01/16 |
|-------------------|-------------------------------------------------------------------------------------|-------------------|

|     |                                                                                     |                     |
|-----|-------------------------------------------------------------------------------------|---------------------|
| EAC |  | 7500651.22.01.00244 |
|-----|-------------------------------------------------------------------------------------|---------------------|

## Safety relays - PSR-SCP- 24DC/ESD/5X1/1X2/300 - 2981428

### Approvals

EAC



EAC-Zulassung

cULus Listed

