

## Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

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Coupling relay for SIL 3 high- and low-demand applications, couples digital output signals to the I/O, 1 enabling current path, 1 digital signal output, safe state off applications, test pulse filter, fixed screw terminal block

### Why buy this product

- ✓ Up to SIL 3 according to IEC 61508
- ✓ Forcibly guided contacts according to EN 50205
- ✓ Easy proof test according to IEC 61508 thanks to integrated signal contact
- ✓ Approved for Class I, Zone 2 applications
- ✓ Low housing width of just 6.8 mm
- ✓ Self-regulation with device-internal lock
- ✓ Manually monitored and automatic activation in a single device
- ✓ Long service life thanks to filtering of controller test pulses
- ✓ 1 enabling current path, 1 digital signal output
- ✓ Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation



### Key Commercial Data

|                                      |           |
|--------------------------------------|-----------|
| Packing unit                         | 1 STK     |
| Weight per Piece (excluding packing) | 120.000 g |
| Custom tariff number                 | 85364900  |
| Country of origin                    | Germany   |

### Technical data

#### Note

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

#### Dimensions

# Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

## Technical data

### Dimensions

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

### Ambient conditions

|                                                |                                                     |
|------------------------------------------------|-----------------------------------------------------|
| Ambient temperature (operation)                | -40 °C ... 70 °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) |
| Shock                                          | 15g                                                 |
| Vibration (operation)                          | 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. 1.2 W                                         |
| Rated control supply current $I_s$            | typ. 50 mA                                         |
| Inrush current                                | 400 mA ( $\Delta t < 10 \mu s$ at $U_s$ )          |
| Current consumption                           | < 5 mA (Y1-Y2)                                     |
| Voltage at input/start and feedback circuit   | 24 V DC -15 % / +10 % (Y1-Y2)                      |
| Typ. starting time with $U_s$                 | < 200 ms (when controlled via A1, automatic start) |
| Typical release time                          | < 35 ms (when controlled via A1)                   |
| Recovery time                                 | 500 ms                                             |
| Status display                                | 2 x green LEDs                                     |
| Maximum switching frequency                   | 0.5 Hz                                             |
| Max. permissible overall conductor resistance | 150 $\Omega$ (Y1-Y2)                               |
| Filter time                                   | max. 2 ms (at A1-A2; test pulse width)             |
|                                               | ≥ 100 ms (at A1-A2; test pulse rate)               |

### Output data

|                             |                                      |
|-----------------------------|--------------------------------------|
| Contact type                | 1 enabling current path              |
| Contact material            | AgSnO <sub>2</sub>                   |
| Minimum switching voltage   | 12 V AC/DC                           |
| Maximum switching voltage   | 250 V AC/DC                          |
| Limiting continuous current | 6 A (observe derating)               |
| Inrush current, minimum     | 3 mA                                 |
| Maximum inrush current      | 6 A                                  |
| Sq. Total current           | 36 A <sup>2</sup> (observe derating) |

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### Technical data

#### Output data

|                    |                                         |
|--------------------|-----------------------------------------|
| Switching capacity | min. 60 mW                              |
| Output fuse        | 6 A gL/gG (N/O contact)                 |
|                    | 4 A gL/gG (for low-demand applications) |

#### Alarm outputs

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Number of outputs        | 1 (digital, PNP)                              |
| Voltage                  | 22 V DC ( $U_s - 2 V$ )                       |
| Current                  | max. 100 mA                                   |
| Maximum inrush current   | 500 mA ( $\Delta t = 1 \text{ ms}$ at $U_s$ ) |
| Short-circuit protection | no                                            |
| Output fuse              | 150 mA fast blow (signal output)              |

#### General

|                                             |                                                                                                    |
|---------------------------------------------|----------------------------------------------------------------------------------------------------|
| Relay type                                  | Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205) |
| Mechanical service life                     | $10 \times 10^6$ cycles                                                                            |
| Nominal operating mode                      | 100% operating factor                                                                              |
| Net weight                                  | 123.9 g                                                                                            |
| Mounting type                               | DIN rail mounting                                                                                  |
| Assembly instructions                       | See derating curve                                                                                 |
| Mounting position                           | vertical, horizontal, with front of module upward                                                  |
| Degree of protection                        | IP20                                                                                               |
| Min. degree of protection of inst. location | IP54                                                                                               |
| Control                                     | single-channel                                                                                     |
| Housing material                            | PBT                                                                                                |
| Housing color                               | yellow                                                                                             |

#### Connection data

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| pluggable                             | no                  |
| 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> |
| Conductor cross section AWG min.      | 26                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 12 mm               |
| Screw thread                          | M3                  |

#### Safety-related characteristic data

Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

Technical data

Safety-related characteristic data

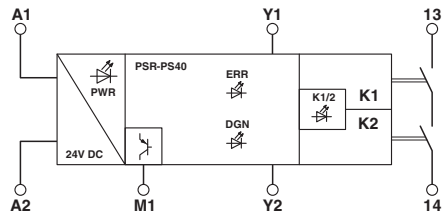
|                              |                              |
|------------------------------|------------------------------|
| Stop category                | 0                            |
| Designation                  | IEC 61508 - High demand      |
| Safety Integrity Level (SIL) | 3 (< 15% of the overall SIL) |
| Designation                  | IEC 61508 - Low demand       |
| Safety Integrity Level (SIL) | 3 (< 15% of the overall SIL) |
| Designation                  | EN 50156                     |
| Safety Integrity Level (SIL) | 3                            |

Standards and Regulations

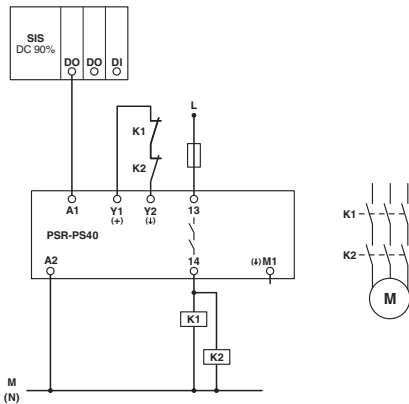
|                                |                                                                                                                                                                                           |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock                          | 15g                                                                                                                                                                                       |
| Designation                    | Air clearances and creepage distances between the power circuits                                                                                                                          |
| Standards/regulations          | DIN EN 50178, EN 60079-15                                                                                                                                                                 |
| Rated insulation voltage       | 250 V AC                                                                                                                                                                                  |
| Rated surge voltage/insulation | Safe isolation, reinforced insulation 6 kV from control circuit, start circuit, signal output to the enabling current path; 4 kV / basic insulation between all current paths and housing |
| Degree of pollution            | 2                                                                                                                                                                                         |
| Overvoltage category           | III                                                                                                                                                                                       |
| Vibration (operation)          | 2g                                                                                                                                                                                        |
| Conformance                    | CE-compliant                                                                                                                                                                              |
| UL, USA/Canada                 | cULus                                                                                                                                                                                     |
|                                | Class I, Zone 2, AEx nA nC IIC T4 / Ex nA nC IIC Gc T4 X                                                                                                                                  |
| GL                             | C, EMC2                                                                                                                                                                                   |

Drawings

Block diagram



Circuit diagram



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### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.1 | 27371901 |
| eCl@ss 6.0 | 27371819 |
| eCl@ss 8.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 5.0 | EC001449 |
|----------|----------|

### Approvals

#### Approvals

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UL Listed / cUL Listed / EAC / GL / Functional Safety / 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 |
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|                         |
|-------------------------|
| EAC 7500651.22.01.00244 |
|-------------------------|

|                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------|
| GL <a href="http://www.gl-group.com/newbuilding/approvals/index.html">http://www.gl-group.com/newbuilding/approvals/index.html</a> 11253-14 HH |
|------------------------------------------------------------------------------------------------------------------------------------------------|

|                                   |
|-----------------------------------|
| Functional Safety 44-780-13755203 |
|-----------------------------------|

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



单击下面可查看定价，库存，交付和生命周期等信息

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