

## Safety relays - PSR-SCP- 24DC/ESD/4X1/30 - 2981800

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, automatic or manual activation, 2 N/O contacts with dropout delay of 0.1 s to 30 s, plug-in screw connection terminal block

### Your advantages

- ✓ 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
- ✓ Fixed delay times of 0.1 s ... 300 s
- ✓ 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 pc  |
| GTIN         | <br>4 046356 117968 |
| GTIN         | 4046356117968   |

### Technical data

#### Note

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

#### Dimensions

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

#### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Ambient temperature (operation) | -20 °C ... 45 °C |
|---------------------------------|------------------|

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### Ambient conditions

|  |   |
|--|---|
| 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) |
| Maximum altitude                               | ≤ 2000 m (Above sea level)                          |

### Input data

|   |   |
|---|---|
| Nominal input voltage $U_N$                   | 24 V DC                                   |
| Input voltage range in reference to $U_N$     | 0.85 ... 1.1                              |
| Typical input current at $U_N$                | 75 mA DC                                  |
| Voltage at input/start and feedback circuit   | approx. 24 V DC                           |
| Typical response time                         | 150 ms (Monitored/manual and auto-start)  |
| Typical release time                          | 20 ms (Undelayed contacts)                |
|   | 100 ms (delayed contacts)                 |
| Typical release time range                    | 0.1 s ... 30 s                            |
| Recovery time                                 | 330 ms (Restart)                          |
|   | 1 s (Electric torque)                     |
| Operating voltage display                     | Green LED                                 |
| Status display                                | LED K1/K2 and K3(t)/K4(t), green          |
| Protective circuit                            | Suppressor diode, 33 V DC                 |
| Max. permissible overall conductor resistance | 500 Ω (Input and reset circuit at $U_N$ ) |

### Output data

|  |                                      |
|--|--------------------------------------|
| Contact type                                 | 4 enabling current paths             |
| Contact material                             | AgSnO <sub>2</sub>                   |
| Maximum switching voltage                    | 250 V AC/DC                          |
| Minimum switching voltage                    | 15 V AC/DC                           |
| Limiting continuous current                  | 6 A (N/O contact)                    |
| Maximum inrush current                       | 6 A                                  |
| Inrush current, minimum                      | 25 mA                                |
| Sq. Total current                            | 120 A <sup>2</sup> (see to derating) |
| Interrupting rating (ohmic load) max.        | 144 W (24 V DC, τ = 0 ms)            |
|  | 288 W (48 V DC, τ = 0 ms)            |
|  | 90 W (110 V DC, τ = 0 ms)            |
|  | 88 W (220 V DC, τ = 0 ms)            |
|  | 1500 VA (250 V AC, τ = 0 ms)         |
| Maximum interrupting rating (inductive load) | 42 W (24 V DC, τ = 40 ms)            |
|  | 33 W (48 V DC, τ = 40 ms)            |
|  | 25 W (110 V DC, τ = 40 ms)           |
|  | 23 W (220 V DC, τ = 40 ms)           |
| Switching capacity min.                      | 0.4 W                                |
| Mechanical service life                      | approx. 10 <sup>7</sup> cycles       |

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### Output data

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Switching capacity (360/h cycles) | on request                      |
| Output fuse                       | 10 A gL/gG NEOZED (N/O contact) |

### General

|   |   |
|---|---|
| Relay type                                  | Electromechanical relay with forcibly guided contacts in accordance with EN 50205 |
| Nominal operating mode                      | 100% operating factor   |
| Net weight                                  | 198.9 g   |
| Mounting position                           | any   |
| Mounting type                               | DIN rail mounting   |
| Degree of protection                        | IP20  |
| Min. degree of protection of inst. location | IP54  |

### 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> |
| 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            |
| Safety Integrity Level (SIL)                | 3            |
| Designation                                 | EN ISO 13849 |
| Performance level (PL)                      | e            |
| Category                                    | 4            |
| 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 60947-1   |
| Rated insulation voltage       | 250 V  |
| Rated surge voltage/insulation | 4 kV / basic insulation  |
| Degree of pollution            | 2  |
| Overvoltage category           | II   |
| Shock                          | 15g  |
| Vibration (operation)          | 10 Hz ... 150 Hz, 2g   |

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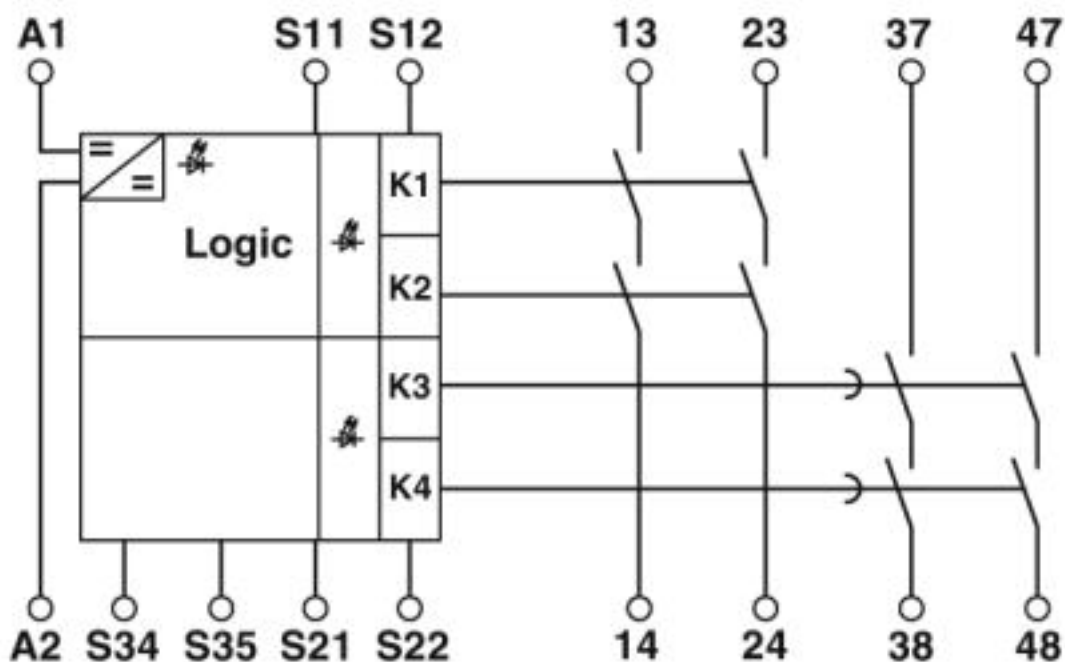
## Technical data

### 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" |

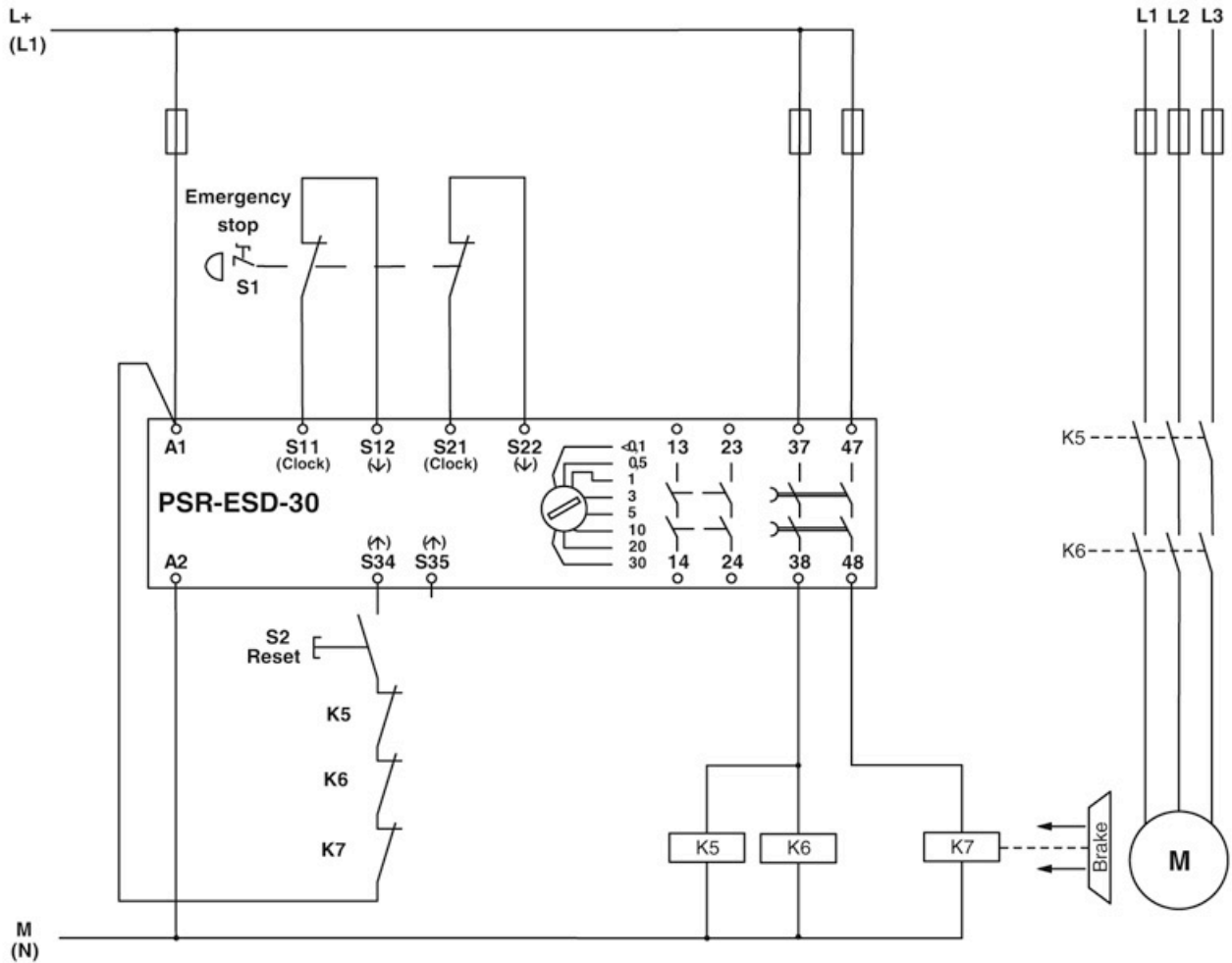
## Drawings

Circuit diagram



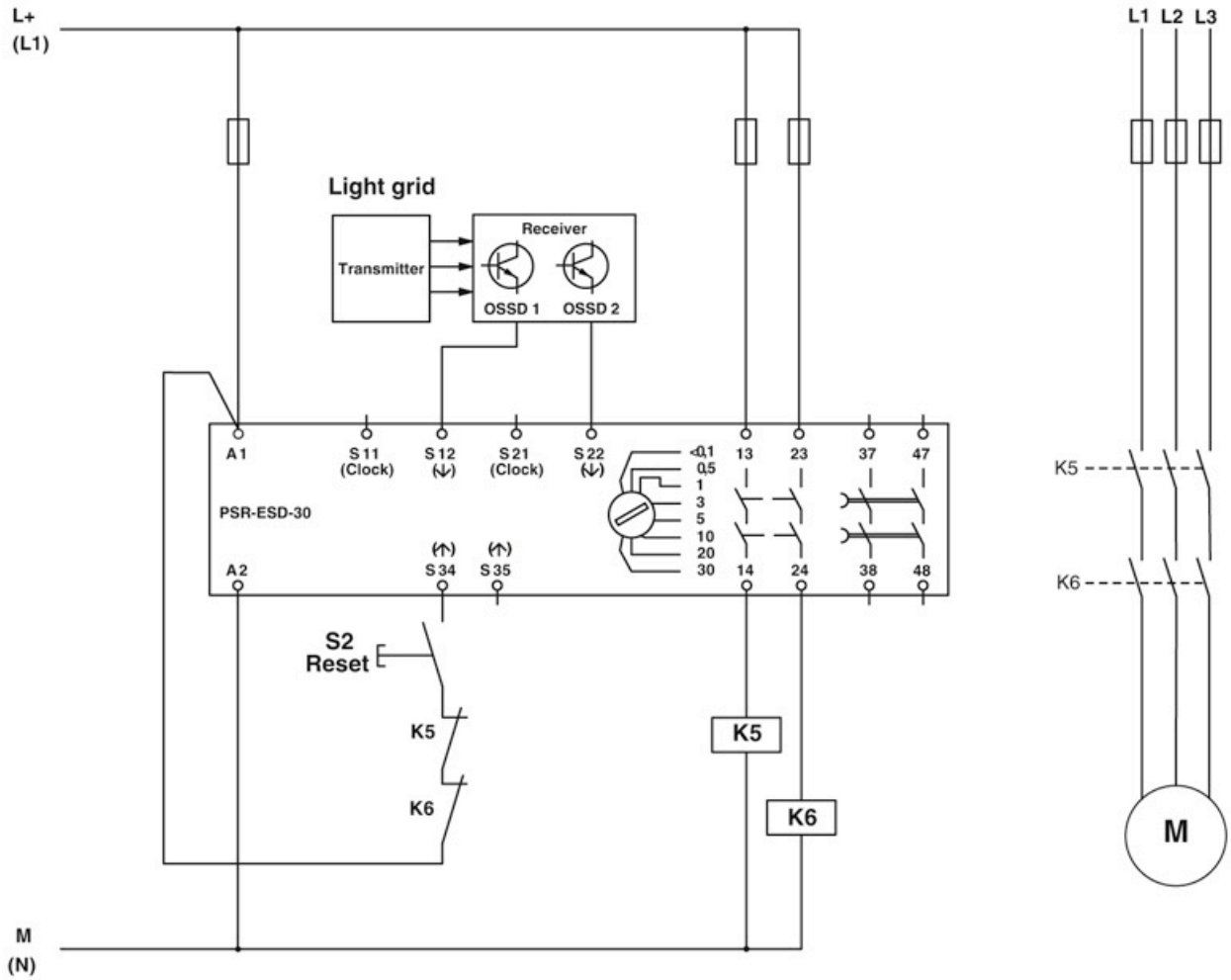
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Circuit diagram



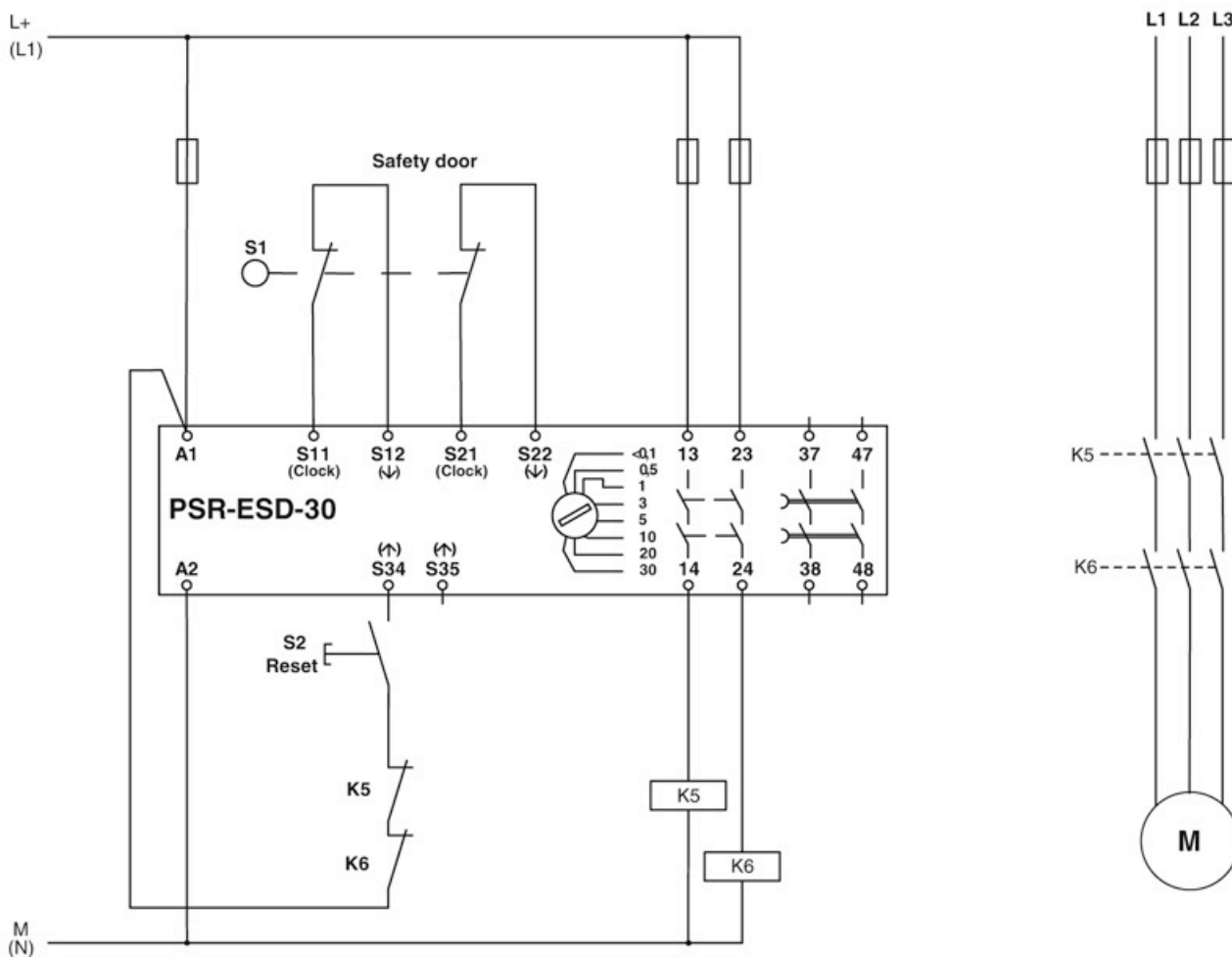
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Circuit diagram



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Circuit diagram



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### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| 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 2.0 | EC001449 |
| ETIM 3.0 | EC001449 |
| ETIM 4.0 | EC001449 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |
| ETIM 7.0 | EC001449 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211901 |
| UNSPSC 7.0901 | 39121501 |
| UNSPSC 11     | 39121501 |
| UNSPSC 12.01  | 39121501 |
| UNSPSC 13.2   | 39121501 |
| UNSPSC 18.0   | 39122205 |
| UNSPSC 19.0   | 39122205 |
| UNSPSC 20.0   | 39122205 |
| UNSPSC 21.0   | 39122205 |

### Approvals

#### Approvals

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##### Approvals

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

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##### Ex Approvals

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#### Approval details



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### Approvals

|                   |  |   |                          |
|-------------------|--|---|--------------------------|
| 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 |  |   | 01/205/0656.01/15        |
| EAC               |  |   | EAC-Zulassung            |
| EAC               |  |   | RU C-<br>DE.A*30.B.01082 |
| cULus Listed      |  |   |                          |

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