# Safety relays - PSR-SPP- 24UC/ESAM4/8X1/1X2 - 2963996



The figure shows a version with a screw connection

Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, single or two-channel operation, 8 enabling current paths, nominal input voltage of 24 V AC/DC, plug-in spring-cage terminal blocks

## Product Features

- Up to Cat.4/PL e according to ISO 13849-1, SILCL3 according to IEC 62061
- Manually monitored and automatic activation in a single device
- 8 enabling current paths, 1 signaling current path
- Single and two-channel control


## Key commercial data

| | |
|---|---|
| **package_quantity** | 1 |
| **GTIN** | 4017918904814 |

## Technical data

### Note:

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

### Dimensions

| | |
|---|---|
| **Width** | 45 mm |
| **Height** | 112 mm |
| **Depth** | 114.5 mm |

### Ambient conditions

| | |
|---|---|
| **Ambient temperature (operation)** | -20 °C ... 55 °C |
| **Ambient temperature (storage/transport)** | -40 °C ... 70 °C |

### Input data

| | |
|---|---|
| **Nominal input voltage $U_N$** | 24 V AC/DC |
| **Input voltage range in reference to $U_N$** | 0.85 ... 1.1 |
| **Typical input current at $U_N$** | 210 mA AC |
| **Typical input current at $U_N$** | 120 mA DC |
| **Voltage at input/start and feedback circuit** | approx. 24 V DC |

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## Technical data

### Input data

| | |
|---|---|
| **Typical response time** | 60 ms (man. start) |
| **Typical response time** | 250 ms (Auto-start) |
| **Typical release time** | 20 ms |
| **Concurrence input 1/2** | Infinite |
| **Recovery time** | 1 s |
| **Max. permissible overall conductor resistance** | approx. 11 Ω (Input and start circuits at $U_N$) |

### Output data

| | |
|---|---|
| **Contact type** | 8 enabling current paths |
| **Contact type** | 1 signaling current path |
| **Contact material** | $AgSnO_2$, + 0.2 µm Au |
| **Maximum switching voltage** | 250 V AC/DC |
| **Minimum switching voltage** | 15 V AC/DC |
| **Limiting continuous current** | 6 A |
| **Maximum inrush current** | 6 A |
| **Inrush current, minimum** | 25 mA |
| **Sq. Total current** | 50 $A^2$ ($I_{TH}^2 = I_1^2 + I_2^2 + ... + I_8^2$) |
| **Interrupting rating (ohmic load) max.** | 144 W (24 V DC, τ = 0 ms) |
| **Interrupting rating (ohmic load) max.** | 288 W (48 V DC, τ = 0 ms) |
| **Interrupting rating (ohmic load) max.** | 110 W (110 V DC, τ = 0 ms) |
| **Interrupting rating (ohmic load) max.** | 88 W (220 V DC, τ = 0 ms) |
| **Interrupting rating (ohmic load) max.** | 1500 VA (250 V AC, τ = 0 ms) |
| **Maximum interrupting rating (inductive load)** | 42 W (24 V DC, τ = 40 ms) |
| **Maximum interrupting rating (inductive load)** | 42 W (48 V DC, τ = 40 ms) |
| **Maximum interrupting rating (inductive load)** | 42 W (110 V DC, τ = 40 ms) |
| **Maximum interrupting rating (inductive load)** | 42 W (220 V DC, τ = 40 ms) |
| **Switching capacity min.** | 0.4 W |
| **Output fuse** | 6 A fast blow |
| **Output fuse** | C6 (24 V AC/DC) automatic device |

### General

| | |
|---|---|
| **Relay type** | Electromechanically forcibly guided, dust-proof relay. |
| **Mechanical service life** | Approx. $10^7$ cycles |
| **Mounting position** | Any |
| **Category according to EN 13849-1** | 4 |
| **Stop category** | 0 |
| **Name** | Air and creepage distances between the power circuits |
| **Standards/regulations** | DIN EN 50178/VDE 0160 |
| **Rated surge voltage / insulation** | 4 kV / Basic insulation, (safe isolation, reinforced insulation and 6 kV between input circuit and enabling current paths (63/64, 73/74, 83/84) and between 63/64, 73/74, 83/84 between each other.) |
| **Rated insulation voltage** | 250 V |
| **Pollution degree** | 2 |

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## Technical data

### General

| | |
|---|---|
| **Surge voltage category** | III |

### Connection data

| | |
|---|---|
| **Conductor cross section solid min.** | 0.2 mm² |
| **Conductor cross section solid max.** | 1.5 mm² |
| **Conductor cross section stranded min.** | 0.2 mm² |
| **Conductor cross section stranded max.** | 1.5 mm² |
| **Conductor cross section AWG/kcmil min.** | 24 |
| **Conductor cross section AWG/kcmil max** | 16 |
| **Stripping length** | 8 mm |
| **Connection method** | Spring-cage conn. |

## 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 |

### ETIM

| | |
|---|---|
| **ETIM 2.0** | EC000196 |
| **ETIM 3.0** | EC001449 |
| **ETIM 4.0** | EC001449 |
| **ETIM 5.0** | EC001449 |

### UNSPSC

| | |
|---|---|
| **UNSPSC 6.01** | 30211901 |
| **UNSPSC 7.0901** | 39121501 |
| **UNSPSC 11** | 39121501 |
| **UNSPSC 12.01** | 39121501 |
| **UNSPSC 13.2** | 39121501 |

## approvals

UL Listed / GOST / cUL Listed / BG ETEM / BG ETEM / cULus Listed /

### Approval details

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## approvals

**UL Listed**

**GOST**

**cUL Listed**

| **BG ETEM** | |
|---|---|
| | |
| Nominal voltage UN | |
| Nominal current IN | |
| mm²/AWG/kcmil | |

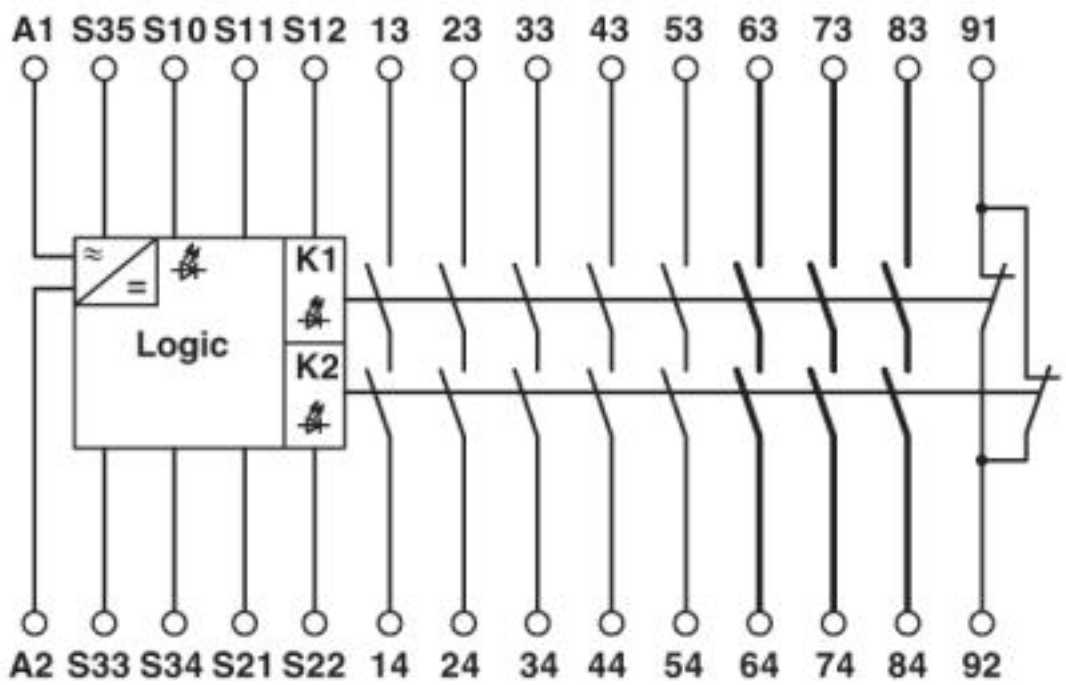
| | |
|---|---|
| | |
| Nominal voltage UN | |
| Nominal current IN | |
| mm²/AWG/kcmil | |

**cULus Listed**

## Drawings

# Safety relays - PSR-SPP- 24UC/ESAM4/8X1/1X2 - 2963996

Circuit diagram




1 = logics

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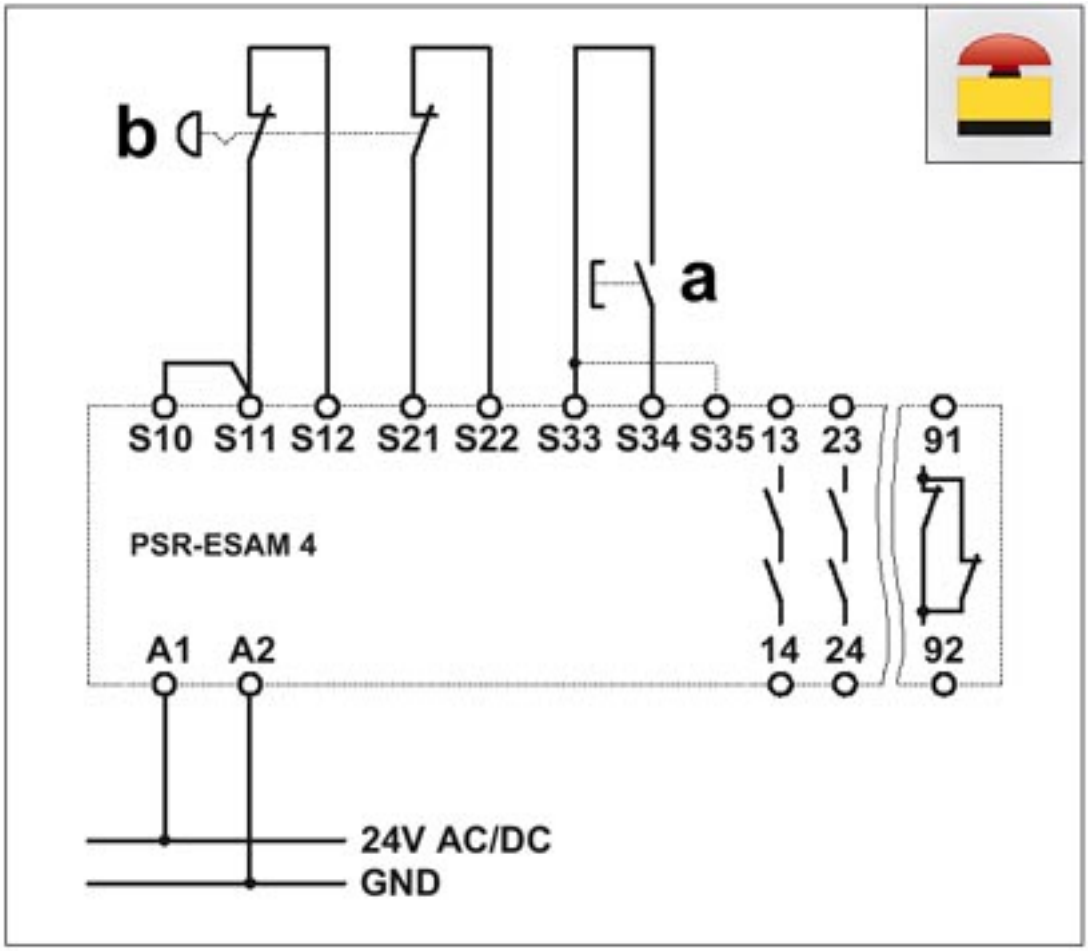
Circuit diagram




a = RESETb = Emergency stopTwo-channel emergency stop circuit with cross-circuiting detection and monitored reset button, suitable up to safety category 4.

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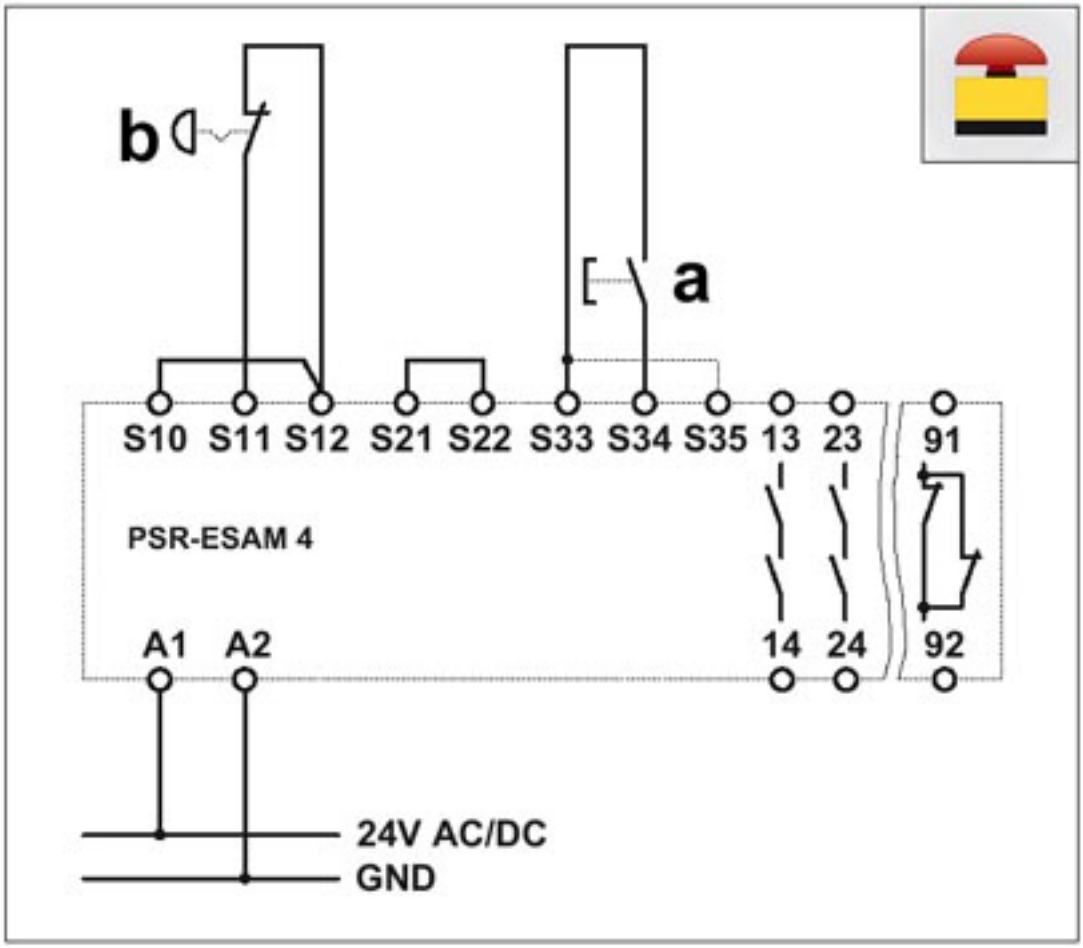
Circuit diagram




a = RESETb = Emergency stopTwo-channel emergency stop circuit
with monitored reset button (bridge on S33/S35: Automatic activation),
suitable up to safety category 2.

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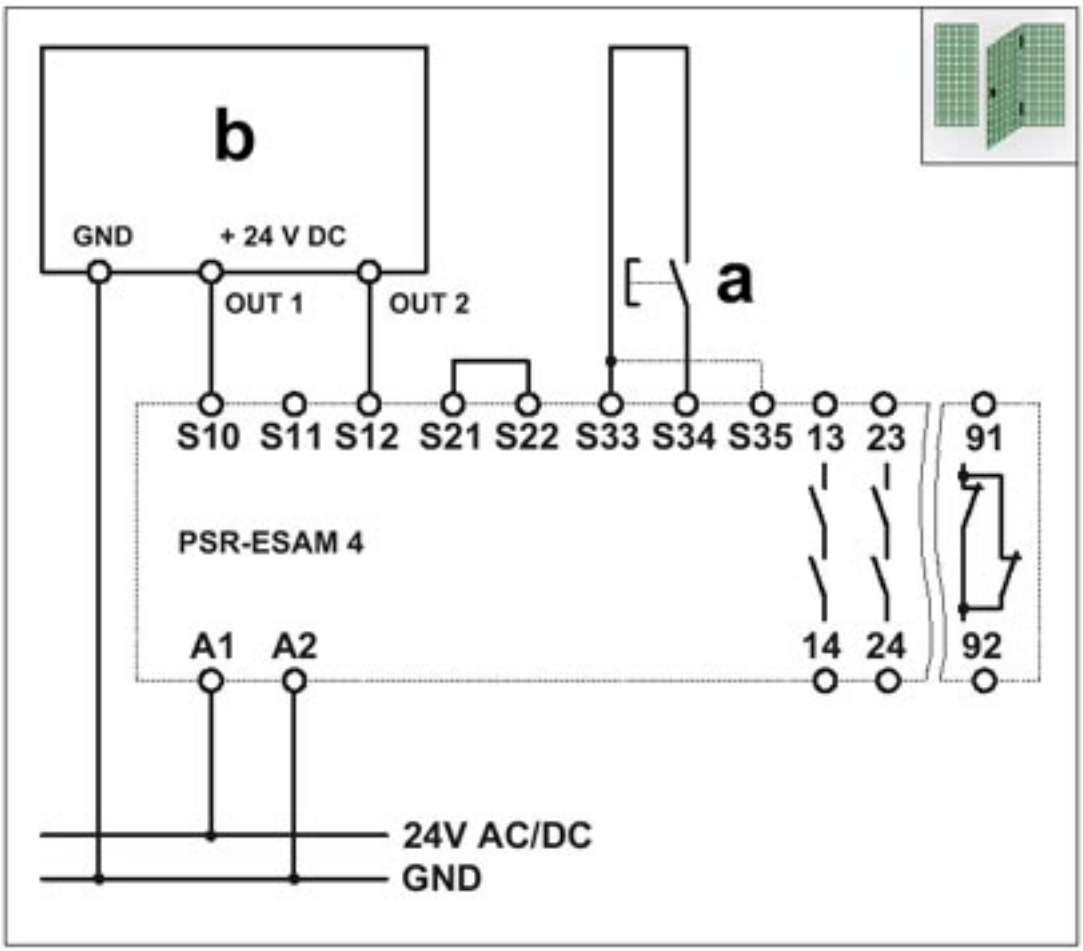
Circuit diagram




a = RESETb = semiconductor inputTwo-channel limit switch monitoring with semiconductor output and monitored reset button (automatic activation: Bridge S33/S35), suitable up to safety category 4 depending on the limit switch.

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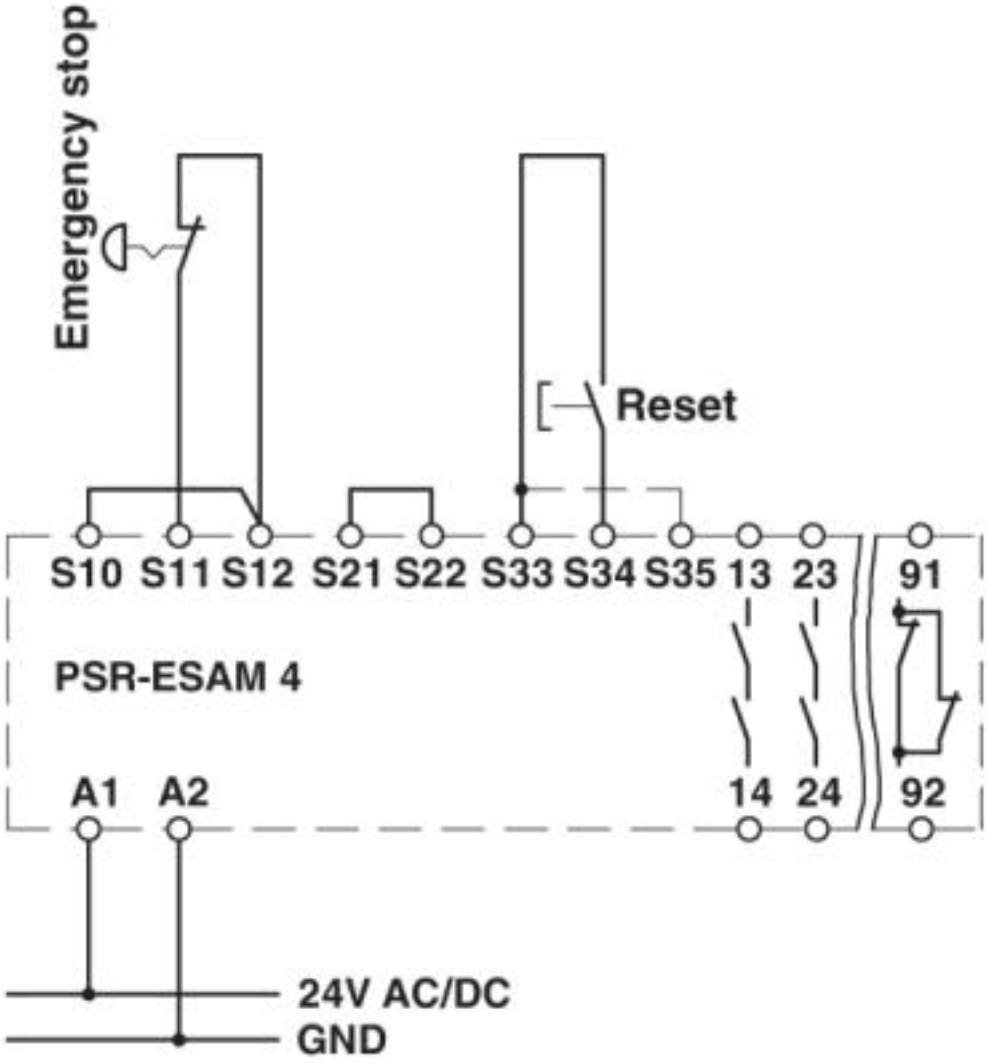
Circuit diagram



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Circuit diagram