

SAFE-EXP

Contact expansion module, 5 N/O, 1 N/C



Contact expansion module with 5 safe relay contacts and 1 feedback contact

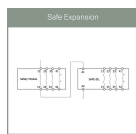
SAFE-EXP is a safety relay to be used as a contact extension for a basic safety device up to SIL 3 and Cat. 4, PL e in accordance with EN 62061 / EN 61508 and EN ISO 13849. The feedback loop has to be integrated into main safety device. Single channel operation, automatic start, 5 safe relay contacts, 1 feedback contact nominal input voltage: 24 V DC, max. switching capacity 250 V AC / 6 A, pluggable screw terminal blocks

ORDER DETAILS

Function: 5 safe relay contacts, 1 safe feedback contacts, up to SIL 3, 24 V DC, width: 22.5 mm
SKU/Order No.: SA-SAFE-EX-01-00

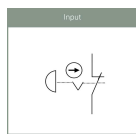


Features



Safe Extension Module

To expand any application with additional 3 N/O safe contacts



Single Channel Input

Possible to wire single channel applications



PL e, Category 4 (EN ISO 13849-1)

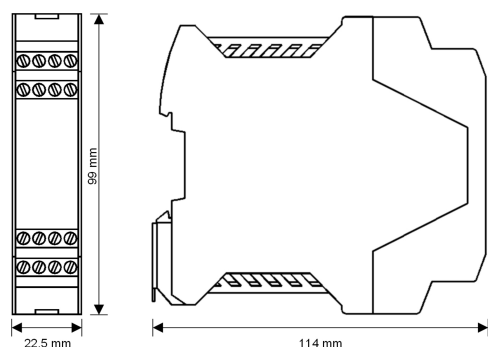
TÜV certified up to PL e / Category 4



SIL CL 3 (EN 62061 / IEC 61508)

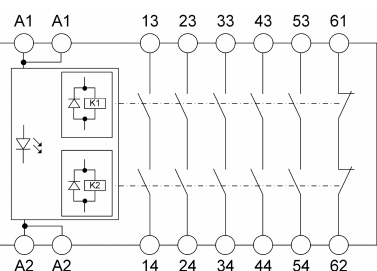
TÜV certified up to SIL 3

Mechanical Dimensions

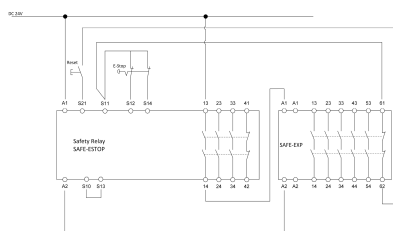


Housing with Plug-In Terminal Blocks

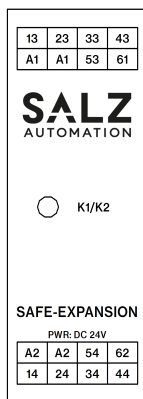
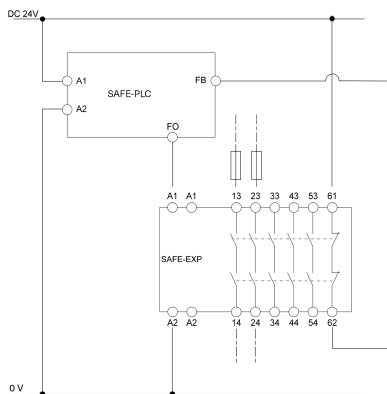
Drawings



SAFE-EXP block diagram



SAFE-EXP as Expansion Module - Control with safe relay contacts Wiring as contact extension of a basic device (Category 4, up to PL e / SILCL 3, if the safety output meets PL e / SILCL 3 and short circuits in line between the safety output and A1 of the SAFE-EXP can be ruled out) Caution: Safety contacts will be activated immediately by switching on the basic device. Advice: According to EN ISO 13849-2 the wiring has to be in a short-circuit - proof control cabinet with a minimum degree of protection of IP54. For example, EN ISO 13849-2, table D4 - Cables within an electrical installation space in accordance with EN 60204-1. A feedback loop for monitoring the SAFE-EXP is necessary to achieve SIL 3 or PL e, this can be done by wiring the feedback to the auxiliary contact 61-62.



SAFE-EXP as Expansion Module - Control with safe PLC system Wiring as contact extension of a safe PLC (Category 4, up to PL e / SILCL 3, if the safety output meets PL e / SILCL 3 and short circuits in line between the safety output and A1 of the SAFE-EXP can be ruled out) Caution: Safety contacts will be activated immediately by switching on the safe output of PLC. Advice: According to EN ISO 13849-2 the wiring has to be in a short-circuit - proof control cabinet with a minimum degree of protection of IP54. For example, EN ISO 13849-2, table D4 - Cables within an electrical installation space in accordance with EN 60204-1. A feedback loop for monitoring the SAFE-EXP is necessary to achieve SIL 3 or PL e, this can be done by wiring the feedback to the auxiliary contact 61-62.

Frontlayout SAFE-EXP

Technical Data

Standards and Regulations

| | |
|--|--|
| In Compliance With | EN 60204-1; DIN EN ISO 13849-1; EN 62061 |
| Rated Impulse Withstand Voltage (control voltage / contacts) | 2.5 kV |
| Dielectric Strength | 4 kV |
| Rated Insulation Voltage | 250 V |
| Degree of Pollution | 2 |
| Overvoltage Category | 3 |

Input Data

| | |
|---------------------------|-----------------|
| Nominal Operating Voltage | 24 V DC |
| Input Voltage Range DC | 21.6 ... 26.4 V |
| Power Consumption (max.) | 2,3 W |

Output Data

| | |
|------------------------------------|---------------------------------------|
| Safe Contacts (non delayed) | 5 NO |
| Auxiliary Contacts (non delayed) | 1 NC |
| Switching Voltage (max.) | 250 V AC |
| Contact Rating AC (resistive load) | 8 A (250 V, 2000 VA) |
| Contact Rating 230 V AC-15 | 5 A |
| Contact Rating DC (resistive load) | 8 A (30 V, 240 W) |
| Contact Rating 24 V DC-13 | 5 A |
| Thermal Current per contact | Max. 15 A total (13-14, 23-24, 33-34) |
| Minimum Contact Load | 5 V, 10 mA |
| External Fuses | 10 A gG (NO) |
| Switch-on Delay (max.) | < 30 ms |
| Switch-off Delay (max.) | < 50 ms |
| Relay Contact Material | AgSnO2 |
| Relay Contact Life (cycles) | 1 x 10 ⁷ |

Mechanical Data

| | |
|--------------------------------------|------------------------------|
| Wire Width | 0.14 ... 2.5 mm ² |
| Tightening Moment (min. / max.) | 0.5 Nm / 0.6 Nm |
| Weight (typ.) | 175 g |
| Mounting DIN Rail according EN 60715 | TH35 |

Ambient Condition

| | |
|---|-------------------|
| Degree of Protection | IP20 |
| Ambient Temperature (operating) | -15 °C ... +55 °C |
| Ambient Temperature (storage/transport) | -15 °C ... +85 °C |
| Operating Altitude (max. above sea level) | < 2000 m |

Dimensions

| | |
|--------|---------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114 mm |

Commercial Data

| | |
|-----------------------|------------|
| Customs Tariff Number | 8536411090 |
|-----------------------|------------|

Safety Values

Safety Characteristics according to EN ISO 13849-1

| | |
|---------------------------------|---------------------|
| Load per contact AC 15 / DC 13 | $\leq 5A / \leq 5A$ |
| Use duration $T_{10,d}$ [years] | 20 |
| Category | 4 |
| Performance Level PL | e |