



## eloFlex Mini 470EFR...

eloFlex Mini 470EFR... is a configurable safety relay with 2 independent safety inputs (2-channel) and up to 2 safety outputs as well as 1 control output. The internal logic link is configured specifically for each customer.

### Product characteristics

- Up to 2 safety functions can be implemented in one device
- The number of safety outputs (relays) can be set according to the individual requirement, making this a cost-effective solution
- Increased functionality using less space in the switch cabinet
- The units are tamper-proof as are pre-configured during ordering
- Cost-effective and reliable by unique identification of configuration for maintenance, commissioning and service
- Can be perfectly adapted to your application through various configuration options, offering maximum flexibility
- Additional sensors can be connected via elobau interfaces for input expansion

### The following logic and safety functions are available:

| Logic link: | Safety functions:  |
|-------------|--------------------|
| AND         | $t_{ON} / t_{OFF}$ |
| OR          | Safetyfunction     |
| XOR         | 2-hand             |
| NAND        | Safetygate         |
| NOR         | E-stop             |
| XNOR        | N.O./N.O.          |
| NOT         | or N.O./N.C.       |

## Technical drawing

IMAGE 1/3

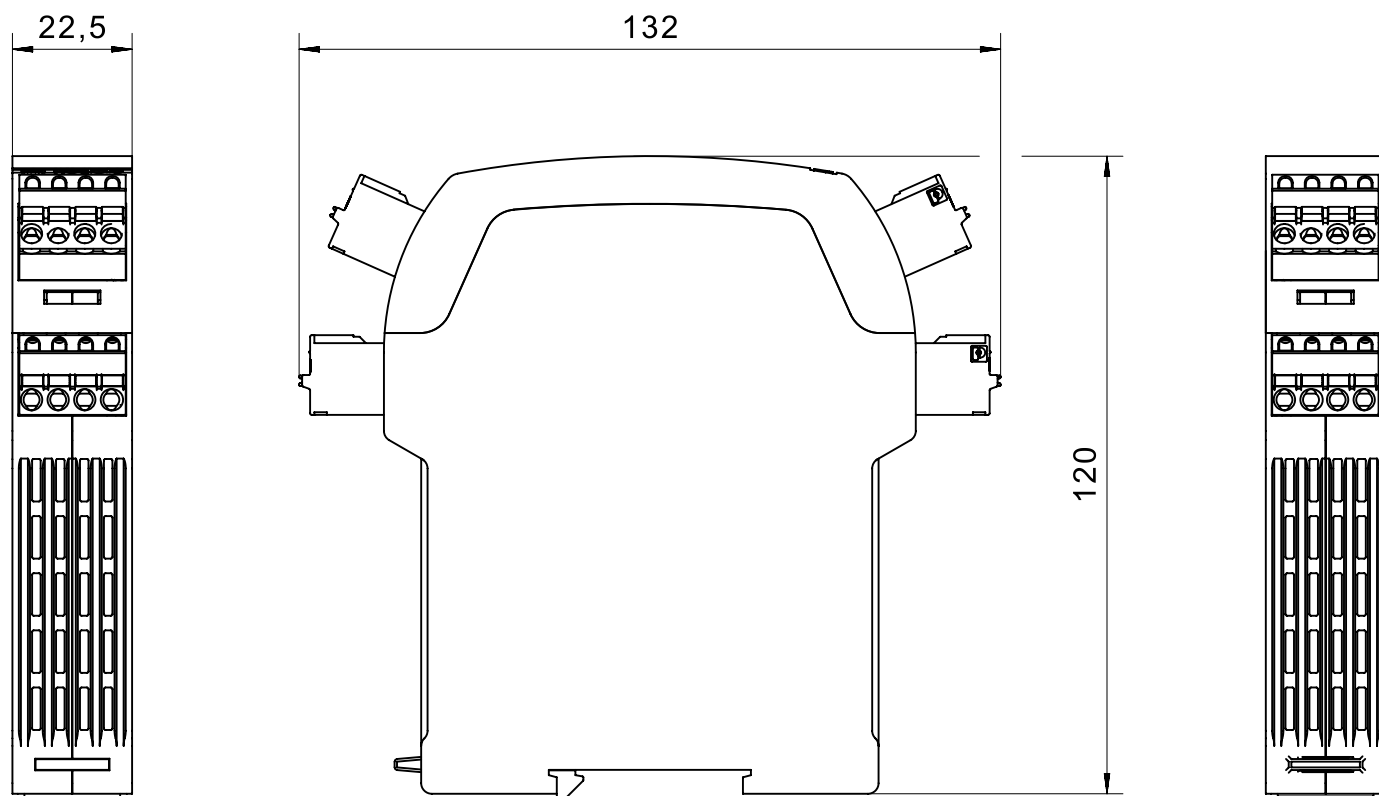


IMAGE 2/3

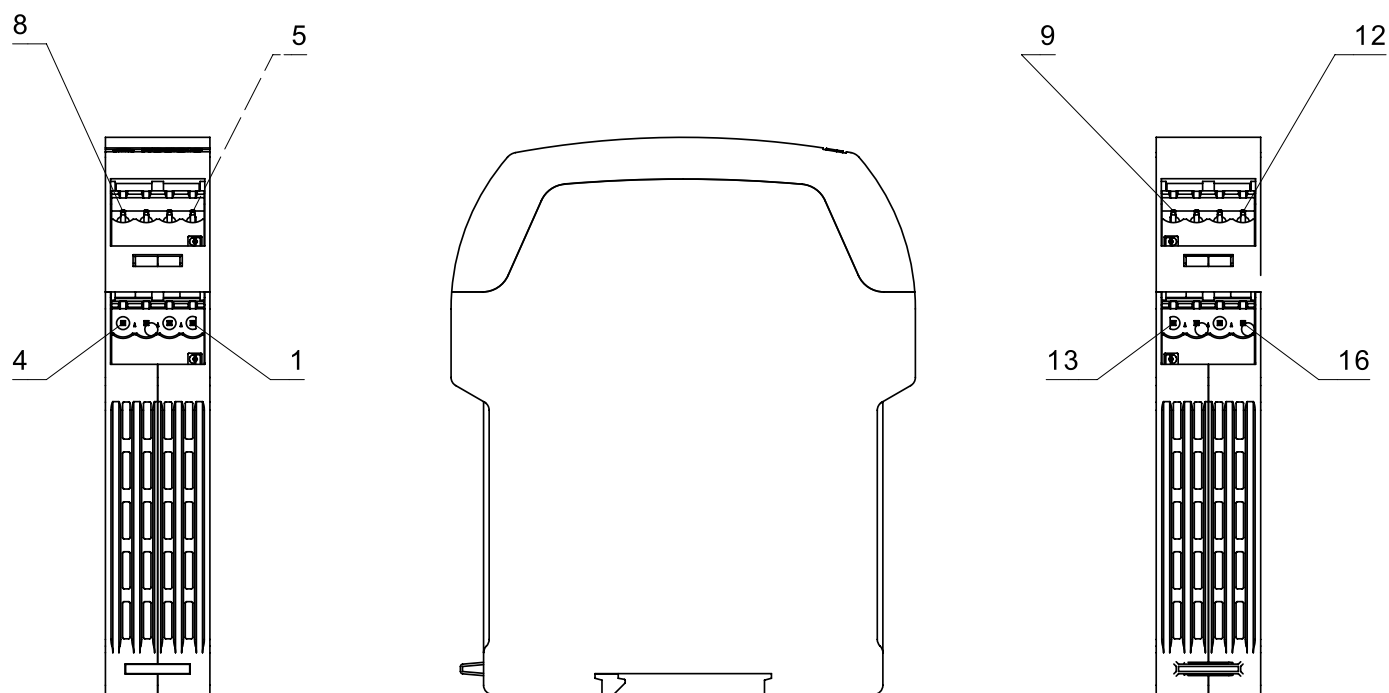
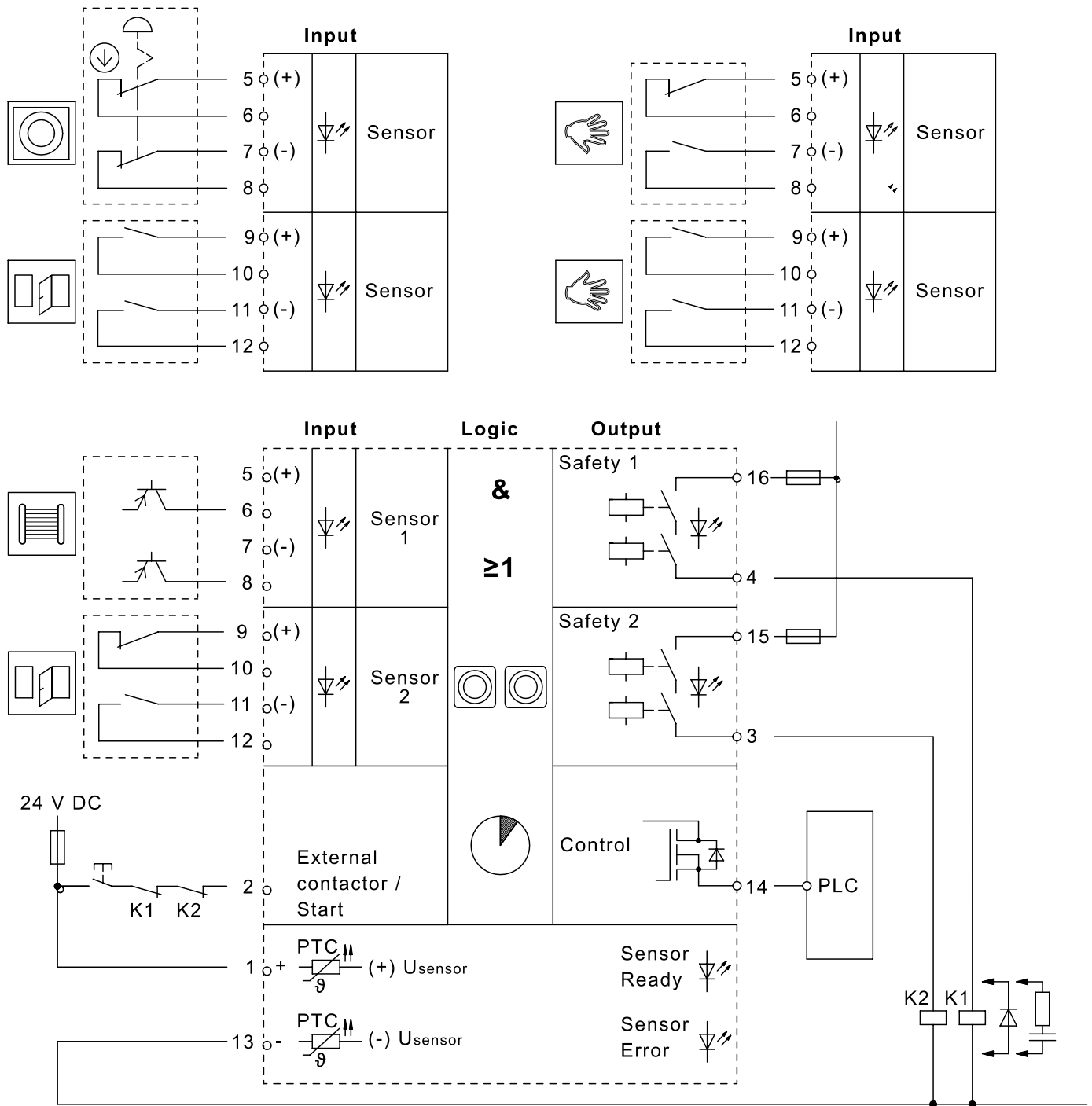


IMAGE 3/3



## Article characteristics

| Attribute                                   | 470EFR2D12K...                 | 470EFR3E11K... | 470EFR3E12K... |
|---|--------------------------------|----------------|----------------|
| Max. switching voltage at safety output     | 30 V DC                        |                |                |
| Max. switching voltage at control output    | 26.4 V DC                      |                |                |
| Max. switching voltage at safety output     | 250 V AC                       |                |                |
| Max. switching current at safety output     | 3 A                            |                |                |
| Max. switching current at control output    | 0.7 A                          |                |                |
| Max. switching power at control output      | 16.8 W                         |                |                |
| Max. switching power at safety output       | 750 VA                         |                |                |
| Number of configurable relay safety outputs | 2                              | 1              | 2              |
| Number of electronic control outputs        | 2                              |                |                |
| Number of redundant safety inputs           | 2                              |                |                |
| Stop category 0 (STO) nach IEC 61800-5-2    | yes                            |                |                |
| Stop category 1 (SS1) nach IEC 61800-5-2    | yes                            |                |                |
| EDM/start input                             | yes                            |                |                |
| Start function                              | Depending on the configuration |                |                |
| Utilization category                        | AC-15 / DC-13                  |                |                |
| Operating voltage min.                      | 21.6 V DC                      |                |                |
| Operating voltage max.                      | 26.4 V DC                      |                |                |
| Current consumption                         | 200 mA                         |                |                |
| Power consumption                           | 4.8 W                          |                |                |
| Cross-short detection                       | yes                            |                |                |
| LED display                                 | two-coloured                   |                |                |
| Operating time                              | 3000 ms                        |                |                |
| Overvoltage category                        | II                             |                |                |
| Min. switching voltage at safety output     | -                              | 5 V DC         |                |
| Min. switching voltage at control output    | 21.6 V DC                      |                |                |

## Article characteristics

| Attribute  | 470EFR2D12K...                 | 470EFR3E11K... | 470EFR3E12K... |
|--|--------------------------------|----------------|----------------|
| Min. switching voltage at safety output                        | -                              | 5 V AC         |                |
| Min. switching current at safety output                        | -                              | 0.05 A         |                |
| Min. switching power at control output                         | -                              | 0.06 W         |                |
| Max. switching power at safety output                          | 90 W                           |                |                |
| Min. switching power at safety output                          | -                              | 0.06 VA        |                |
| Max no operating cycles at 0.5A switching current (ohmic load) | 1000000                        | 1500000        |                |
| Max no operating cycles at 3A switching current (ohmic load)   | 190000                         | 250000         |                |
| Contact form   | Abhängig von der Konfiguration |                |                |
| PL acc. to EN ISO 13849-1                                      | d                              | e              |                |
| SIL acc. to IEC 61508  | 2                              | 3              |                |
| SIL CL acc. to IEC 62061                                       | 2                              | 3              |                |
| PFHD according to IEC 61508                                    | 8,75x10^-8 1/h                 | 3,86x10^-8 1/h |                |
| Operating life   | 20 Tm                          |                |                |
| Category acc. to EN ISO 13849-1                                | 3                              | 4              |                |
| Hardware fault tolerance (HFT) according to IEC 61508          | 1                              |                |                |
| Dimensions   | 130 x 22,5 x 120 mm (H/B/T)    |                |                |
| Housing material   | PA, PC                         |                |                |
| Housing colour   | schwarz                        |                |                |
| Protection class   | IP30 IEC60529                  |                |                |
| Operating temperature min.                                     | 0 °C                           |                |                |
| Max. operating temperature                                     | 55 °C                          |                |                |
| Min. storage temperature                                       | -40 °C                         |                |                |
| Max. storage temperature                                       | 70 °C                          |                |                |
| Relative humidity  | 5 - 85 %                       |                |                |
| Protection class, installation space                           | IP55 IEC60529                  |                |                |
| Shock resistance (Norm)  | 30 g / 11 ms                   |                |                |

## Article characteristics

| Attribute                          | 470EFR2D12K...                                       | 470EFR3E11K... | 470EFR3E12K... |
|------------------------------------|--|----------------|----------------|
| Continuous shock resistance (Norm) | 10 g / 16 ms   |                |                |
| Vibration resistance (Norm)        | 10 ... 55 Hz   |                |                |
| Air pressure                       | 860 - 1060 hPa                                       |                |                |
| Delta tmax                         | 0.5 °C/min   |                |                |
| Mounting type                      | Mounting rail  |                |                |
| Weight                             | 200 g  |                |                |
| Torque for connection terminals    | 0.5 N m  |                |                |
| Spring-type terminals              | yes  |                |                |
| Screw terminals                    | Optional   |                |                |
| Double terminals                   | Optional   |                |                |
| Pluggable connection terminals     | yes  |                |                |
| Min. connection cross section      | 0.2 mm <sup>2</sup>                                  |                |                |
| Max. connection cross section      | 2.5 mm <sup>2</sup>                                  |                |                |
| Certified in accordance with       | EN ISO 13849-1 IEC 61508 IEC 62061 UL 508 / CSA 22.2 |                |                |
| CE label                           | yes  |                |                |