



eloFlex 471EFR...

eloFlex 471 EFR... is a configurable safety relay with 4 independent safety inputs (2-channel) and 4 safety outputs (2-channel) as well as 4 control outputs.

The internal logic link is configured specifically for each customer.

Product characteristics

- Up to 4 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 1/4

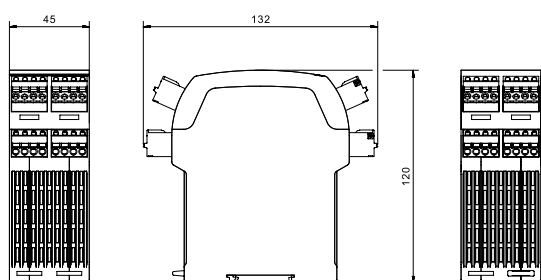


IMAGE 2/4

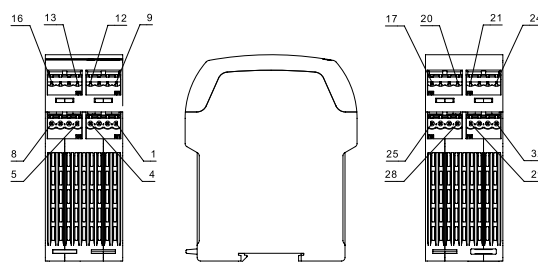


IMAGE 3/4

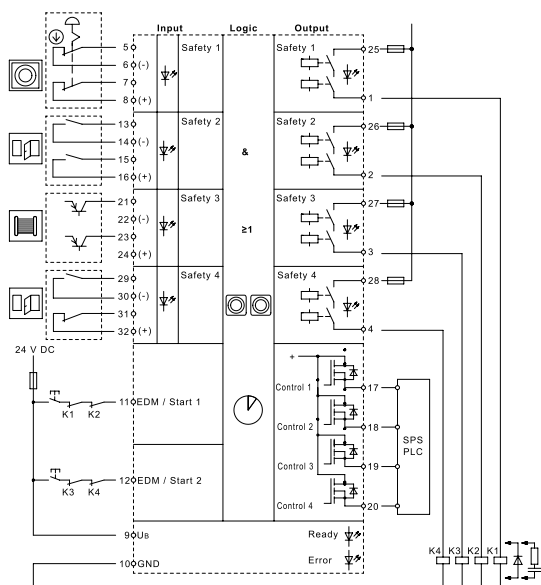
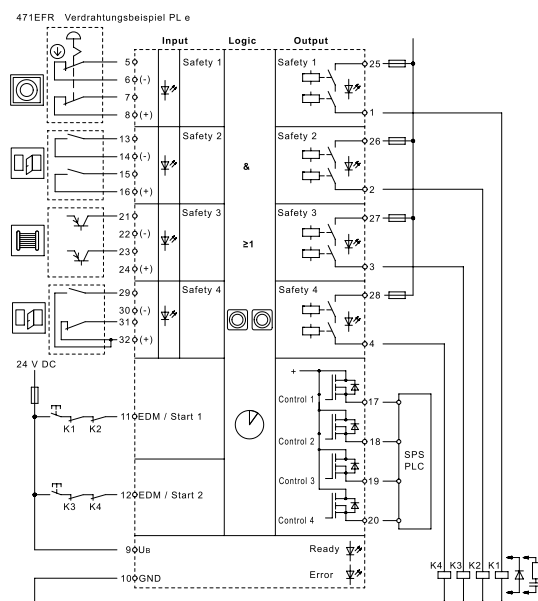


IMAGE 4/4



Electrical data

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
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	0.1 A				
Max. switching power at control output	2.4 W				
Max. switching power at safety output	750 VA				
Number of configurable relay safety outputs	4	1	2	3	4
Number of electronic control outputs	4				
Number of redundant safety inputs	4				
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	800 mA				
Power consumption	19.2 W				
Cross-short detection	yes				

Electrical data

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
LED display	two-coloured				
Operating time	3000 ms				
Overvoltage category	II				
Min. switching voltage at control output	21.6 V DC				
Max. switching power at safety output	90 W				
Max no operating cycles at 0.5A switching current (ohmic load)	1000000	3000000			
Max no operating cycles at 3A switching current (ohmic load)	190000	280000			
Contact form	Abhängig von der Konfiguration				

Safety-related characteristics

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
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				

Mechanical data

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Dimensions	130 x 45 x 120 mm (H/B/T)				

Material information

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Housing material	PA, PC				
Housing colour	schwarz				

Environmental conditions

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Protection class	IP30 IEC60529				
Operating temperature min.	-25 °C	0 °C			
Max. operating temperature	55 °C				
Min. storage temperature	-40 °C	-25 °C			
Max. storage temperature	70 °C				
Relative humidity	5 - 85 %				
Protection class, installation space	IP55 IEC60529				
Shock resistance (Norm)	30 g / 11 ms				
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				

Installation

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Mounting type	Mounting rail				
Weight	400 g				
Torque for connection terminals	0.5 N m				

Connection

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Spring-type terminals	yes				
Screw terminals	Optional				
Double terminals	Optional				
Pluggable connection terminals	yes				
Min. connection cross section	0.2 mm ²				
Max. connection cross section	2.5 mm ²				

Approvals

Attribute	471EFR2D14K...	471EFR3E11K...	471EFR3E12K...	471EFR3E13K...	471EFR3E14K...
Certified in accordance with	EN ISO 13849-1 IEC 61508 IEC 62061 UL 508 / CSA 22.2				
CE label	yes				