

## Expansion module for safety relays KZE5-YS Part number 85102954



- "Multiplication of contacts" function for safety relays
- 1- or 2-channel operation
- Security with redundancy and feedback circuit
- 5 "NO" security contacts
- Performance Level (PL) e, safety category 4 to EN ISO 13849-1
- SIL Claimed Level (SIL CL) 3 to IEC/EN 62061

### Part numbers

	Type	Terminals	Voltages	Supply frequency range (Hz)	Outputs
85102954	KZE5-YS	Screws	110-115 VAC	50/60	5 NO

### Specifications

#### Operating characteristics

Functions	Multiplication of the number of contacts for safety relays
Operation	1 or 2 channels
Return loop	X1 - X2
Display of output state by LED	Output : OUT1 (relay K1) Output : OUT2 (relay K2)

#### Supply

Supply voltage	85 102 956 : 24 VAC/DC 85 102 954 : 110-115 VAC 85 102 955 : 230-240 VAC
Supply frequency range (Hz)	50 / 60
Operating range	AC : - 15 / + 10 % U DC : ± 10 % U (at 10 % residual ripple) DC : - 15 / + 10 % U (at 48 % residual ripple)
Consumption	1,8 VA (24 VAC/DC) 3,0 VA (110, 230 VAC)

#### Precision

Maximum reset time	20 ms
Maximum response time on emergency stop	35 ms

#### Output specification

Type	Forcibly guided relays (positively driven)
Number of safety circuits	5 NO
Nominal output voltage	250 VAC max.
Max. thermal current I for each contact	5 A
Maximum power rating	According to AC15 (NO contacts) : 3 A / 230 VAC According to AC15 (NC contacts) : 2 A / 230 VAC According to DC13 (NO contacts) : 4 A / 24 VDC ; 0,5 A / 110 VDC According to DC13 (NC contacts) : 4 A / 24 VDC
Electrical endurance	At 5 A, 230 VAC, $\cos \varphi = 1$ : > $1,5 \times 10^5$ switching cycles At 8 A, 24 VDC, according to DC 13 (NO contacts) : > $25 \times 10^3$ switching cycles (ON : 0,4 s ; OFF : 9,6 s)
Mechanical life	$20 \times 10^6$ switching cycles
Maximum rate	1200 switching cycles / h
Protection against short circuits	Max. fuse rating : 10 A gL Line circuit breaker : B 6 A

#### Climatic environment

Operating temperature (°C)	-15 → +55
Storage temperature (°C)	-25 → +85
Altitude	< 2000 m
Climate resistance according to IEC/EN 60068-1	15 / 055 / 04

#### Mechanical environment

Vibration resistance according to IEC/EN 60068-2-6	Amplitude : 0,35 mm Frequency : 10 → 55 Hz
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#### Electromagnetic environment

Immunity to electrostatic discharges acc. IEC/EN 61000-4-2	8 kV (air)
Immunity to radiated, radio-frequency, electromagnetic field acc. IEC/EN 61000-4-3	10 V / m
Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4	4 kV

Immunity to shock waves according to IEC/EN 61000-4-5	Between wires for power supply : 1 kV (AC), 0,5 kV (24 VAC/DC) Between wires and ground : 4 kV
Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6	10 V
Interference suppression according to IEC/EN 55011	Limit value class B
<b>Housing</b>	
Material : self-extinguishing (UL94VO)	Thermoplastic with V0 extinction behaviour
Protection (IEC/EN 60529) - Casing	IP40
Protection (IEC/EN 60529) - Term. block	IP20
Mounting	DIN-rail
Weight (g)	205
<b>Safety standards</b>	
Approvals	CE, TÜV, UL/CSA
Environmental directive 2002/95/CE	RoHs
Environmental regulation 1907/2006	Reach
Security data according to EN ISO 13849-1	Performance Level (PL) : e Category : 4
SIL Claimed Level (SIL CL) to IEC/EN 62061	3
Safety Integrity Level (SIL) according to CEI/EN 61508	3
Safety category to EN 954-1	4

### Principles

<b>EN ISO 13849-1:</b>		
Category:	4	
PL:	e	
MTTF <sub>d</sub> :	> 100	a (year)
DC <sub>avg</sub> :	99,0	%
d <sub>op</sub> :	365	d/a (days/year)
h <sub>op</sub> :	24	h/d (hours/day)
t <sub>cycle</sub> :	2,60E+06	s/cycle
	≅ 1	mth (month)

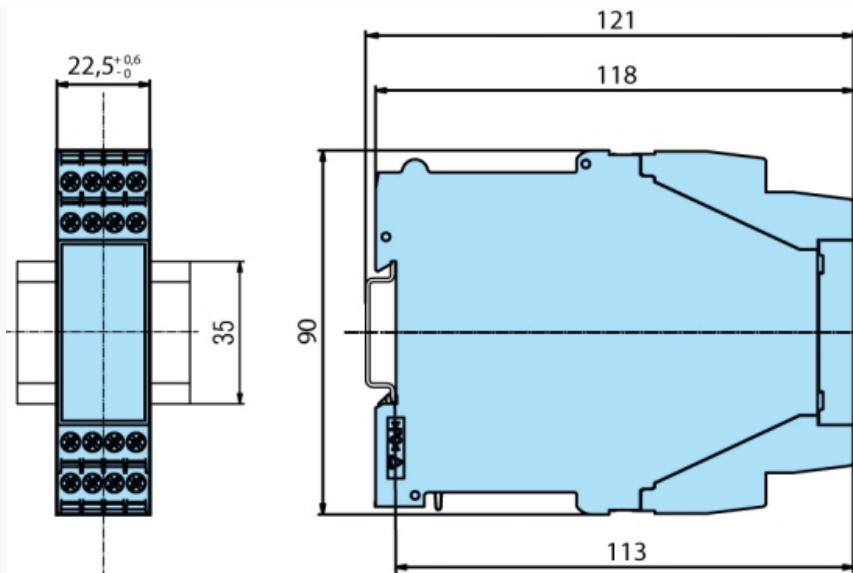
<b>IEC/EN 62061 IEC/EN 61508:</b>		
SIL CL:	3	IEC/EN 62061
SIL	3	IEC/EN 61508
HFT <sup>*)</sup> :	1	
DC <sub>avg</sub> :	99,0	%
SFF	99,7	%
PFH <sub>D</sub> :	4,68E-10	h <sup>-1</sup>
*) HFT = Hardware failure tolerance		

### Dimensions (mm)



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#### Screw terminals

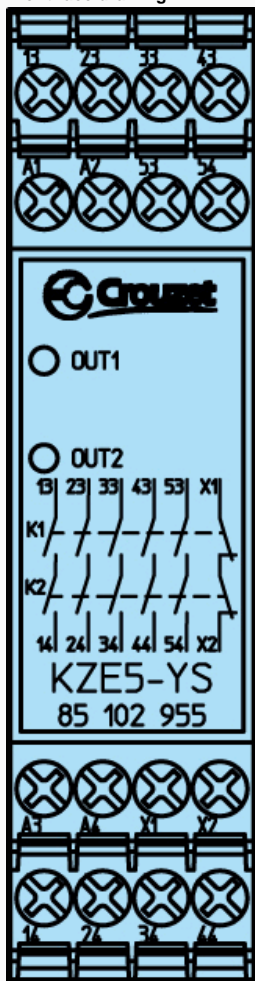


Connections



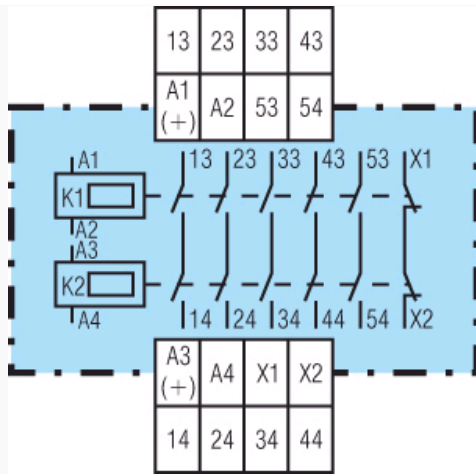
Connections

Front face drawing



Connections

Contacts



A1 (+) : + / L A2 : - / N X1, X2 : Feedback circuit (forcibly guided NC contact) 13, 14, 23, 24, 33, 34, 43, 44, 53, 54 : Safety circuit outputs (forcibly guided NO contacts)



**Applications**

**Multiplication of the contacts of a KNE (C) 3-YS module with a KZE5-YS module**

