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CROUZET CONTROL

Two-hand safety relays KZH3-YS Part number 85102631

- "Two-hand" safety function in with two push buttons
- Inputs for two switches with double contacts (1 NO and 1 NC for each)
- Security with redundancy and feedback circuit
- Monitoring of external contactors with feedback circuit Y1 - Y2
- 3 "NO" security contacts & 1 "NC" monitoring contact (KZH3-YS version)
- 2 "NO" security contacts (KZH2-YS version)
- Performance Level (PL) e, safety category 4 to EN ISO 13849-1
- SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
- Safety Level Type III-C according to EN 574

Part numbers

	Type	Terminals	Voltages	Supply frequency range (Hz)	Outputs
85102631	KZH3-YS	Screws	24 VDC	No	3 NO + 1 NC

Specifications

Operating characteristics

Functions	Protection of people with two-hand pushbuttons
Return loop	Y1 - Y2
Failure detection	Overvoltage and short circuit protection
Display of output state by LED	Power supply : PWR Output : OUT1 (relay K1) Output : OUT2 (relay K2)

Supply

Supply voltage	85 102 621 / 85 102 631 : 24 VDC 85 102 632 : 24 VAC
Supply frequency range (Hz)	50 / 60 (for AC version)
Operating range	± 10 % U
Consumption	2,3 W (DC) 4 VA (AC)
Initialization time	1 s

Precision

Maximum reset time	30 ms
Maximum response time on emergency stop	25 ms

Output specification

Type	Forcibly guided relays (positively driven)
Number of safety circuits	2 NO (KZH2-YS) 3 NO (KZH3-YS)
Number of data circuits	1 NC (KZH3-YS)
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 Accordinf to DC13 (NO contacts) : 4 A / 24 VDC ; 0,5 A / 110 VDC According to DC13 (NF contacts) : 4 A / 24 VDC
Electrical endurance	For 5 A, 230 VAC, cos φ = 1 : > 1,5 x 10^5 switching cycles For 8 A, 24 VDC, according to DC 13 (NO contacts) : > 25 x 10^3 switching cycles (ON : 0,4 s ; OFF : 9,6 s)
Mechanical life	20 x 10^6 switching cycles
Maximum rate	1800 switching cycles / h
Protection against short circuits	Max. fuse rating : 10 A gL Line circuit breaker : B 6 A

Climatic environment

Operating temperature (^{o} C)	-15 →+55
Storage temperature (^{0}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

Electromagnetic environment

Immunity to electrostatic discharges acc. IEC/EN 61000-4-2	8 kV (air)

Unless otherwise specified, the characteristics given are applicable to all or part of the product range selected

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	2 kV
Immunity to shock waves according to IEC/EN 61000-4-5	Between wires for power supply : 1 kV Between wires and ground : 2 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

Housing

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)	220

Safety standards

Approvals	CE, TÜV
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
Safety Level according to EN 574	Type III-C

Principles

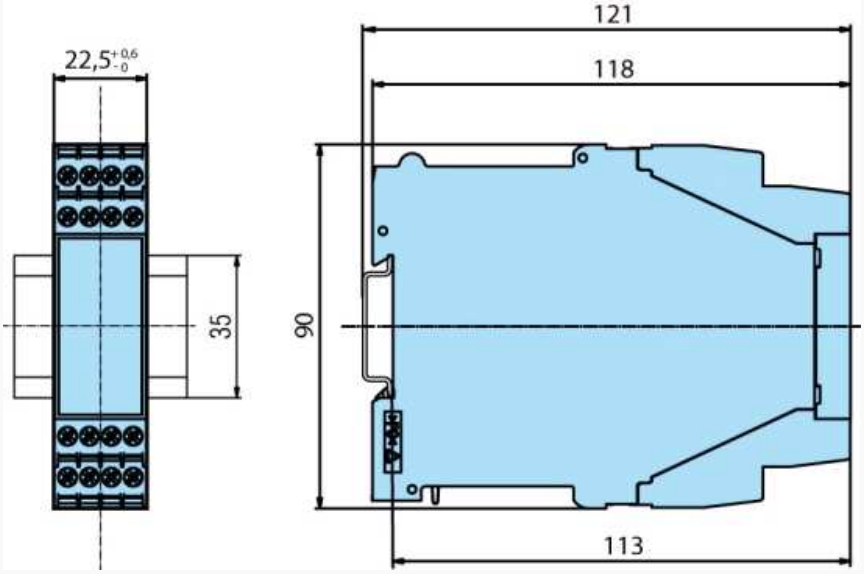
EN ISO 13849-1:		
Category:	4	
PL:	e	
$MTTF_d$:	30,7	a (year)
DC_{avg}:	99,0	%
d_{op}:	220	d/a (days/year)
h_{op}:	12	h/d (hours/day)
t_{cycle}:	1,40E+02	s/cycle

IEC/EN 62061 IEC/EN 61508:		
SIL CL:	3	IEC/EN 62061
SIL	3	IEC/EN 61508
HFT*):	1	
DC_{avg}:	99,0	%
SFF	99,7	%
PFH_D:	7,51E-09	h^{-1}
*) HFT = Hardware failure tolerance		

Dimensions (mm)

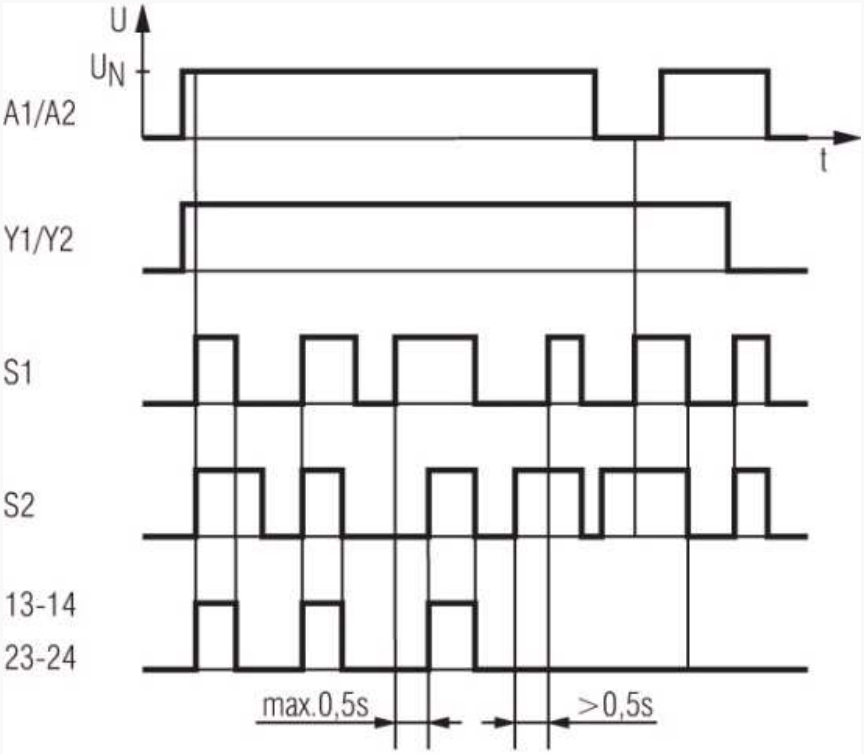
Dimensions (mm)

Screw terminals



Curves

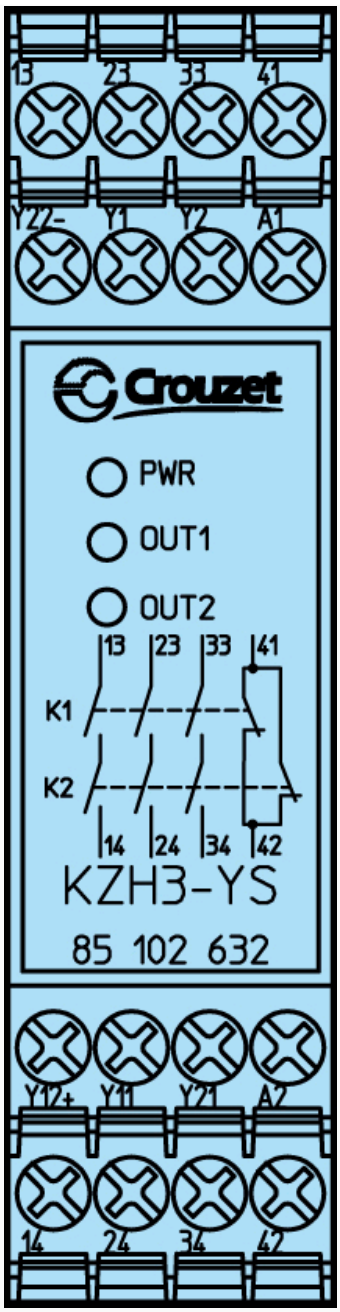
Function diagram



1.) "S1, S2 activated" means, NC open and NO closed
2.) activated S1, switches "+"-potential
3.) activated S2, switches "-"-potential

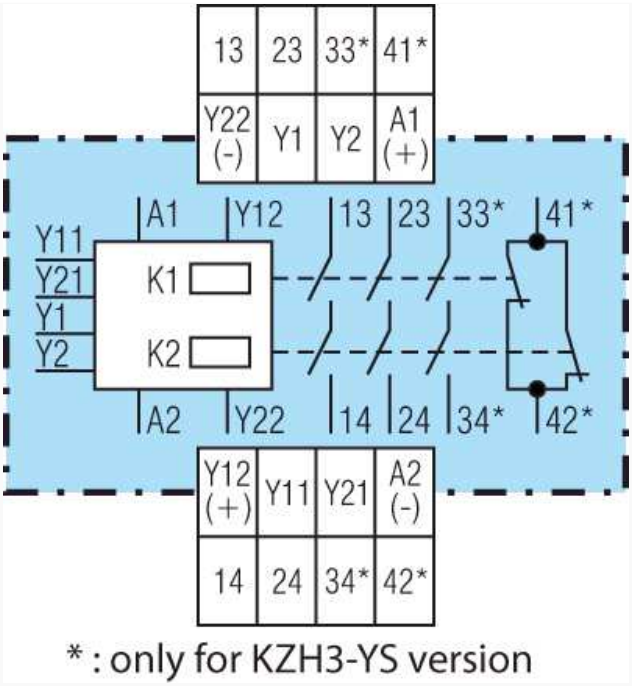
Connections

Front face drawing KZH3-YS



Connections

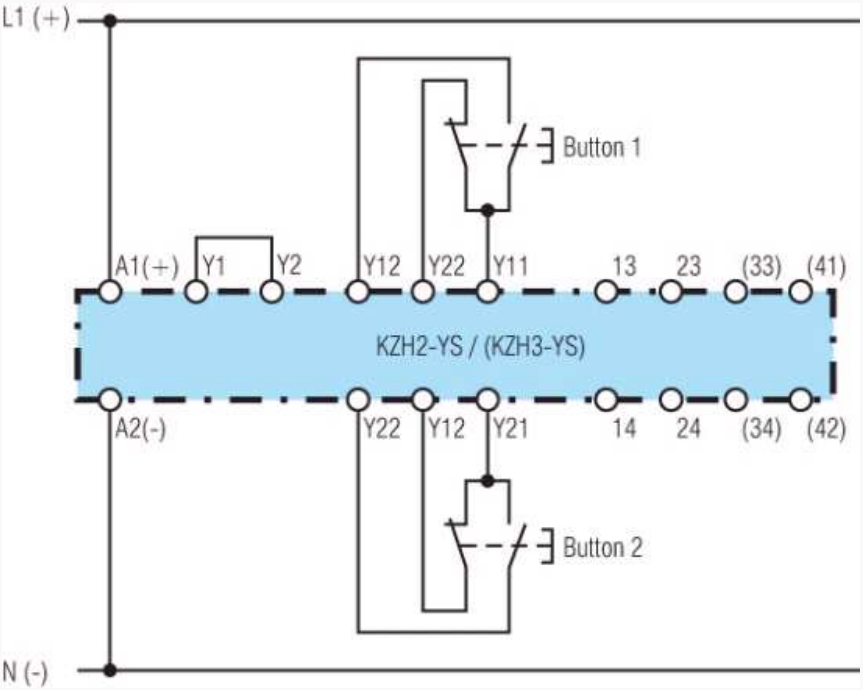
Contacts



A1 (+) : + / L A2 : - / N Y1, Y2 : Feedback circuit input Y11, Y12, Y21, Y22 : Control inputs (push buttons) 13, 14, 23, 24, (33, 34) * : Safety circtui outputs (forcibly guided NO contacts) (41, 42) * : Monitoring output (forcibly guided NC contact) * : only for KZH3-YS version

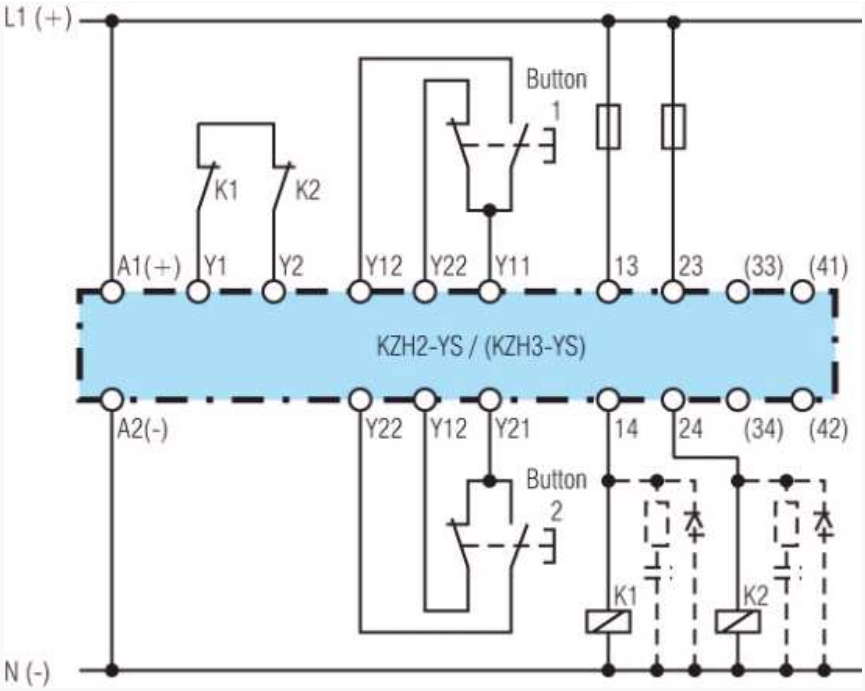
Applications

Two-hand safety relay



Applications

Two-hand control with contact reinforcement via external positively-driven contactors



When switching inductive loads, spark absorbers are recommended

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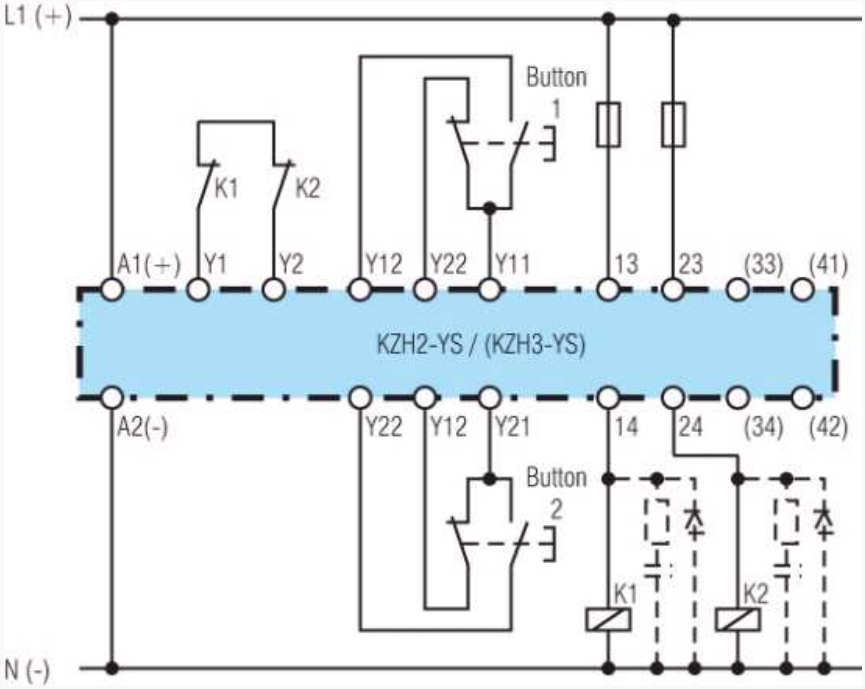

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