



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Two-hand safety relays KZH2-YS Part number 85102621



- "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
85102621 KZH2-YS	Screws	24 VDC	No	2 NO

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 According 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, $\cos \varphi = 1$: $> 1,5 \times 10^5$ switching cycles For 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	20×10^6 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 (°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
--	---

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	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

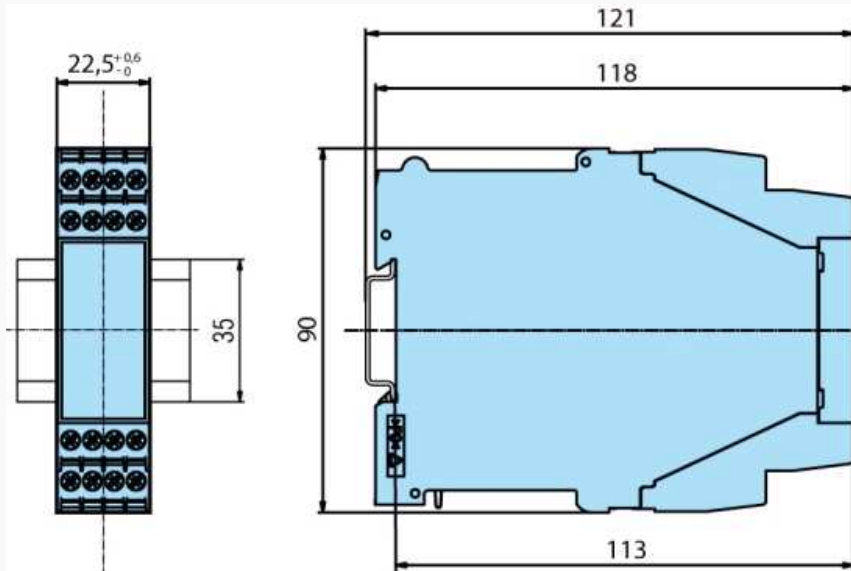
EN ISO 13849-1:		
Category:	4	
PL:	e	
MTTF _d :	30,7	a (year)
DC _{avg} :	99,0	%
d _{op} :	220	d/a (days/year)
h _{op} :	12	h/d (hours/day)
t _{cycle} :	1,40E+02	s/cycle

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)

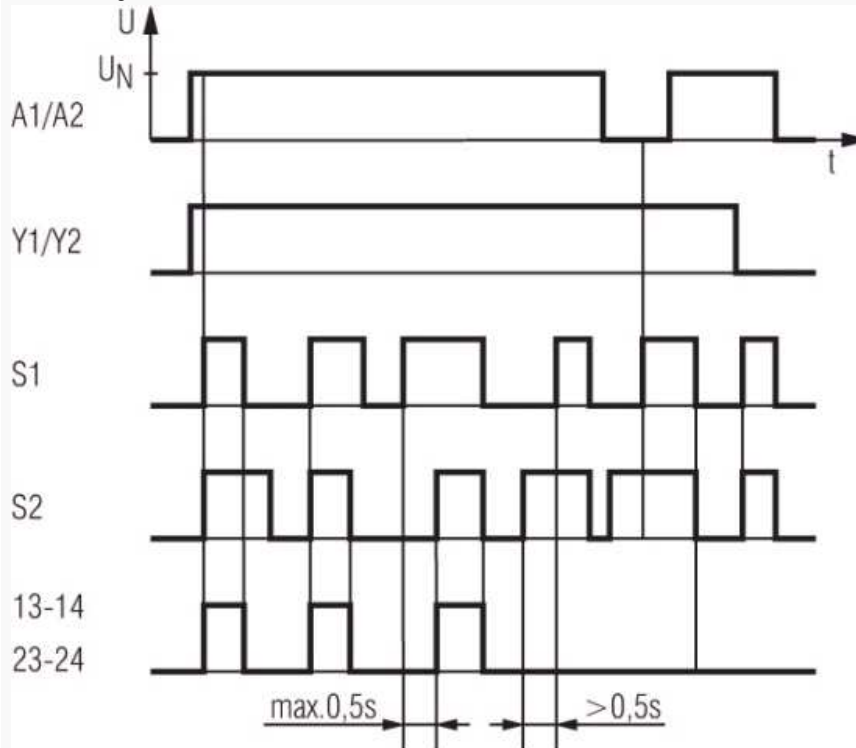
Dimensions (mm)

Screw terminals



Curves

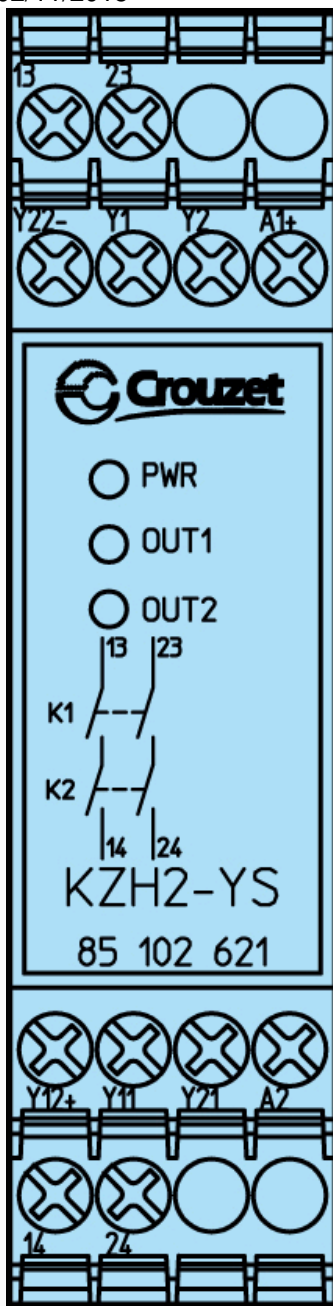
Function diagram



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

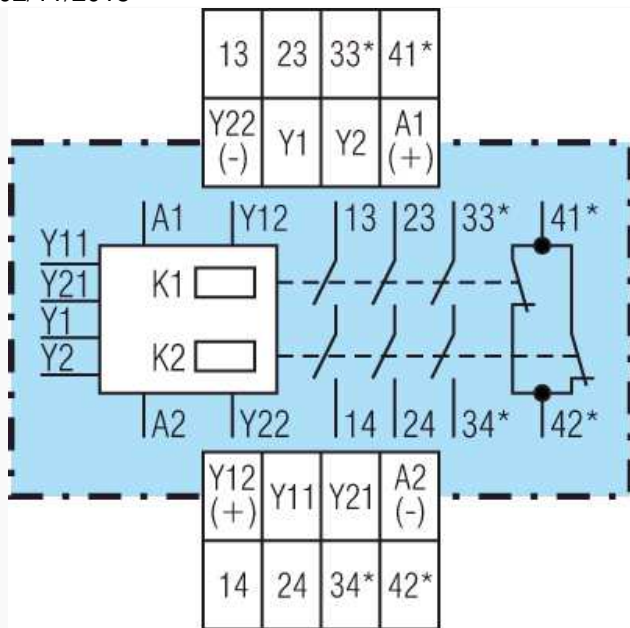
Connections

Front face drawing KZH2-YS



Connections

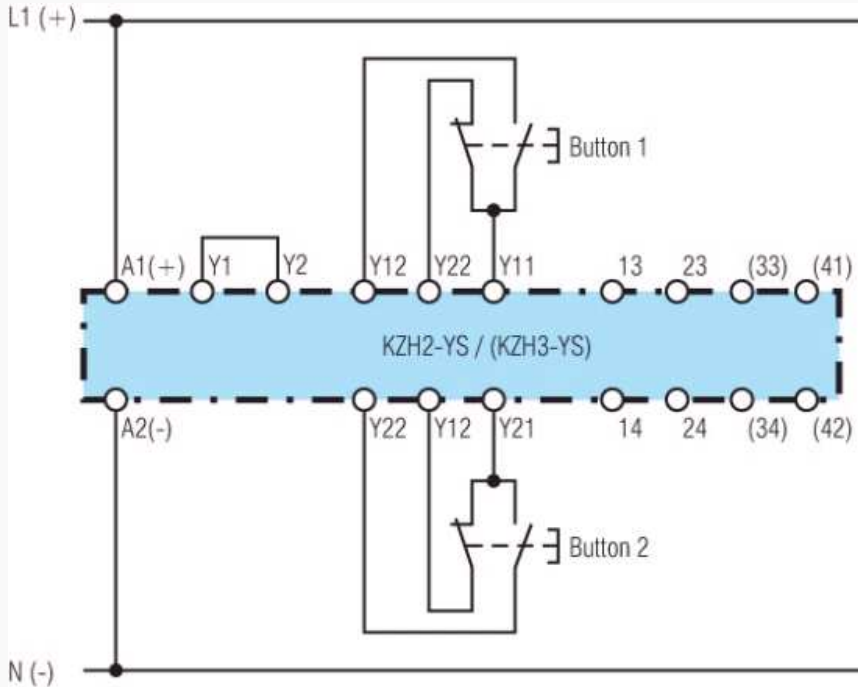
Contacts



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

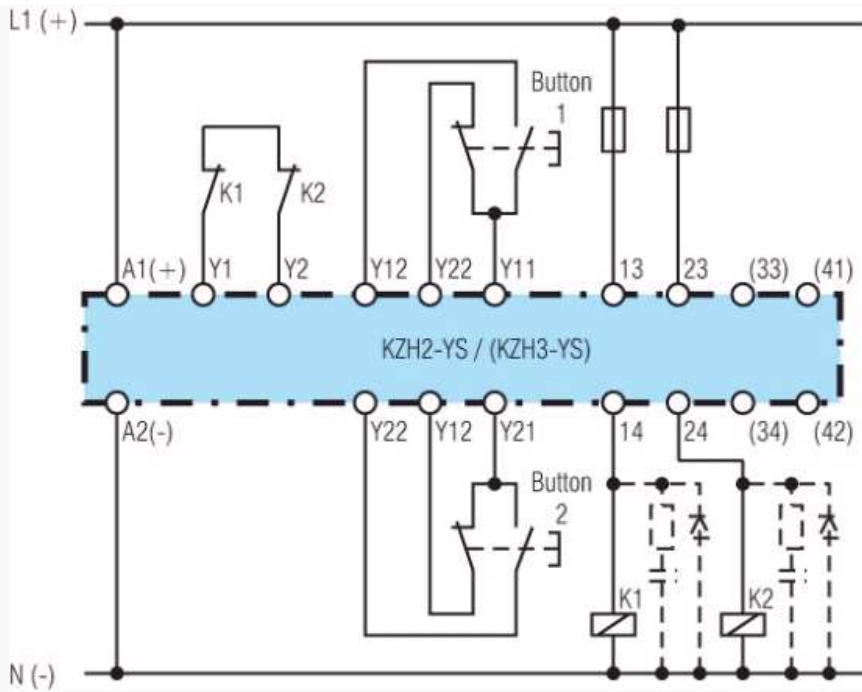
Applications

Two-hand safety relay



Applications

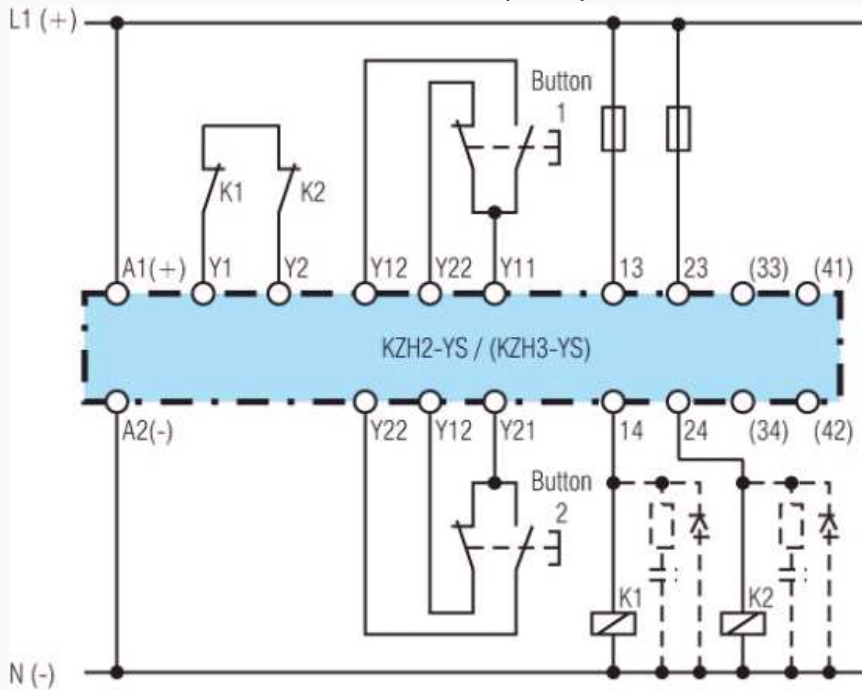
Two-hand control with contact reinforcement via external positively-driven contactors



When switching inductive loads, spark absorbers are recommended

Applications

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



When switching inductive loads, spark absorbers are recommended