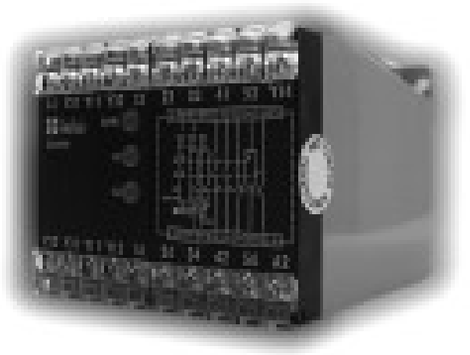
- Industrial design
- Width 90mm
- Single or dual channel activation
- 3 N/O safety contacts, 1 N/O fleeting and 1 N/C control contact
- Cross monitoring
- Stop-category 0 (according to EN 60204-1)
- Safety-category 4 (according to EN 954-1)



Technical data

1. Functions
Basic unit for emergency stop and safety gates applications

2. Indicators
Green LED (SUPPLY) ON:	indication of supply voltage
Green LED (K2) ON/OFF:	indication of relay output
Green LED (K3) ON/OFF:	indication of relay output

3. Mechanical design
Self-extinguishing plastic housing, IP rating IP40
Mounted on DIN-Rail TS 35 according to EN 50022
Mounting position: any
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
Initial torque: 0.8 to 1.0Nm
Terminal capacity:
2 x 2.5mm² without multicore cable end
2 x 1.5mm² with/without multicore cable end

4. Input circuit
Supply voltage:

24V DC	terminal A1-A2	(ZK32x90 24VDC)
115V AC	terminal A1-A2	(ZK32x90 115VAC)
230V AC	terminal A1-A2	(ZK32x90 230VAC)

Tolerance: -20% to +10%
Rated frequency: 50 to 60Hz
Rated consumption:

24V DC	2.4W	(ZK32x90 24VDC)
115V AC	3.2VA(2.5W)	(ZK32x90 115VAC)
230V AC	3.2VA(2.5W)	(ZK32x90 230VAC)

Duration of operation: 100%
Residual ripple for DC: $2.4V_{SS}$

5. Output circuit
3 normally open forced safety contacts,
1 normally open forced fleeting contact and
1 normally closed forced control contact
Switching capacity: 1380VA (6A/230V AC/DC)
Rated current: max. 6A
Total current all contacts: max. 18A
Fusing: 6A fast acting
Mechanical life: 10×10^6 operations
Switching frequency:
3600/h at I_e 6A / U_e 230V AC (AC-15)
360/h at I_e 6A / U_e 24V DC (DC-13)
Insulation voltage: 250V AC (according to IEC 664-1)
Surge voltage: 4kV, overvoltage category III according to IEC 664-1)

6. Control circuit (only for supplying the control inputs)
Line resistance: ≤70Ω
Control contacts Y1-Y2:

Galvanically separated:	No (A1-A2-Y11-Y21)	
Rated voltage:	24V DC	
No-load voltage:	≤40V DC	
Rated current:	80mA	
Short circuit current I_K:	max. 3A (S11-S33 to A2)	
Fusing:	PTC-resistor (DC) resp. short-circuit proof transformer (AC)	
Response time PTC:	3s	
Recovery time PTC:	2s	

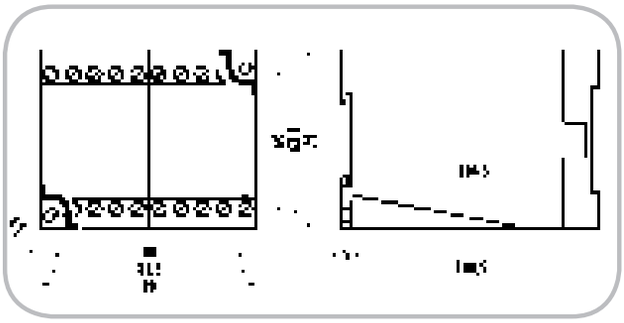
Control contacts Y12, Y13, Y14, Y31

Rated current input:	K1	100mA
	K2, K3	40mA
Response time t_A:	K1, K2, K3	25ms
Release time t_R:	K2, K3	5ms (E-stop)
Release time t_{R1}:	K1	70ms (ON-cycle)
Release time t_{R2}:		100ms (interruption of supply voltage)
Activation time t_M:	K1	min. 60ms

7. Ambient conditions

Ambient temperature:	-25 to +55°C (according to IEC 68-1)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	83% (at 23°C), 93% (at 40°C) according to DIN 50016
Pollution degree:	3 outside, 2 inside (according to IEC 664-1)

Dimensions



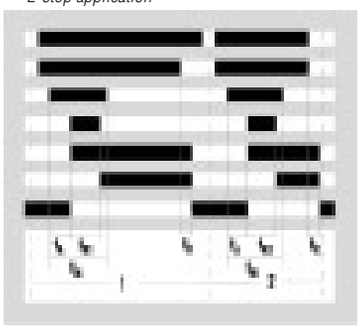
Functions

Basic unit for emergency stop and safety gates applications

Following application of the supply voltage to terminals A1/A2, and if the E-stop switch is not activated, the relay K1 is energised by the RESET switch. The contacts of the relay K1 trigger the relays K2 and K3. The latter become self-locking through their own contacts. At the same time, the relay contacts of K2 and K3 de-energise K1 which releases. After a drop-out delay time t_R this relay switches into off-position. After this switch on phase, the three enabling current paths (13/14, 23/24, 33/34), which are intended for the output, are activated. The fleeting contact 53/54 is closed only during the time when K1 is energised. It can be used, e.g., for indicator purposes or to monitor the RESET- switch. Three LEDs provide a display, and these LEDs are associated with the safety channels and the power supply.
If the E-stop switch is activated, the current leads for K2 and K3 relays are interrupted. The enabling current path 13/14, 23/24, 33/34 are interrupted and the normally closed contact 41/42 is closed.

Cross monitoring
With two channel wiring of the E-stop circuit, it is possible to monitor the presence of a short circuit in the cables connected to it (cross monitoring). If a fault occurs, the voltage present at Y11/Y12 is short-circuited. This causes the immediate return of the relays K2 and K3 to their off-position and the activation of the protective internal electronic circuitry.

E-stop application



A1/A2 supply voltage, LED SUPPLY
Y12, Y31 E-stop
Y13 Reset
K1, 53/54
K2, K3
13/14, 23/24, 33/34, LED K2, LED K3
41/42

t_A	*response time*
t_R	*release time at E-stop*
t_{R1}	*release time K1*
t_{R2}	*release time (supply voltage breakdown*
t_M	*minimum activation time*
1	*E-stop via Y12, Y31*
2	*Netzausfall (A1/A2)*

Connections