



# Emergency-Off Relay

SNO 5002K, SNO 5002.1K

PI 0096-0402 E



EN 60204-1  
EN 954-1

For Stop Category 0  
Safety Category 4

- Safety switching device acc. to EN 60204-1, category 4 acc. to EN 954-1
- Safe isolation between supply, control and enable circuits  
Air and creepage paths  $\geq 5.5$  mm
- Supply voltage up to 230 V AC
- Controlled through supply circuit
- Control voltage 24 V DC
- Feedback circuit and reset circuit
- Restart block (SNO 5002K)
- 2 Enable contacts
- 1 Alarm contact, N/C (SNO 5002K)
- LED status indicator

## Applications

Emergency-off and safety door monitoring, especially for

- Palleting equipment
- Packaging equipment
- Machine tools
- Construction machinery

with supply voltages from 12 V DC to 230 V AC

## Device Description

The SNO 5002K and SNO 5002.1K are enclosed in a 22.5 mm wide case for 35 mm DIN mounting rails acc. to EN 50022. The units are connected by means of screw terminals.

## Principle of Operation

These units are suitable for monitoring control stations with a one-channel design. The unit is ready and the "SUPPLY" LED will light up when the safety circuit is closed and supply voltage is applied. In order to enable the unit, the reset/feedback circuit must be closed. The reset/feedback circuit consists of the series-connected contacts of the reset switch (N/O) and the N/C contacts of the post-connected contactors.

Manual start with RESET momentary contact switch monitoring (only for SNO 5002K): RESET momentary contact switch between Y1/Y3.

Manual start without RESET momentary contact switch monitoring: RESET momentary contact switch between Y1/Y2

Automatic start:

Jumper between Y1/Y2

## Notes

Please review the connection diagram and the technical specifications of the device when selecting a control station.

The control output Y1 is intended exclusively for the connection of control stations in accordance with the respective instructions for use and not for the connection of external loads, such as lamps, relays, or contactors.

## Device Options

Rated voltage	Price list 2002
12 V DC	
24 V DC	
24 V AC	
115 - 120 V AC	
230 V AC	

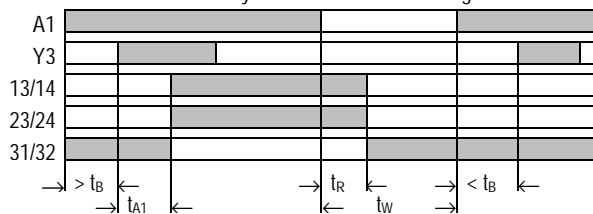
## Ordering Example

SNO 5002K	24 V DC	Rated voltage
Type		

## Function Diagram

SNO 5002K

Manual Start with RESET Momentary Contact Switch Monitoring

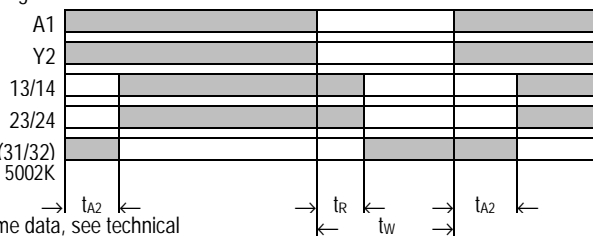


For time data, see technical specifications

## Function Diagram

SNO 5002K or SNO 5002.1K

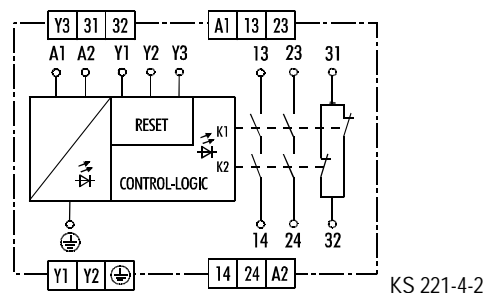
Automatic Start / Manual Start without RESET Momentary Contact Switch Monitoring



For time data, see technical specifications

## Connection Diagram

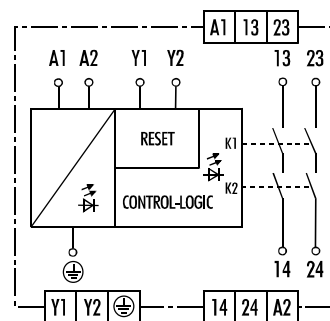
SNO 5002K



KS 221-4-2

## Connection Diagram

SNO 5002.1K



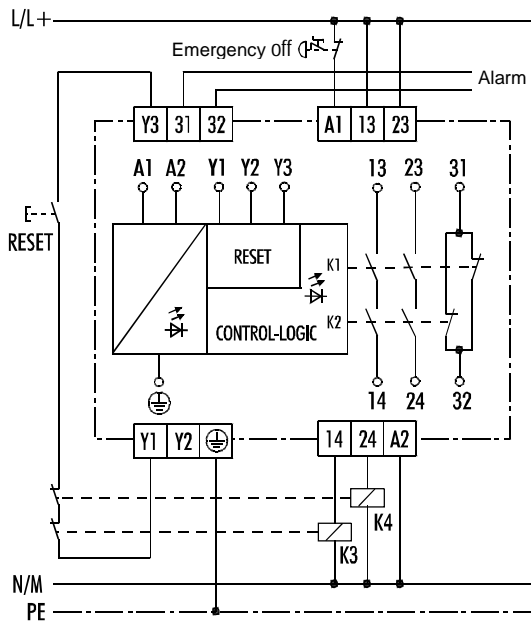
KS 221-3-2



## Emergency-Off Relay

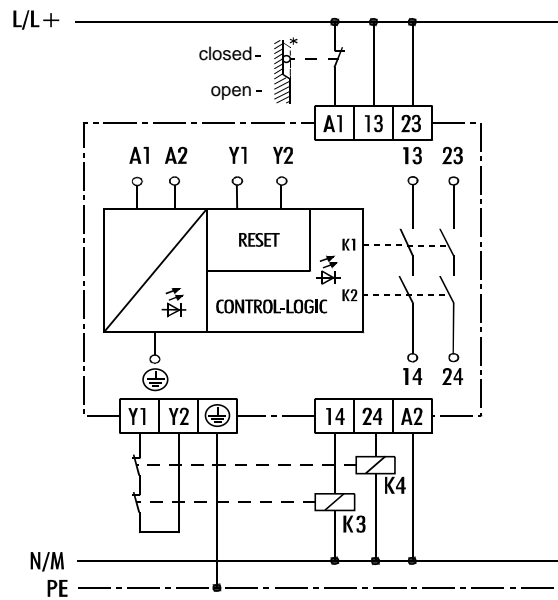
SNO 5002K, SNO 5002.1K

### Application Example: Emergency-Off with SNO 5002K



One-channel monitoring of an emergency-off momentary contact switch up to category 2 acc. to EN 954-1. Manual start is achieved through the RESET momentary contact switch when the K4 and K3 normally closed contacts are closed. The internal restart block (RESET to Y3) prevents an automatic start when the RESET circuit is jumpered.

### Application Example: Sliding Protective Gate with SNO 5002.1K

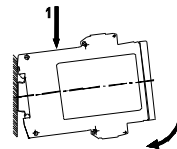


\* = Locator with positive operation

One-channel monitoring of a limit switch up to category 2 acc. to EN 954-1. A start is triggered automatically if the K3 normally closed contacts are closed.

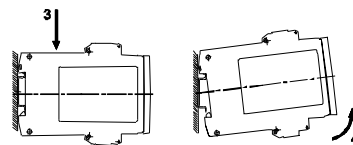
### Assembly

- 1 Hang the relay on the top-hat rail.
- 2 Apply light pressure in the direction of the arrow to snap the relay onto the top-hat rail.

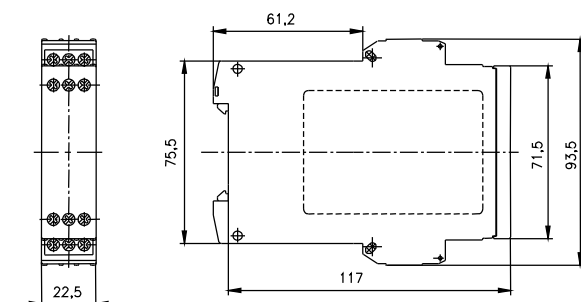


### Disassembly

- 3 Push the relay down in direction of the arrow.
- 4 While pushing down, pull the relay in the direction of the arrow out of the detent and off the top-hat rail.



### Dimension Diagram





## Emergency-Off Relay

SNO 5002K, SNO 5002.1K

## Technical Specifications

## General data

Weight	0.27 kg
Ambient temperature, operating range	-25 to +55 °C
Climate application class	H V G acc. to DIN 40040: 04.87
Air and creepage paths	acc. to DIN VDE 0110 part 1: 04.97
Over-voltage category	IV
Rated surge voltage	6 kV
Contamination level	2
Rated voltage	300 V
Test voltage	2 kV
Safe isolation acc. to DIN EN 50 178 between	Supply circuit – control circuit (only for AC units) Supply circuit – output circuits Control circuit – output circuits Output circuits

## Supply circuit

Rated voltage $U_N$	12 V DC, 24 V DC 24 V AC, 115 - 120 V AC, 230 V AC
Residual ripple, DC supply	2.4 V <sub>SS</sub>
Rated consumption	
DC supply	1.3 W
AC supply	2.2 W / 2.8 VA
Operating range	0.85 to 1.1 $U_N$
Fusing	
DC supply	PTC resistor
AC supply	Short-circuit-proof transformer

## Control circuit

Output Y1	
Rated voltage / non-load voltage	22 V- / < 40 V-
Inputs Y2 and Y3	
Rated current / peak current	90 mA / 200 mA
Times	
$t_R$ , K1 and K2	25 ms
$t_{A1}$ , input Y3	30 ms
$t_{A2}$ , input Y2	300 ms
$t_B$ , standby time	max. 300 ms
$t_W$ , recovery time	max. 200 ms

## Output circuits

Enable contacts	2 N/O, undelayed
Alarm contact	1 N/C, undelayed (SNO 5002)
Contact type	Single contact, positively driven
Contact material	Ag Sn O <sub>2</sub> + 2 μm Au
Max. switching current $I_n$ / contact fusing	6 A / 6.3 A fast-acting or 4 A slow-acting
Rated switching voltage $U_n$	230 V- / 230 V-
Application category acc. to	AC-15: $U_e = 230 V$ , $I_e = 3 A$
DIN VDE 0660 part 200: 07.92	DC-13: $U_e = 24 V$ , $I_e = 2.5 A$

## LED Indicators (green)

SUPPLY	Supply voltage ON
K1, K2	Relays K1 and K2 are switched, enable activated

## Standards

DIN VDE 0110-1:1997  
 DIN EN 954-1:1997  
 DIN EN 50178:1998  
 DIN EN 60204-1:1998  
 DIN EN 60439-1:2000  
 DIN EN 60529:2000  
 DIN EN 60947-1:1999  
 DIN EN 60947-5-1:2000

Subject to change

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