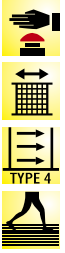


# Basic device – SNO 4063K/KM



## Function

### SNO 4063K

The device is a two-channel switching device for emergency stop applications with self-monitoring on each ON-OFF cycle. It complies with EN 60204-1 and is equipped with forcibly guided relays.

#### Basic function

After supply voltage has been applied to the A1/A2 terminals and the safety inputs have been closed, pressing the reset button closes the enabling current paths (manual start). When the safety inputs are opened/de-energized the enabling current paths will open.

#### Operating modes / system functions

- **Single or two-channel control** With single-channel control both safety channels, CH1 and CH2, are connected in parallel; with two-channel control they are switched separately. For AC devices, only two-channel operation with cross-connection monitoring is possible.
- **Without cross monitoring** Both safety channels are switched to the positive potential (S12 and S31 to S11).
- **With cross monitoring** Safety channel CH1 is switched to positive potential (S11 to S12), and safety channel CH2 to negative potential (S21 to S22).
- **Manual start** When the safety inputs are closed, a button is used to open reset input S34 (triggering with falling edge) or to close reset input S35 (triggering with rising edge).
- **Automatic start** Reset input S35 is connected to S33. The device starts with the rising edge of the signal on safety input S12.
- **Start inhibit** After supply voltage has been applied and the safety inputs closed, the enabling paths will not close. Starting is only possible after the

## Applications

- Protection of people and machinery
- Monitoring of emergency stop applications
- Monitoring of safety gates
- Monitoring of light barriers
- Up to PL e/Category 4 (EN ISO 13849-1)
- Up to SIL<sub>CL</sub> 3 (EN 62061)

## Features

- Stop Category 0 according to EN 60204-1
- Manual or automatic start
- Cross monitoring
- Single-channel or two-channel control
- 3 enabling current paths

reset button has been pressed. For start inhibit the reset inputs have to be controlled with the button, as with manual start mode.

- **Restart inhibit** No restart after the safety inputs have been opened and closed. Restarting is only possible after the reset button has been pressed. For restart inhibit the reset inputs have to be activated with the button, as in manual start mode.
- **Semiconductor compatible** OSSD (output signal switching devices) signals from a light curtain or other safety sensors with semiconductor outputs can be processed. Test pulses  $< t_{TP}$  do not influence the device functions. Test pulses  $> t_{TP}$  can lock the device.

### SNO 4063KM

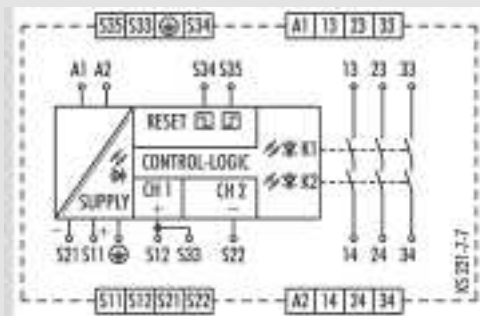
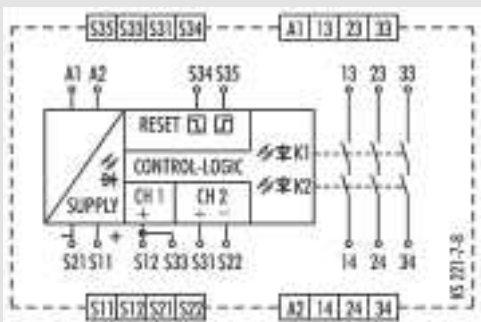
The function of this device corresponds to that of the SNO 4063K. The device is suitable for connecting to light curtains for Type 4 (EN 61496-1) and to short-circuit forming 4-wire safety mats, switching strips or switching edges (without monitoring resistance).

- **Safety mats** The device must be operated with two channels and cross monitoring. If there is resistance  $< 50 \Omega$  / channel and a short circuit between the channels (S11/S12 and S21/S22) the enabling paths open and the SUPPLY LEDs flash.
- **Light curtain for Type 4 (EN 61496-1)** The device will be operated with two channels and without cross monitoring, if the light curtain connected to the OSSD detects a shunt fault on its own.

For applications with tactile operating modes (rapid ON-OFF cycles, for example at manual supply) we recommend the use of SNO 4063KM.

## Circuit diagram

### SNO 4063K/KM

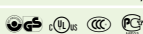


# Basic device – SNO 4063K/KM

## Overview of devices | part numbers

Type	Rated voltage	Terminals	Part no.	Std. pack
SNO 4063K	12 V DC	Screw terminals, fixed	R1.188.1110.0	1
	24 V AC/DC	Screw terminals, fixed	R1.188.0960.0	1
	115 – 120 V AC	Screw terminals, fixed	R1.188.0970.0	1
	230 V AC	Screw terminals, fixed	R1.188.0980.0	1
SNO 4063K-A	12 V DC	Screw terminals, pluggable	R1.188.1120.0	1
	24 V AC/DC	Screw terminals, pluggable	R1.188.0990.0	1
	115 – 120 V AC	Screw terminals, pluggable	R1.188.1000.0	1
	230 V AC	Screw terminals, pluggable	R1.188.1010.0	1
SNO 4063K-C	24 V AC/DC	Cage clamp, pluggable	R1.188.2450.0	1
SNO 4063KM	24 V AC/DC	Screw terminals, fixed	R1.188.1270.0	1
SNO 4063KM-A	24 V AC/DC	Screw terminals, pluggable	R1.188.1280.0	1

## Technical data

<b>Function</b>	Emergency stop relay	
Function display	3 LEDs, green	
<b>Power supply circuit</b>		
Rated voltage $U_N$	A1, A2	24 V AC/DC, 115-120 V AC, 230 V AC
Rated consumption	24 V DC (K / KM)	2.0 W / 2.1 W
	115-120 V AC, 230 V AC	2.4 W / 4.4 VA
Rated frequency	50 - 60 Hz	
Operating voltage range $U_B$	0.85 - 1.1 x $U_N$	
Electrical isolation supply circuit - control circuit	yes (at $U_N = 115-230$ V AC, 230 V AC)	
<b>Control circuit</b>		
Rated output voltage	S11/S21	22 V DC
Input current / peak current	S12/S33, S31/S22	40 mA / 100 mA
	S34, S35	5 mA / 50 mA
Response time $t_{A1} / t_{A2}$	40 ms / 600 ms	
Minimum ON time $t_M$	50 ms	
Recovery time $t_w$	100 ms	
Release time $t_R$	15 ms	
Synchronous time $t_s$	200 ms (CH1 → CH2)	
Permissible test pulse time $t_{TP}$	< 1ms	
Max. resistivity, per channel <sup>1)</sup>	24 V AC/DC	$\leq (5 + (1.176 \times U_B / U_N - 1) \times 100) \Omega$
	115-120 V AC, 230 V AC	$\leq (5 + (1.176 \times U_B / U_N - 1) \times 100) \Omega$
<b>Output circuit</b>		
Enabling paths	13/14, 23/24, 33/34	normally open contact
Contact assignment	forceably guided	
Contact type	Ag-alloy, gold-plated	
Rated switching voltage	enabling path	230 V AC
Max. thermal current $I_{th}$	enabling path	6 A
Max. total current $I^2$ of all current path	( $T_u = 55$ °C)	9 A <sup>2</sup>
Application category (NO)	AC-15	$U_o$ 230 V, $I_o$ 3 A
	DC-13	$U_o$ 24 V, $I_o$ 2.5 A
Short-circuit protection (NO), lead fuse / circuit breaker	6 A class gG / melting integral < 100 A <sup>2</sup> s	
Mechanical life	10 <sup>7</sup> switching cycles	
<b>General data</b>		
Creepage distances and clearances between the circuits	EN 60664-1	
Protection degree according to DIN EN 60529 (housing / terminals)	IP40 / IP20	
Ambient temperature / storage temperature	-25 °C - +55 °C / -25 °C - + 75 °C	
Wire ranges screw terminals,	fine-stranded / solid	1 x 0.14 mm <sup>2</sup> – 2.5 mm <sup>2</sup> / 2 x 0.14 mm <sup>2</sup> – 0.75 mm <sup>2</sup>
	fine-stranded with ferrules	1 x 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup> / 2 x 0.25 mm <sup>2</sup> – 0.5 mm <sup>2</sup>
Permissible torque	0.5 - 0.6 Nm	
Wire ranges cage clamp terminals	1 x 0.25 mm <sup>2</sup> – 1.5 mm <sup>2</sup>	
Weight	24 V AC/DC device / AC device	0-21 kg / 0-25 kg
Standards	EN ISO 13849-1, EN 62061	
Approvals		

<sup>1)</sup> If two-channel devices are installed as single channel, the value is halved.