

Safety switching device SNA 40..K/KM

safety



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Emergency stop and safety gate monitor

Description

The safety switching devices of our SNA product line are used to monitor safety sensors (emergency stop buttons, safety gate switches, etc.), feature a large number of safety switching contacts (3 NO contacts/ 1 NC contact or 4 NO contacts) with a total width of only 22.5 mm at a constant current of up to 8A. They can be implemented in the extended temperature range up to 65°C.

Applications

These devices can be implemented e.g. in mechanical engineering applications, in the packaging industry, the plastics processing industry, the wood and building materials processing industries and the plant engineering sector. They can also be used to monitor robots and can be further applied in transport and building machinery, in combustion plants and in elevator systems. They are applicable up to category 4 according to EN954-1 or to SIL_{CL} 3 respectively according to EN62061.

Approvals



EN 61508
EN 62061



EN ISO 13849-1



EN 954-1

Notes

The following types of connection are available:

- Terminal block, fixed
- Coded pluggable terminals with screw-type terminal connections
- Coded pluggable terminals with spring-loaded terminal connections

Function

- Manual reset with monitoring
- Automatic reset
- Supply voltage ranging from 24V AC/DC to 230V AC
- With or without cross monitoring
- Single-channel or two-channel emergency stop monitoring
- Single-channel or two-channel safety gate monitoring (e.g. with mechanical or magnetic safety switches)
- Safe semiconductor outputs (e.g. of safety controls or safety light curtains) can be implemented as safe relay outputs



contacts are green.
CUSTOMER INFORMATION

Safety switching device SNA 4043K/KM, SNA 4044K/KM

Functions

Automatic reset

With supply voltage applied to terminals A1/A2 and the safety inputs closed, automatic operation will close the enabling current paths (NO contacts), if S12 and S34 are jumpered.

Manual reset without reset button monitoring

With supply voltage applied to terminals A1/A2 and the safety inputs closed, operation of the reset button will connect the current enabling paths (NO contacts) to terminal S34. Any reset button short-circuit will not be detected.

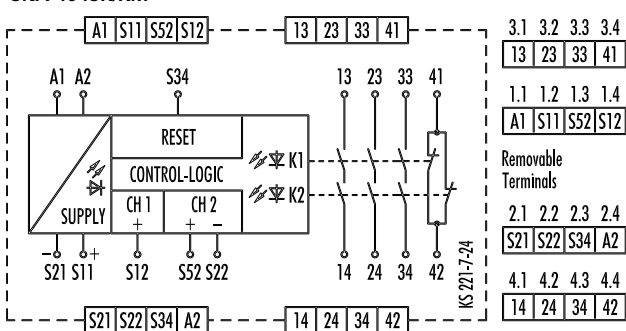
Locking protection for KM devices

The devices have been designed for very short interruptions of the safety inputs, that may occur when optical protective equipment (BWS type 4) is activated. Locking of the device due to short interruptions is excluded.

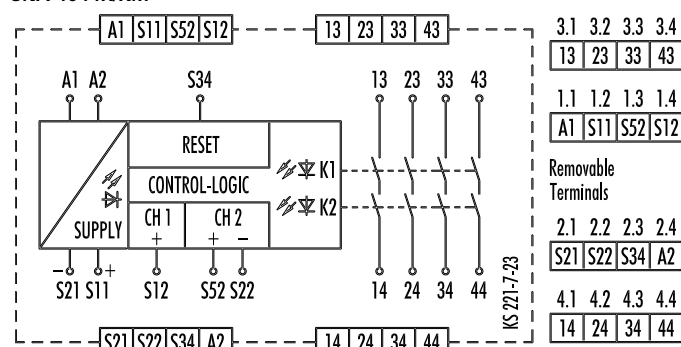


Circuit diagram

SNA 4043K/KM



SNA 4044K/KM



Technical data	SNA 4043K/KM	SNA 4044K/KM
Function according to EN 60204-1	Emergency stop relay	
Contact assignment	3 enabling current paths (NO contact) 1 signaling current path (NC contact)	4 enabling current paths (normally open contact)
Power supply circuit		
Rated voltage	AC/DC 24V / AC 42-48V / AC 115-120V / AC 230V	
Operating voltage range	0.85 – 1.1 × U _N	
Control circuit		
Electrical isolation between A1, A2 and control circuits	AC devices	
Rated current/peak current input S12, S52, S22	25 mA / 100 mA	
Rated current/peak current input S34	5 mA / 100 mA	
Function display	3 LEDs, green	
Output circuit		
Release time t _r	10 ms	
Contact type	positively driven	
Rated switching voltage U _n	AC 230V	
Max. continuous current I _n per current path (AC/DC 24V device / AC devices)	8A / 6A	
Max. total current of all current paths (AC/DC 24V device / AC device)	12A / 8A	
Application category according to EN 60947-5-1	AC-15: U _e 230 V AC, I _e 4 A (360 h ⁻¹) DC-13: U _e 24 V DC, I _e 4 A (360 h ⁻¹)	
General information		
Creepage distances and clearances between the circuits	according to EN 60664-1	
Protection degree according to DIN EN 60529 (housing / terminals)	IP40 / IP20	
Ambient temperature, operating range	-25 – +65°C	
Standards	IEC 61508, EN 954-1, ISO 13849-1, EN 81-1, EN 50156-1	
Approvals	TÜV	

Safety switching device SNA 4063K/KM, SNA 4064K/KM

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Functions

Manual reset with reset button monitoring

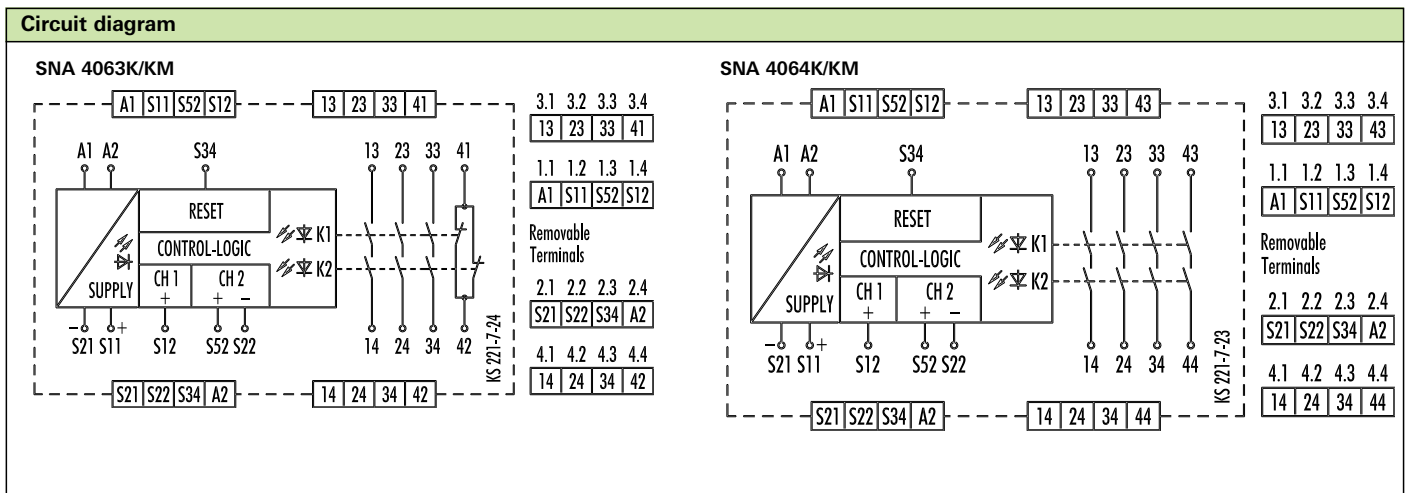
With supply voltage applied to terminals A1/A2 and the safety inputs closed, operation of the reset button will connect the current enabling paths (NO contacts) to terminal S34. Any reset button short-circuit will be detected.

Locking protection for KM devices

The devices have been designed for very short interruptions of the safety inputs, that may occur when optical protective equipment (BWS type 4) is activated. Locking of the device due to short interruptions is excluded.



contacts are green.



Technical data	SNA 4043K/KM	SNA 4044K/KM
Function according to EN 60204-1	Emergency stop relay	
Contact assignment	3 enabling current paths (NO contact) 1 signaling current path (NC contact)	4 enabling current paths (normally open contact)
Power supply circuit		
Rated voltage	AC/DC 24V / AC 42-48V / AC 115-120V / AC 230V	
Operating voltage range	0.85 – 1.1 x U _N	
Control circuit		
Electrical isolation between A1, A2 and control circuits	AC devices	
Rated current/peak current input S12, S52, S22	25 mA / 100 mA	
Rated current/peak current input S34	5 mA / 100 mA	
Function display	3 LEDs, green	
Output circuit		
Release time t _r	10 ms	
Contact type	positively driven	
Rated switching voltage U _n	AC 230V	
Max. continuous current I _n per current path (AC/DC 24V device / AC devices)	8A / 6A	
Max. total current of all current paths (AC/DC 24V device / AC device)	12A / 8A	
Application category according to EN 60947-5-1	AC-15: U _e 230 V AC, I _e 4 A (360 h ⁻¹) DC-13: U _e 24 V DC, I _e 4 A (360 h ⁻¹)	
General information		
Creepage distances and clearances between the circuits	according to EN 60664-1	
Protection degree according to DIN EN 60529 (housing / terminals)	IP40 / IP20	
Ambient temperature, operating range	-25 – +65°C	
Standards	IEC 61508, EN 954-1, ISO 13849-1, EN 81-1, EN 50156-1	
Approvals	TÜV	



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Types of connection



Terminal block, fixed



Screw type terminal, pluggable (-A)



Spring-loaded terminal, pluggable (-C)

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Components and system components for the control cabinet

- DIN rail terminal blocks
 - with screw connection
 - with spring clamp connection
 - with IDC connection
- Safety
 - Safety relays
 - Modular safety systems
- Fieldbus components
- Interface
 - Power supplies
 - Overvoltage protection
 - Measuring and monitoring relays
 - Time and switching relays
 - Coupling relays/solid state relays
 - Analog modules
 - Passive interfaces

Components and system components for field applications

- Remote automation
 - Remote power distribution
 - Remote fieldbus interface
- Industrial multipole connectors
 - Modular multipole connectors
 - High-density multipole connectors
 - High-current multipole connectors
 - Multipole connectors for hazardous areas
 - Bushings for control cabinets
 - D-Sub connectors
- Round connectors

Empty housings and appliance connectors/terminal strips

BIT Wieland

- Building installation systems
 - Mains connectors IP20/IP65...IP68
 - Bus connectors
 - Combined connectors
 - Low-voltage connectors
 - Flexible flat cable systems
 - Distribution systems
 - Switching devices for KNX, LON, radio control
 - DIN rail terminal blocks for electrical installations
 - Overvoltage protection

PCB connectors Wieland

- PC board terminals/PC board connectors
 - with screw connection
 - with spring clamp connection
 - with TOP connection

Overview of devices

Type	Rated voltage	Terminals	Part number	Std. Pack
SNA 4043K	AC/DC 24 V	Screw terminals, fixed	R1.188.1680.0	1
SNA 4043K	AC 42-48 V	Screw terminals, fixed	R1.188.1690.0	1
SNA 4043K	AC 115-120 V	Screw terminals, fixed	R1.188.1700.0	1
SNA 4043K	AC 230 V	Screw terminals, fixed	R1.188.1710.0	1
SNA 4043K-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.1810.0	1
SNA 4043K-A	AC 42-48 V	Screw terminals, pluggable	R1.188.1820.0	1
SNA 4043K-A	AC 115-120 V	Screw terminals, pluggable	R1.188.1830.0	1
SNA 4043K-A	AC 230 V	Screw terminals, pluggable	R1.188.1840.0	1
SNA 4043K-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.1940.0	1
SNA 4043KM	AC/DC 24 V	Screw terminals, fixed	R1.188.3100.0	1
SNA 4043KM-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.3250.0	1
SNA 4043KM-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.3400.0	1
SNA 4044K	AC/DC 24 V	Screw terminals, fixed	R1.188.1730.0	1
SNA 4044K	AC 42-48 V	Screw terminals, fixed	R1.188.1740.0	1
SNA 4044K	AC 115-120 V	Screw terminals, fixed	R1.188.1750.0	1
SNA 4044K	AC 230 V	Screw terminals, fixed	R1.188.1760.0	1
SNA 4044K-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.1860.0	1
SNA 4044K-A	AC 42-48 V	Screw terminals, pluggable	R1.188.1870.0	1
SNA 4044K-A	AC 115-120 V	Screw terminals, pluggable	R1.188.1880.0	1
SNA 4044K-A	AC 230 V	Screw terminals, pluggable	R1.188.1890.0	1
SNA 4044K-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.1960.0	1
SNA 4044KM	AC/DC 24 V	Screw terminals, fixed	R1.188.1470.0	1
SNA 4044KM-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.1480.0	1
SNA 4044KM-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.3410.0	1
SNA 4063K	AC/DC 24 V	Screw terminals, fixed	R1.188.1620.0	1
SNA 4063K	AC 42-48 V	Screw terminals, fixed	R1.188.1720.0	1
SNA 4063K	AC 115-120 V	Screw terminals, fixed	R1.188.1420.0	1
SNA 4063K	AC 230 V	Screw terminals, fixed	R1.188.1430.0	1
SNA 4063K-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.1440.0	1
SNA 4063K-A	AC 42-48 V	Screw terminals, pluggable	R1.188.1850.0	1
SNA 4063K-A	AC 115-120 V	Screw terminals, pluggable	R1.188.1450.0	1
SNA 4063K-A	AC 230 V	Screw terminals, pluggable	R1.188.1460.0	1
SNA 4063K-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.1950.0	1
SNA 4063KM	AC/DC 24 V	Screw terminals, fixed	R1.188.3140.0	1
SNA 4063KM-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.3290.0	1
SNA 4063KM-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.3420.0	1
SNA 4064K	AC/DC 24 V	Screw terminals, fixed	R1.188.1770.0	1
SNA 4064K	AC 42-48 V	Screw terminals, fixed	R1.188.1780.0	1
SNA 4064K	AC 115-120 V	Screw terminals, fixed	R1.188.1790.0	1
SNA 4064K	AC 230 V	Screw terminals, fixed	R1.188.1800.0	1
SNA 4064K-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.1900.0	1
SNA 4064K-A	AC 42-48 V	Screw terminals, pluggable	R1.188.1910.0	1
SNA 4064K-A	AC 115-120 V	Screw terminals, pluggable	R1.188.1920.0	1
SNA 4064K-A	AC 230 V	Screw terminals, pluggable	R1.188.1930.0	1
SNA 4064K-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.1970.0	1
SNA 4064KM	AC/DC 24 V	Screw terminals, fixed	R1.188.3210.0	1
SNA 4064KM-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.3360.0	1
SNA 4064KM-C	AC/DC 24 V	Spring terminals, pluggable	R1.188.3430.0	1