SNA 4043K/KM/KE, SNA 4044K/KM
Monitoring of emergency stop, safety gates and light barriers

(pending)

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_{CL} 3 (EN 62061)

Features

- Stop Category 0 according to EN 60204-1
- Single-channel or two-channel control
- Automatic start
- Manual reset without monitoring
- Cross monitoring
- 3 to 4 enabling current paths

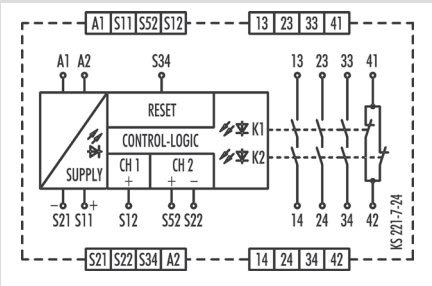
Function

Emergency stop and safety gate monitor 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 8 A. They can be implemented in the extended temperature range up to 65° C.

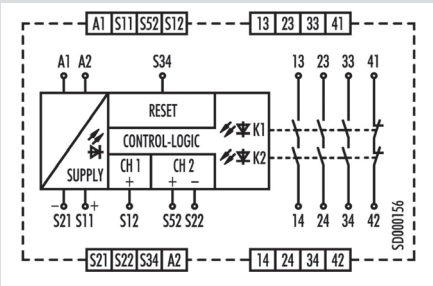
- **Automatic start** – Reset input S34 is connected to safety input S11. To monitor external contact blocks (EDM), their NC contacts must be connected in series between S34 and S11.
- **Manual start without monitoring** – Reset input S34 is connected to safety input S11 via a RESET button. To monitor external contact blocks (EDM), their NC contacts must be connected to the RESET button in series.
- **Monitoring of light curtains** – The KM device types are especially suitable for the monitoring of very fast tactile switching operations, for example in safety light curtain applications. Very short switch-off procedures of a few milliseconds are detected reliably and lead to the switching off of the internal relays.

Circuit diagram

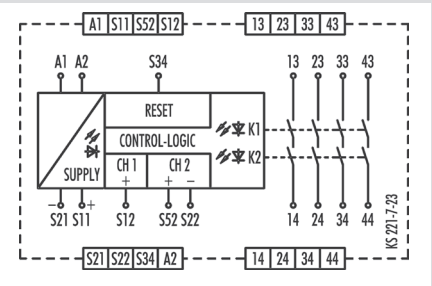
SNA 4043K/KM



SNA 4043KE



SNA 4044K/KM



Overview of devices | part numbers

Type	Rated voltage	Terminals	Part no.	Std. pack
SNA 4043K-A	24 V AC/DC	Screw terminals, pluggable	R1.188.1810.0	1
SNA 4043K-A	42-48 V AC	Screw terminals, pluggable	R1.188.1820.0	1
SNA 4043K-A	115-120 V AC	Screw terminals, pluggable	R1.188.1830.0	1
SNA 4043K-A	230 V AC	Screw terminals, pluggable	R1.188.1840.0	1
SNA 4043K-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.1940.0	1
SNA 4043KM-A	24 V AC/DC	Screw terminals, pluggable	R1.188.3250.0	1
SNA 4043KM-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.3400.0	1
SNA 4043KE-A	AC/DC 24 V	Screw terminals, pluggable	R1.188.3810.0	1
SNA 4043KE-C	AC/DC 24 V	Push-in terminals, pluggable	R1.188.3820.0	1
SNA 4044K-A	24 V AC/DC	Screw terminals, pluggable	R1.188.1860.0	1
SNA 4044K-A	42-48 V AC	Screw terminals, pluggable	R1.188.1870.0	1
SNA 4044K-A	115-120 V AC	Screw terminals, pluggable	R1.188.1880.0	1
SNA 4044K-A	230 V AC	Screw terminals, pluggable	R1.188.1890.0	1
SNA 4044K-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.1960.0	1
SNA 4044KM-A	24 V AC/DC	Screw terminals, pluggable	R1.188.1480.0	1
SNA 4044KM-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.3410.0	1

Technical data

Function			Emergency stop relay
Function display			3 LEDs, green
Power supply circuit			
Rated voltage U_N		A1, A2	24 V AC/DC / 42-48 V AC / 115-120 V AC/ 230 V AC
Rated consumption		24 V DC / 24 V AC	1.6 W / 2.9 VA
		42-48 V AC / 115-120 V AC / 230 V AC	2.3 W / 2.6 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 = 42-48 V AC, 115-230 V AC, 230 V AC)
Control circuit			
Rated output voltage		S11/S21	24 V DC
Input current / peak current		S12, S52/S22 | S34	25 mA / 100 mA | 5 mA / 50 mA
Response time t_{A1} / t_{A2}			350 ms / 350 ms
Minimum ON time t_M			100 ms
Recovery time t_W			750 ms
Release time t_R			10 ms
Synchronous time t_S			no
Permissable test pulse time t_{TP}			< 1 ms
Max. resistivity, per channel [1]		24V AC/DC	≤ (5 + (1.176 x U_B / U_N - 1) x 100) Ω
		42-48V AC/ 115-120 V AC, 230 V AC	≤ (5 + (1.176 x U_B / U_N - 1) x 100) Ω
Output circuit	SNA 4043K/KM	SNA 4044K/KM	
Enabling paths	13/14, 23/24, 33/34	13/14, 23/24, 33/34, 43/44	normally open contact
Signaling paths	41/42	---	normally closed contact
Contact assignment			forcebly guided
Contact type			Ag-alloy, gold-plated
Rated switching voltage		enabling / signaling path	230 V AC
Max. thermal current I_{th}		enabling / signaling path	8 A / 5 A
Max. total current I^2 of all current path		(Tu = 55 °C) / (Tu = 65 °C)	25 A^2 / 9 A^2
Application category (NO)		AC-15 | DC-13	U_e 230 V, I_e 3 A | U_e 24 V, I_e 3 A
Short-circuit protection (NO), lead fuse / circuit breaker			6 A class gG / melting integral < 100 A^2s
Mechanical life			10^7 switching cycles
General data			
Creepage distances and clearances between the circuits			EN 60664-1
Protection degree according to EN 60529 (housing / terminals)			IP40 / IP20
Ambient temperature / storage temperature			-25 °C - +65 °C / -25 °C - + 75 °C
Wire ranges screw terminals,	fine-stranded / solid		1 x 0.2 mm² – 2.5 mm² / 2 x 0.2 mm² – 1.0 mm²
	fine-stranded with ferrules		1 x 0.25 mm² – 2.5 mm² / 2 x 0.25 mm² – 1.0 mm²
Permissible torque			0.5 - 0.6 Nm
Wire ranges push-in terminals			1 x 0.25 mm² – 1.5 mm²
Weight	24 V AC/DC device / AC device		0.21 kg / 0.25 kg
Standards			EN ISO 13849-1, EN 62061, EN 81-1, EN 50156-1, EN 61511
Approvals			TÜV, cULus, CCC, GL (pending)

[1] If two-channel devices are installed as single channel, the value is halved.