

SNA 4043K/KM/KE, SNA 4044K/KM

Monitoring of emergency stop, safety gates and light barriers



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

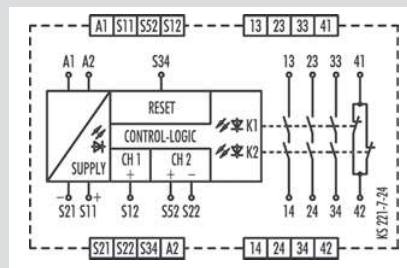
Function

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.

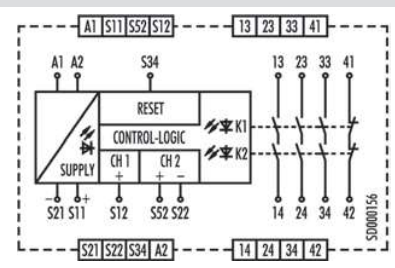
- **Automatic start** – Reset input S34 is connected to safety input S11. To monitor external contact blocks (EDM), their NC contacts must be connected in series between S34 and S11.
- **Manual start without monitoring** – Reset input S34 is connected to safety input S11 via a RESET button. To monitor 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

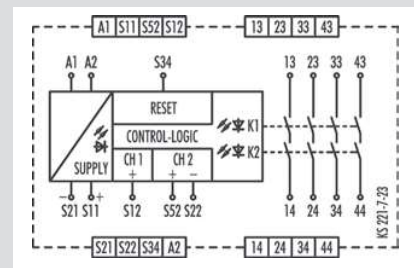
SNA 4043K/KM



SNA 4043KE



SNA 4044K/KM



Overview of devices | part numbers

Type	Rated voltage	Terminals	Part no.	P.U.
SNA 4043K-A	24 V AC/DC	Screw terminals, pluggable	R1.188.1810.0	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	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	
Permissible test pulse time t_{TP}		< 1 ms	
Max. resistivity, per channel ¹⁾	24V AC/DC	$\leq (5 + (1,176 \times U_B / U_N - 1) \times 100) \Omega$	
	42-48V AC / 115-120 V AC, 230 V AC	$\leq (5 + (1,176 \times U_B / U_N - 1) \times 100) \Omega$	
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			forcefully guided
Contact type			Ag-alloy, gold-plated
Rated switching voltage	enabling / signaling path		230 V AC
Max. thermal current I_B	enabling / signaling path		8 A / 5 A
Max. total current I^2 of all current path	($T_u = 55^\circ\text{C}$) / ($T_u = 65^\circ\text{C}$)		25 A ² / 9 A ²
Application category (NO)	AC-15 DC-13		U_B 230 V, I_B 3 A U_B 24 V, I_B 3 A
Short-circuit protection (NO), lead fuse / circuit breaker			6 A class gG / melting integral < 100 A ² s
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 mm ² – 2,5 mm ² / 2 x 0,2 mm ² – 1,0 mm ²
	fine-stranded with ferrules		1 x 0,25 mm ² – 2,5 mm ² / 2 x 0,25 mm ² – 1,0 mm ²
Permissible torque			0,5 - 0,6 Nm
Wire ranges push-in terminals			1 x 0,25 mm ² – 1,5 mm ²
Weight	24 V AC/DC device / AC device		0,21 kg / 0,25 kg
Standards			EN ISO 13849-1, EN 62061, EN 80-20/50, EN 50156-1, EN 61511
Approvals			TÜV, cULus, CCC, GL

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