SNZ 4052K
Two-hand relay type IIIC

Applications

- Protection of people and machinery
- Monitoring of two-hand applications
- Press
- According to EN 574 Type IIIC
- 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
- Two-channel actuation; 1 NO contact and 1 NC contact for each channel
- Cross monitoring
- Monitoring of synchronous activation
- 2 enabling current paths, 1 signaling current path

Function

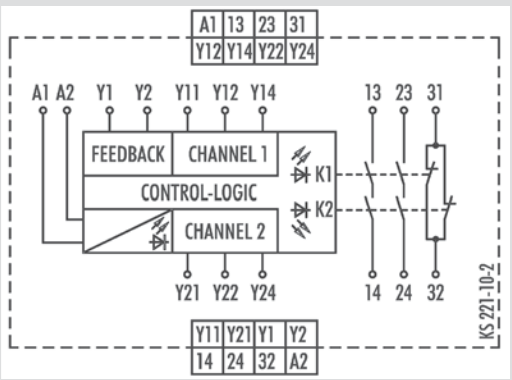
The device complies with EN 574 Type III C safety requirements. The safety behavior of the device is designed for applications according to Category 4 (EN 954-1). The device is single-fault safe and self-monitoring. Synchronous activation of both actuators (two-hand momentary contact or safety gate contacts) is monitored. Each of the two actuators is connected to the device with an NO contact and an NC contact. The technical design of the input circuit provides cross connection and ground fault monitoring. The output function is designed with 2 NO contacts as an enabling current path and 1 NC contact as signaling current path (all forcibly guided).

With supply voltage applied to terminals A1/A2 and the feedback loop (terminals Y1/Y2) closed, the enabling current paths are closed by simultaneously activating the actuators (S1+S2). Both actuators must be activated within 0.5 s for the output contacts to be enabled. If only one of the two actuators is released, the device is immediately de-energized. The enabling current paths open.

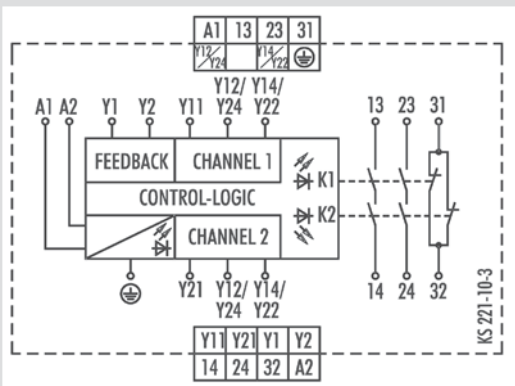
The device can be restarted only after both actuators have returned to their initial position (for example when the two-hand momentary contact switches have been released) and the feedback circuit is closed again. The feedback circuit should only be opened again after both actuators are activated. Otherwise the device will remain in the OFF position. The current status of the device is indicated by 3 LEDs: application of the supply voltage with LED SUPPLY, activation of both actuators with LED K1 and additionally with LED K2 in case of synchronous activation.

Circuit diagram

SNZ 4052K **24 V DC**



115-120 V AC/230 V AC



Overview of devices | part numbers

Type	Rated voltage	Terminals	Part no.	P.U.
SNZ 4052K-A	24 V AC/DC	Screw terminals, pluggable	R1.188.0530.1	1
	115 – 120 V AC	Screw terminals, pluggable	R1.188.0940.1	1
	230 V AC	Screw terminals, pluggable	R1.188.0950.1	1
SNZ 4052K-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.2020.0	1

Technical data

Function		Two-hand control relay
Function display		3 LEDs, green
Power supply circuit		
Rated voltage U_N	A1, A2	24 V AC/DC, 115-120 V AC, 230 V AC
Rated consumption	24 V DC	2.4 W
	115-120 V AC, 230 V AC	2.2 W / 3.1 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)
Control circuit		
Rated output voltage	Y12/Y14, Y22/Y24, Y1	24 V DC
Input current / peak current	Y11, Y21	60 mA / 1000 mA
	Y2	< 100 mA
Response time t_{A1} / t_{A2}		40 ms
Recovery time t_W		250 ms
Release time t_R		50 ms
Synchronous time t_S		≤ 500 ms
Max. resistivity, per channel	24 V AC/DC	≤ (2.5 + (1.176 x U_B / U_N - 1) x 50) Ω
	115-120 V AC, 230 V AC	≤ (2.5 + (1.176 x U_B / U_N - 1) x 50) Ω
Output circuit		
Enabling paths	13/14, 23/24	normally open contact
Signaling paths	31/32	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	6 A / 2 A
Max. total current I^2 of all current path	(Tu = 55 °C)	9 A^2
Application category (NO)	AC-15	U_e 230 V, I_e 3 A
	DC-13	U_e 24 V, I_e 2.5 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 - +55 °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		0.20 kg / 0.25 kg
Standards		EN ISO 13849-1, EN 62061, EN 574
Approvals		TÜV, cULus, CCC