



Expansion Device

PI 0120-0503 E

SNE 4003K, SNE 4003K-A



EN 60204-1	Stopp Category	0 and 1
EN 954-1	Safety Category	4
EN 50178	Safely separation	



Expansion Device for Basic Devices that are Part of the Machine's Safety Equipment

Device for contact expansion single or dual channel control.

SNE 4003K with screw terminals
SNE 4003K-A with plug-in terminals

- Category 4 according EN 954-1
- Stop category 0 and 1 EN 60204-1
- Safety separation according EN 50178
- Single or dual channel control
- 1 Checkback circuit NC
- 3 Enabling circuits NO
- 1 Signalling circuit NC
- Suitable for semiconductor control

Device Description

The SNE 4003K is an expansion device for basic devices (such as safety switching devices, light grilles, laser scanners) that are part of the machine's safety equipment and are used for protecting people, material and machine.

The device is designed with two channels and redundancy. The enabling circuits are separated from control circuits and signalling circuits with clearance/creepage distances > 5.5 mm (safe isolation). There is basic insulation to separate the enabling paths from one another and the control circuits from the signalling circuits.

The broad input voltage range of DC 15 V to DC 30 V makes the SNE 4003K ideal for one- or two-channel activation by semiconductors.

Function Description

Input voltage to the SNE 4003K is routed via one or two enabling circuits of a basic device. When the input voltage is connected relays K1 and K2 switch to operated condition. After this switch-on phase enabling circuits 13/14, 23/24, 33/34 are closed, and checkback circuit Y1/Y2 and the signalling NC contact 41/42 are open. Display is on two LEDs, K1 and K2, which are assigned to relays K1 and K2. When the enabling circuits of the basic device are opened (when the emergency stop button is operated), relays K1 and K2 on the SNE 4003K switches back to operated condition. The enabling circuits open and the checkback circuit closes. Checkback circuit Y1/Y2 prevents the basic device from switching on again before K1 or K2 releases.

Proper Use

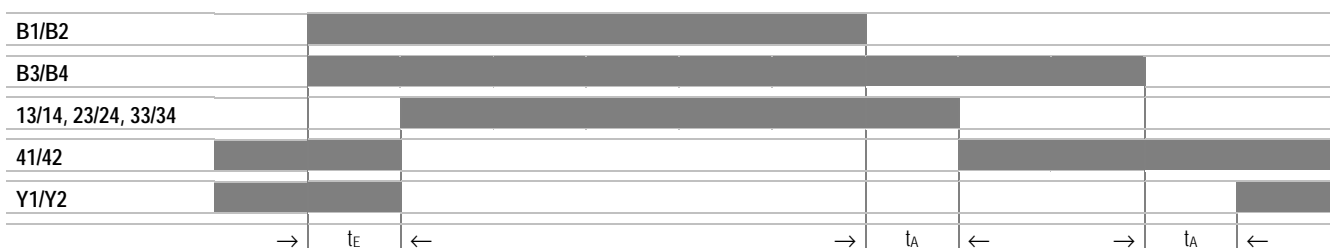
The SNE 4003K can be used as an expansion device for all basic devices that are part of the machine's safety equipment and are used for protecting people, material and machine. The checkback current path Y1/Y2 must be wired to the reset/feedback circuit on the basic device.

Notes

- The stop and safety categories achieved by the SNE 4003K always depends on the categories of the basic device (the category of the expansion device cannot exceed that of the basic device).
- The expansion relays K1 and K2 are controlled via one or two enabling circuits, depending on the required level of safety.
- The device and the contacts must be protected at max. 6 A utilization category gG.

Please observe instructions from safety authorities.

Function Diagram



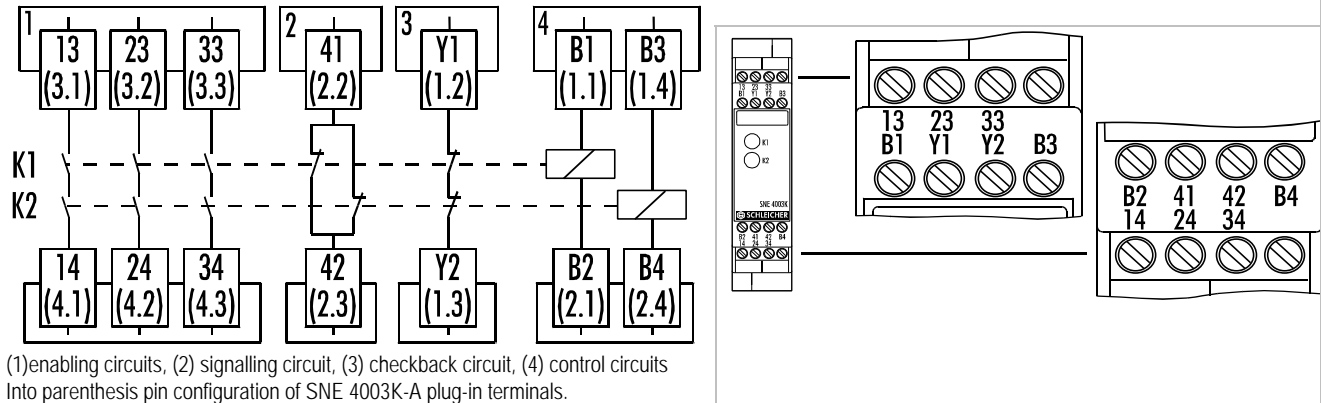


Expansion Device

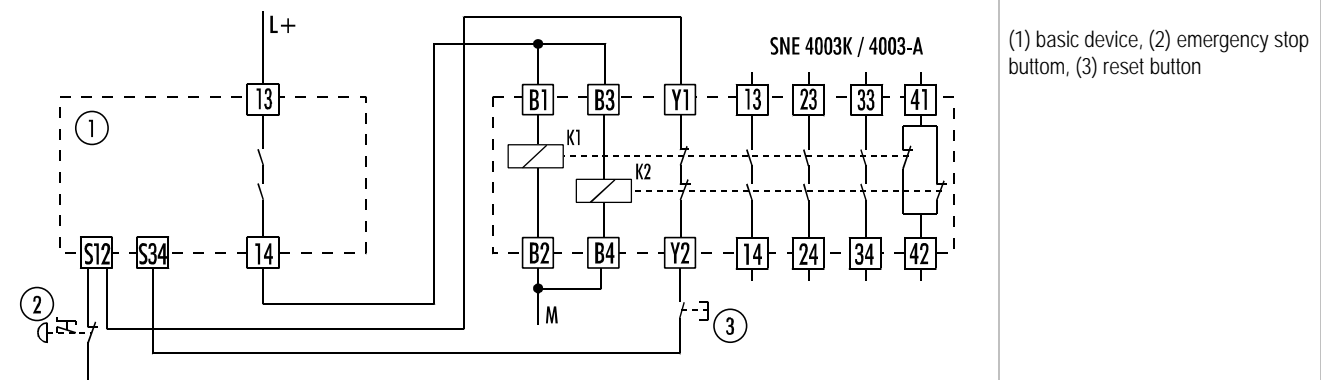
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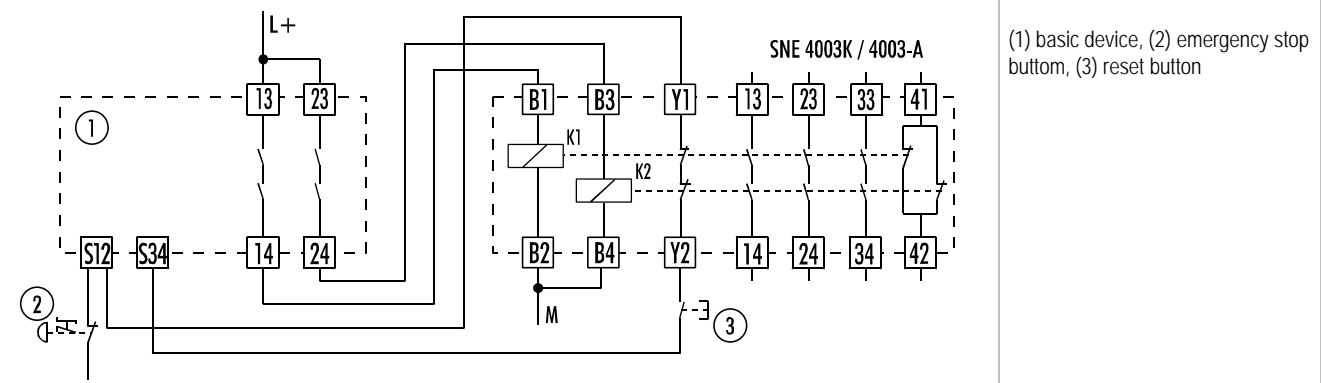
Connection Diagram



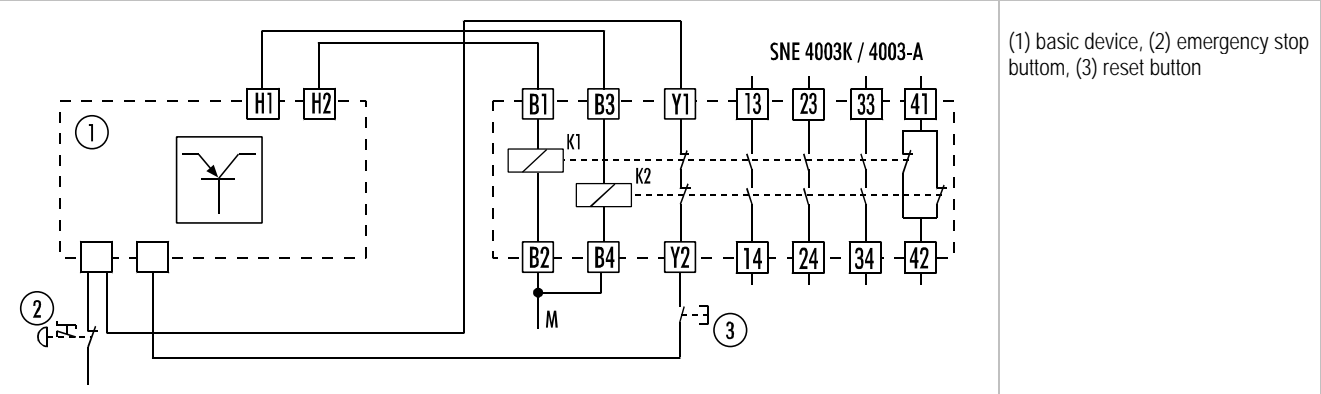
Application example mono channel control



Application example dual channel control



Application example semiconductor control





Expansion Device

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Technical Data

Weight	0.21 kg
Operating ambient temperature	-25 to +55°C
Climatic application class	H V G to DIN 40040: 04.87
Clearance/creepage distance	DIN VDE 0110 Part 1: 04.97
Overvoltage category	IV
Rated impulse withstand level	6 kV
Contamination level	2
Rated voltage	300 V
Power-frequency test voltage	2 kV

Control circuits, B1/B2 and B3/B4

Rated voltage	24 V DC
Input voltage range	DC 15 V to DC 30 V
Rated power	1.2 W
Rated current / max. peak current	50 mA / 500 mA
Make time t _E , K1 and K2	< 40 ms
Operate time t _E , K1 and K2	< 20 ms
Recovery time t _W	≤ 40 ms

Output circuits

Contact type	Positively driven
Contact material	Ag-alloy, gold-plated
Rated switching voltage U _n	AC 240 V / DC 300 V
Utilization category to	AC-15: U _e = 230 V, I _e = 3 A
DIN VDE 0660 Part 200: 07.92	DC-13: U _e = 24 V, I _e = 2.5 A
Mechanical service life	106
Enabling circuits	3 NO contacts
Max. continuous current (I _n)/ total current	6 A / 12 A
Signalling paths	1 NC, serial, 1 NC, parallel
Max. continuous current (I _n)	2 A

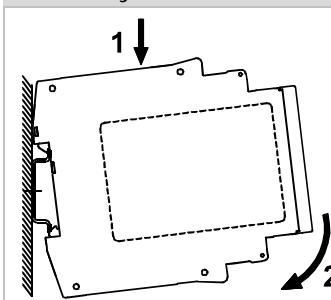
Terminals and connection

Single-core or finely stranded	1 x 0.14 mm ² to 2.5 mm ² 2 x 0.14 mm ² to 0.75 mm ² max. 8 mm
Stripping length	max. 8 mm
Finely stranded with wire-end ferrule to DIN 46228	1 x 0.25 mm ² to 2.5 mm ² 2 x 0.25 mm ² to 0.5 mm ²
Max. tightening torque	0.5 to 0.6 Nm

For UL and CSA approvals

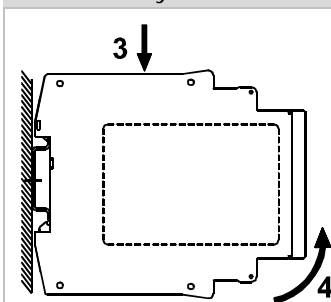
Conductor sizes	AWG 18-16 use only Cu lines
Max. tightening torque	5.25 in-lbs

Assembly



- 1 Attach relay to DIN rail.
- 2 Press the relay carefully onto the DIN rail (in direction of arrow) until it locks into place.

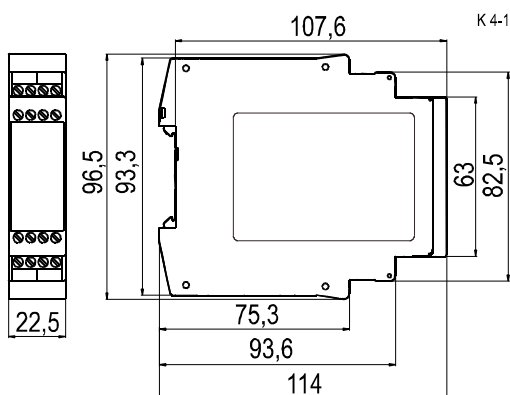
Disassembly



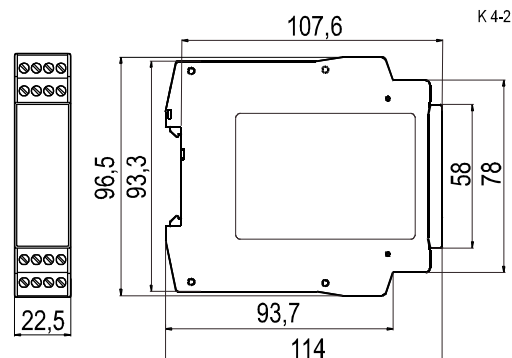
- 3 Push relay down (in direction of arrow)
- 4 Release relay and remove it from the DIN rail (see arrow)

Dimensions

SNE 4003 K



SNE 4003 K-A



Subject to Change
SCHLEICHER Electronic
GmbH & Co. KG
Pichelswerderstraße 3-5
D-13597 Berlin

Ph ++49.30.33005.0
Fx ++49.30.33005.344
Hotline ++49.30.33005.304

www.schleicher-de.com
info@schleicher-de.com