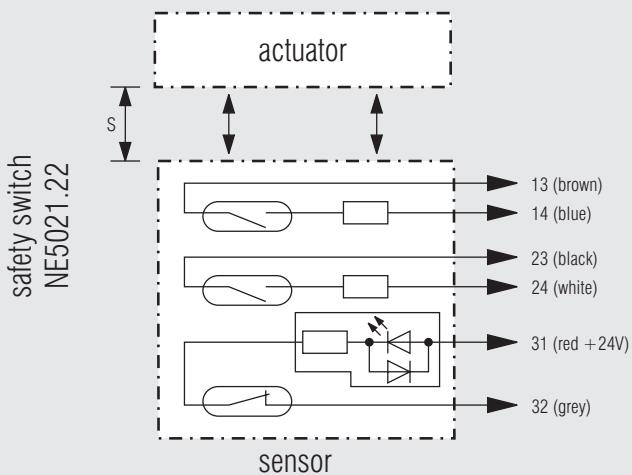
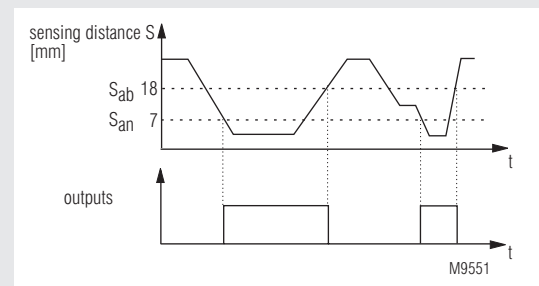
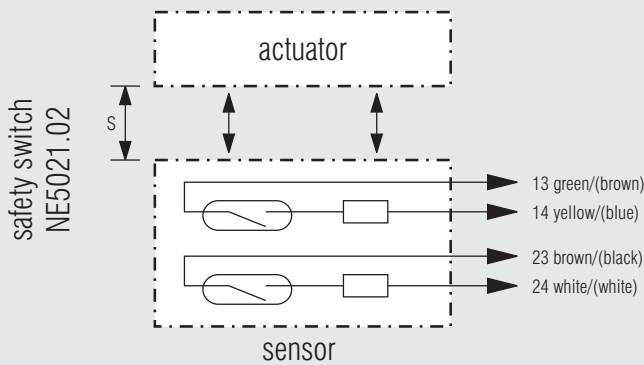


- According to EN 62 061, DIN EN ISO 13 849-1
- According to IEC/EN 60 204-1, IEC/EN 60 947-5-3
- Standard switching distance:  $S_{an} \leq 7 \text{ mm}$   
 $S_{ab} \geq 18 \text{ mm}$
- Up to safety category 4 EN 954-1 depending on external wiring e. g. with BG 5925/920 control module
- Max. number of switches in series:
  - 6 NE 5021 on control unit BG 5925/920
  - 20 NE 5021 on multifunction module BH 5910
- 2 NO contacts or 2 NO contacts / 1 NC contact
- Contacts protected against welding
- Very long service life
- Easy to mount and service
- Manipulation is difficult due to coded sensor
- Protection class IP 67

### Block diagram

### Function diagram



### Additional information to this subject

- data sheet control unit BG 5925/920 for safety switch

### Approvals and marking



### Application

The safety switch NE 5021 is suitable to detect the closed state of safety gates, sliding gates and removable covers also under rough ambient conditions or for special hygienic requirements. The corresponding control unit is BG 5925/920.

- To be used with:
- BG 5925/920 control module, 6 NE 5021 and 1 E-stop button can be connected
  - BH 5910 multifunction module, 2x 10 NE 5021 and 1 E-stop button can be connected
  - BH 5901 gate monitor, 2 NE 5021 can be connected

### Function

The safety switch consists of an transmitter and a receiver. The transmitter is magnetic coded. The contacts of the receiver switch when it detects the coding of the transmitter. Manipulation with a standard magnet will not make the contact switching. The contacts are protected against short circuit currents by series resistors, so they cannot weld.

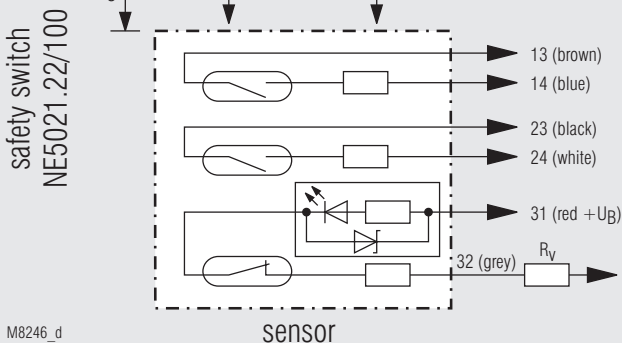
The sensor with 2 NO / 1 NC contacts is available in 2 variants:  
 NE 5021.22 The connector 31 (red) is designed for 24 V DC.  
 NE 5021.22/100 The connector 32 (grey) has to be connected via a series resistor  $R_v$ .  $R_v$  is depending on the connected voltage.  $R_v$  is calculated as follows:

$$R_v = \frac{(U_B - 3,3) V}{I_n}$$

$U_B \text{ max.} = \text{DC } 30 \text{ V}$   
 $I_n \text{ typ.} = 6 \text{ mA}$   
 $I_n \text{ max.} = 10 \text{ mA}$

### Indication

red LED: on, when NC contact not activated at NE 5021.22 and NE 5021.22/100.



M8246\_d

## Connections

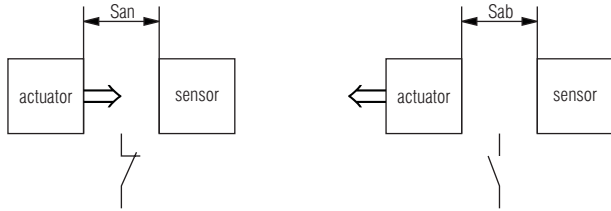
The NE 5021 safety switch has to be connected according to the application examples below.

## Technical Data

### Switching distances

#### Safe switching distances without mounting difference

$S_{an}$ :	$\leq 7$ mm
$S_{ab}$ :	$\geq 18$ mm
undefined situation:	7,1 ... 17,9 mm

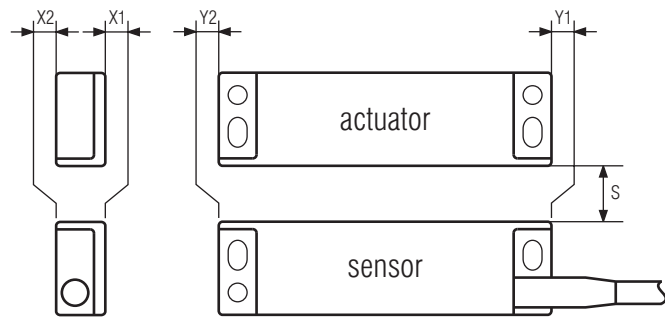


M8351\_a

#### Safe switching distances with mounting difference

The switching distance  $S_{an}$  is valid for mounting method A and B when the switch is mounted on non ferromagnetic material. The min. distance between transmitter and receiver should be 3 mm. The receiver must not be used as mechanical stop for the transmitter.

#### Mounting difference / switching distance $S_{an}$ mounting method A



M8250\_a

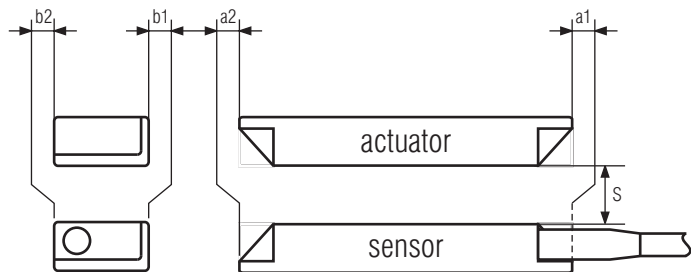
#### NE 5021.22 and /100

Mounting diff.	$S_{an}$
$Y_1 = \text{max. } 7$ mm	$\leq 9$ mm
$Y_2 = \text{max. } 5$ mm	$\leq 6$ mm
$X_1 = \text{max. } 7$ mm	$\leq 6$ mm
$X_2 = \text{max. } 7$ mm	$\leq 6$ mm

#### NE 5021.02

Mounting diff.	$S_{an}$
$Y_1 = \text{max. } 2$ mm	$\leq 9$ mm
$Y_2 = \text{max. } 2$ mm	$\leq 6$ mm
$X_1 = \text{max. } 3$ mm	$\leq 6$ mm
$X_2 = \text{max. } 3$ mm	$\leq 6$ mm

#### Mounting difference / switching distance $S_{an}$ mounting method B



M8249\_a

#### NE 5021.22 and /100

Mounting diff.	$S_{an}$
$Y_1 = \text{max. } 7$ mm	$\leq 9$ mm
$Y_2 = \text{max. } 5$ mm	$\leq 6$ mm
$X_1 = \text{max. } 7$ mm	$\leq 6$ mm
$X_2 = \text{max. } 7$ mm	$\leq 6$ mm

#### NE 5021.02

Mounting diff.	$S_{an}$
$Y_1 = \text{max. } 2$ mm	$\leq 9$ mm
$Y_2 = \text{max. } 2$ mm	$\leq 6$ mm
$X_1 = \text{max. } 3$ mm	$\leq 6$ mm
$X_2 = \text{max. } 3$ mm	$\leq 6$ mm

## Technical Data

### Output

#### Contacts

NE 5021.02:	2 NO contacts
NE 5021.22, NE 5021.22/100:	2 NO / 1 NC contacts
<b>Contact type:</b>	Reed contacts

#### NO contact

Switching voltage:	typ. DC 24 V max. DC 30 V
Switching current:	max. 100 mA
Series resistor for contacts:	10 $\Omega$
Electrical life:	$> 2 \times 10^6$ switching cycles at DC 24 V / 100 mA

#### NC contact

Switching voltage $U_B$ adjusted by $R_V$ and $I_n$ :	$R_V = \frac{(U_B - 3,3) V}{I_n}$
--	-----------------------------------

$U_B$ max:	DC 30 V
$I_n$ typ.:	6 mA
$I_n$ max.:	10 mA

### General Data

<b>Temperature range:</b>	- 25 ... + 75 °C
<b>Shock resistance:</b>	30 g / 11 ms
<b>Vibration resistance:</b>	10 g, 10 ... 150 Hz
<b>Protection class:</b>	IP 67 IEC/EN 60 529
<b>Housing:</b>	Polyamid, glas-fibre reinforced with V0 behaviour according to UL subj. 94
<b>Connection of cable:</b>	0,25 mm <sup>2</sup> with tinned wire ends
<b>Length of cable:</b>	5 m
<b>Mounting:</b>	Screw M4 with plain washer IEC/EN 7092
<b>Weight:</b>	
Transmitter:	45 g
Receiver:	120 g

### Dimensions

#### Width x height x depth:

Transmitter:	88 x 14 x 25 mm
Receiver:	88 x 14 x 25 mm

### Sicherheitstechnische Kenndaten



Safety data for other variants are available on request

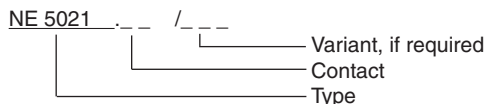
### Standard type

NE 5021.02	
Article number:	0054695 (for Transmitter and Receiver)
• Output:	2 NO contacts
• Connection cable:	5 m

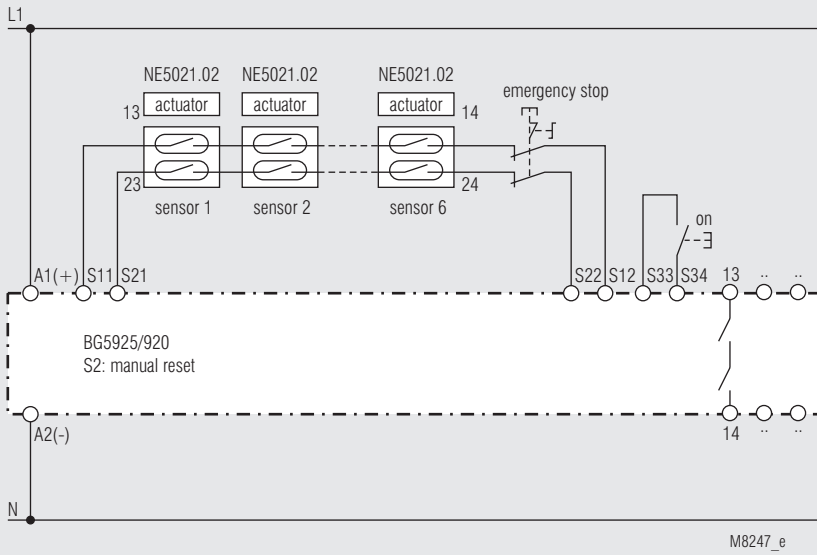
### Variants

NE 5021.02/010:	Length of cable 10 m
NE 5021.22/100:	External series resistor $R_V$ is necessary in series to NC contact

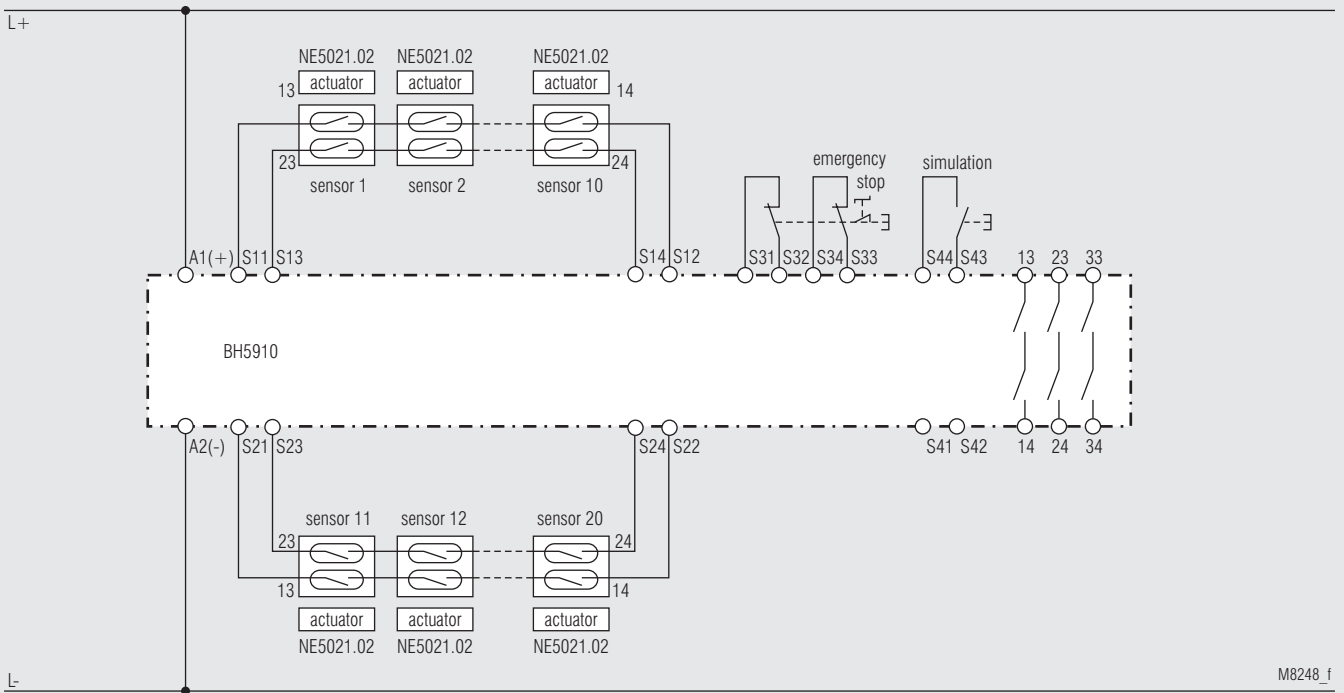
### Ordering example for variants:



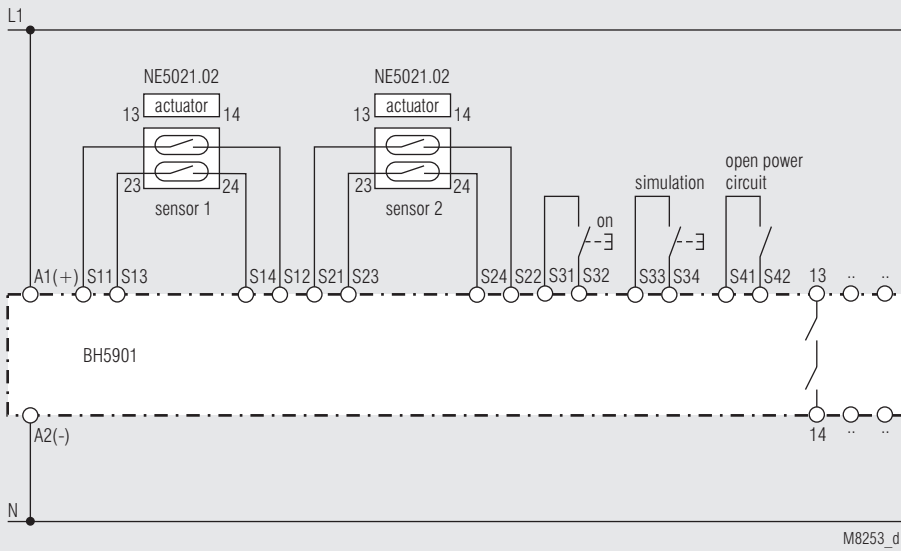
## Connection examples



6 safety switches NE 5021 + 1 E-stop button in series on 1 control unit BG 5925/920, with manual reset, safety category 3.



20 safety switches NE 5021 + 1 E-stop button, 1 simulation button on multifunction safety module BH 5910, safety category 3.



2 safety switches NE 5021 on Gate monitor BH 5901 with manual restart and simulation button according to EN 201. Safety category 3. The sensors are shown in non active state.

Dimensions

