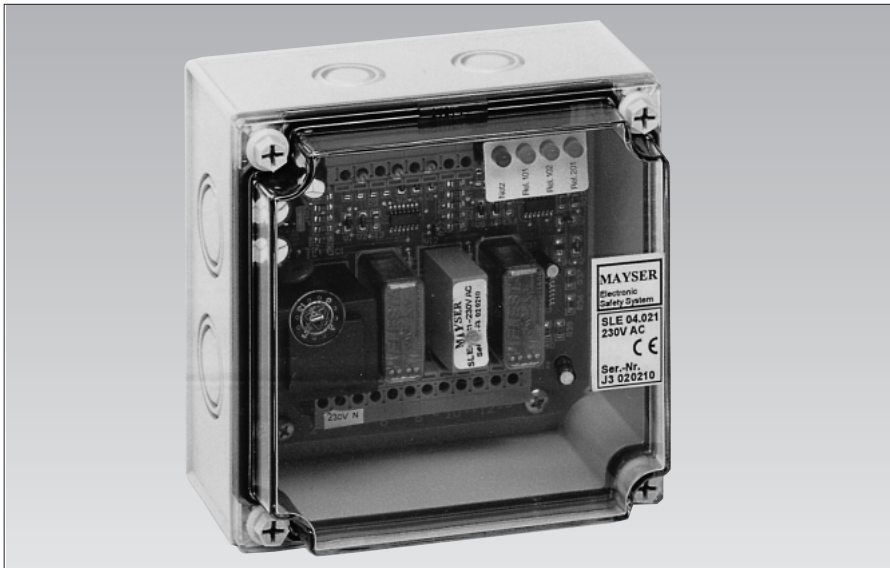


Safety Control Unit SG-SLE04-0X1

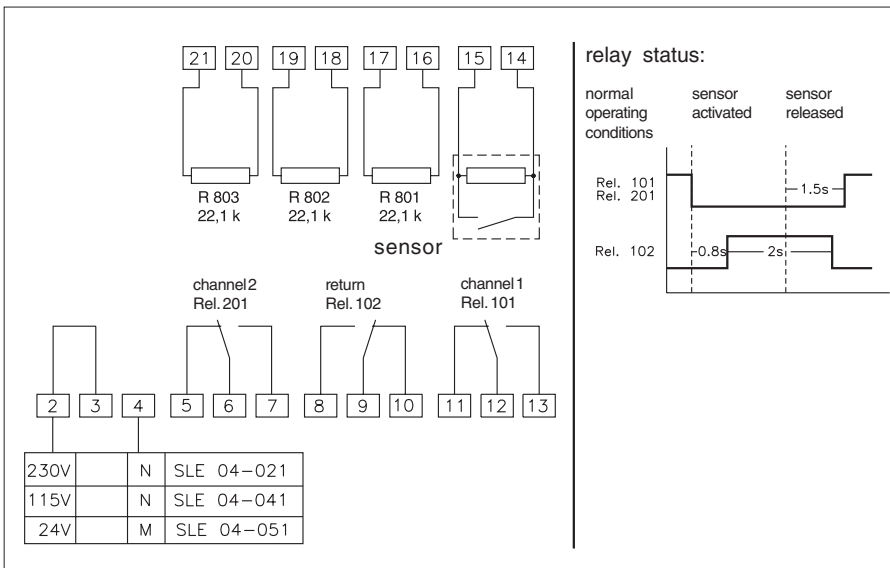
Operating Instructions



Safety Control Unit
with EEC-type-examination certificate
Category 3 per EN 954-1
for sensors with
22,1 kΩ monitoring resistor

These operating instructions apply to the following control units:

- PCB in plastic enclosure
 - SG-SLE 04-051 24 V=
 - SG-SLE 04-041 115 V~
 - SG-SLE 04-021 230 V~
- PCB without plastic enclosure
 - SG-SLE 14-051 24 V=
 - SG-SLE 14-041 115 V~
 - SG-SLE 14-021 230 V~



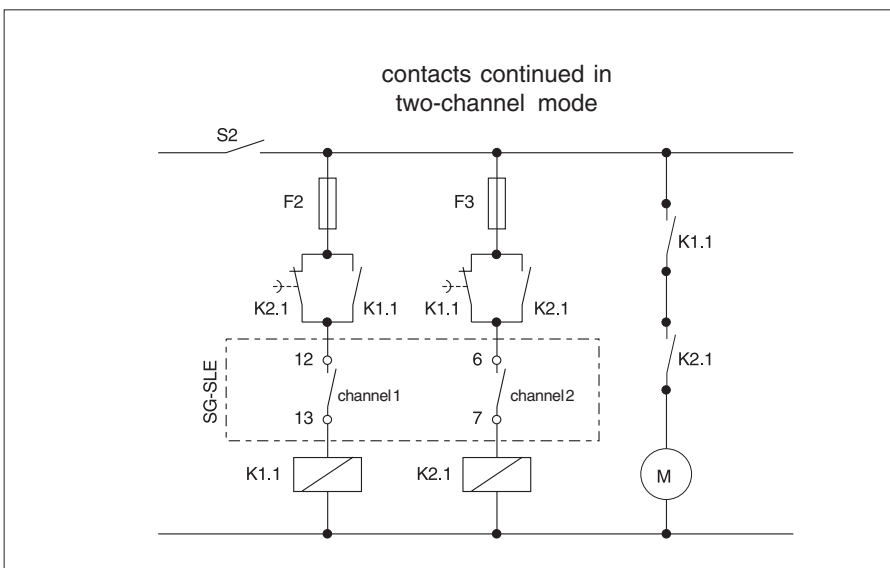
Control System

The single-fault-safe electronics module has two channels (redundant). Each channel triggers a relay with force-guided contacts.

If a fault occurs in the system or if the sensor is activated, relays 101 and 201 deenergize. They remain deenergized until the sensor is released and a delay period of approx. 1,5 sec has lapsed.

Delay

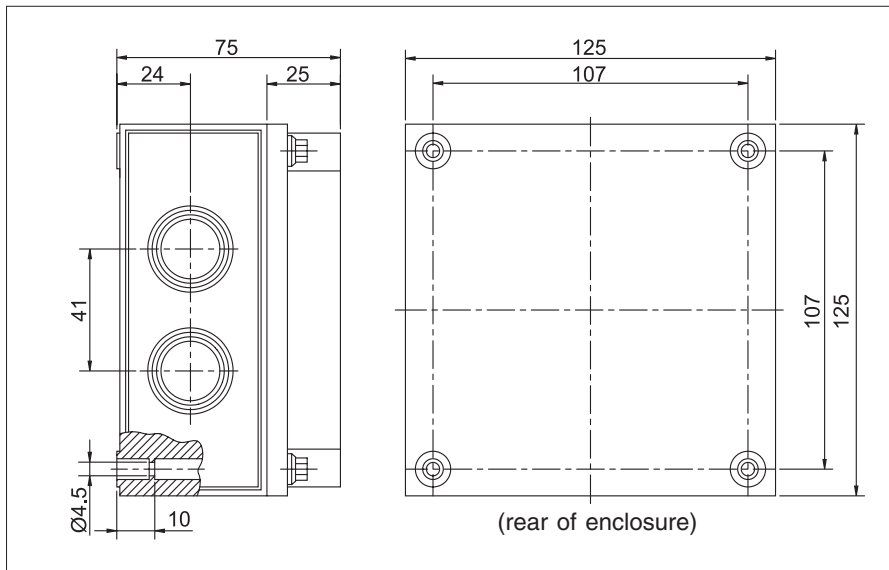
Approx. 0,8 sec after relays 101 and 201 deenergize, the return relay 102 energizes for approx. 2 sec.



Important notes:

- **Supply voltage**
must be in accordance with the connecting voltage U_s indicated on the type plate.
- **Permissible temperature range**
maintain sufficient distance from heat sources if installing into a cabinet (min. 2 cm).
- **Wiring**
wire direct to control circuit or continue two-channel mode to next circuit. Fuse relay contacts externally (risk of welding).

Safety Control Unit SG-SLE 04-0X1

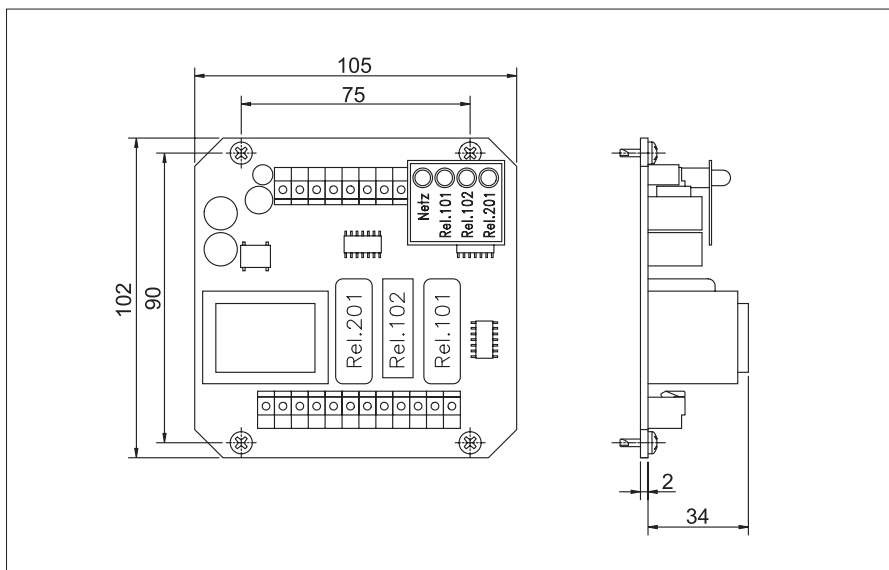


SG-SLE 04-0X1 (Enclosure)

Dimensions

Cable passage by means of cable connectors or twist clamp PG16.

W x H x D (mm)	125 x 125 x 75
Protection	IP 65
Cable clamps	max. 1,5 mm ²
Weight	approx. 600 g



SG-SLE 14-0X1 (PCB)

Dimensions

W x H x D (mm)	107 x 102 x 36
Protection	IP 00
Cable clamps	max. 1,5 mm ²
Weight	approx. 400 g

Technical Data

Connecting voltage U_s

SG-SLE 04/14-051	DC 24 V
SG-SLE 04/14-041	AC 115 V
SG-SLE 04/14-021	AC 230 V
Voltage tolerance	-15% to +10%
Frequency tolerance	48 - 62 Hz
Power consumption	< 5 VA for AC < 3 W for DC

Sensor Voltage

Protective low voltage	yes	no
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Relay Data (Rel. 101 + 201)

Switching voltage	max. AC 250 V	max. DC 24 V
Switching current	max. 3 A	max. 1 A
Breaking capacity	max. 750 VA	

Relay Data (Rel. 102)

Switching voltage	max. AC 250 V	max. DC 24 V
Switching current	max. 3 A	max. 1 A
Breaking capacity	max. 500 VA	
Permissible ambient temp.	- 20 °C to + 55 °C	

4 Inputs

The SG-SLE control unit has 4 sensor inputs.

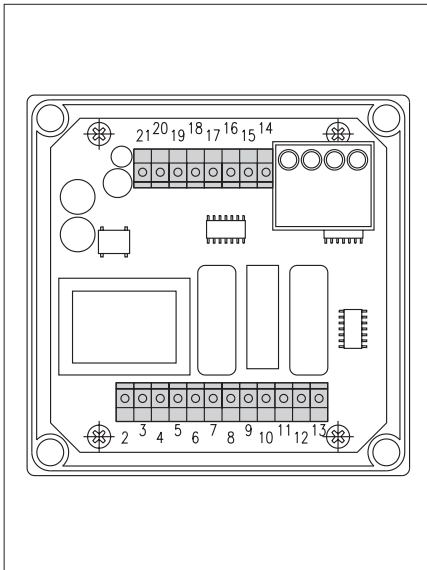
Single end sensors or a corresponding combination of end and through sensors can be connected here.

Bridge unused sensor connections with 22,1 kΩ resistor.

Note

When switching inductive loads the user must be fitted out with spark absorbers.

Installation and Operation



Installation

The safety control unit in the enclosure for wall mounting can be mounted with M4 screws in any position. The PCB model is suitable for installing into existing switch boards. Note protection class!

Connections:	Clamps:
Mains voltage	2, 4
Relay 201 (2nd circuit)	5, 6, 7
Relay 102 (return)	8, 9, 10
Relay 101 (1st circuit)	11, 12, 13
Sensor 1	14, 15
Sensor 2	16, 17
Sensor 3	18, 19
Sensor 4	20, 21

(see also page 1: second illustration)

Commissioning

After connecting sensors, relay contacts and mains, carry out a function test in the following order:

Sensor not activated

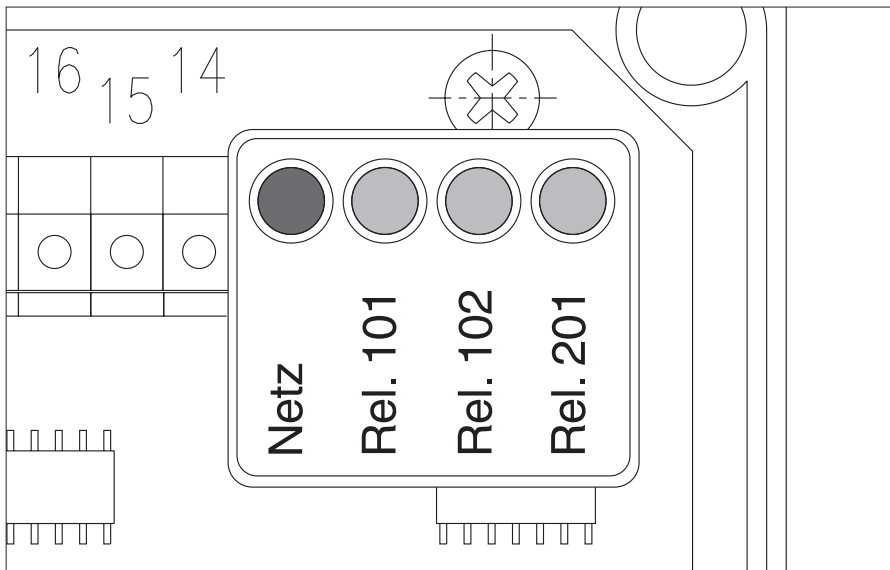
- green LED "Netz" (power) lights
- yellow LEDs "Rel. 101" and "Rel. 201" light

Sensor constantly activated

- yellow LEDs "Rel. 101" and "Rel. 201" go out
- after approx. 1 sec yellow LED "Rel. 102" lights up
- after approx. further 2 sec yellow LED "Rel. 102" goes out

Release sensor

- after approx. 1.5 sec yellow LEDs "Rel. 101" and "Rel. 201" light up



LEDs information

The LEDs on the circuit board supply information on the current switching state:

- green LED "Netz"(power) ready for operation
- yellow LED "Rel. 101" Relay 101 (1st circuit) is energized
- yellow LED "Rel. 102" Relay 102 (return) is energized
- yellow LED "Rel. 201" Relay 201 (2nd circuit) is energized

Troubleshooting and remedies

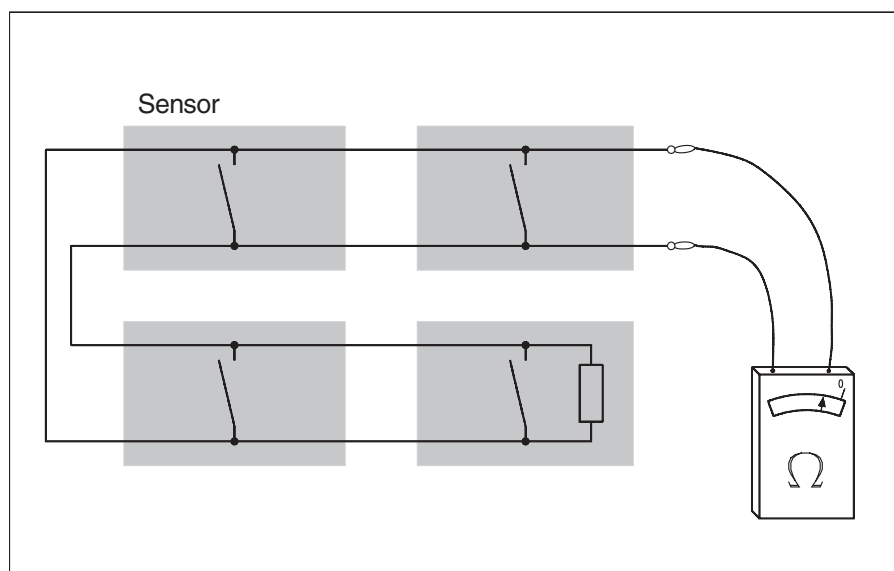
Prerequisite: SG-SLE with connected sensor and mains supply.

- green LED does not light
 - > Supply voltage off or incorrect
 - ☞ Check supply voltage, compare with type plate.
- yellow LEDs "Rel.101" and "Rel. 201" do not light
 - > Faulty sensor or supply lines (break in connection or short circuit)
 - ☞ Connect 22,1 kΩ resistor instead of sensor.
 - If the yellow LEDs do not light, the control unit is faulty.
- yellow LED "Rel. 102" lights constantly
 - > Control unit is faulty.
- only one yellow LED ("Rel. 101" or "Rel. 201") lights
 - > Relais 201 or 101 faulty
 - Control unit is faulty.

Maintenance

The control unit is maintenance free. Check the safety installation on a monthly basis by activating the sensors.

Check sensor

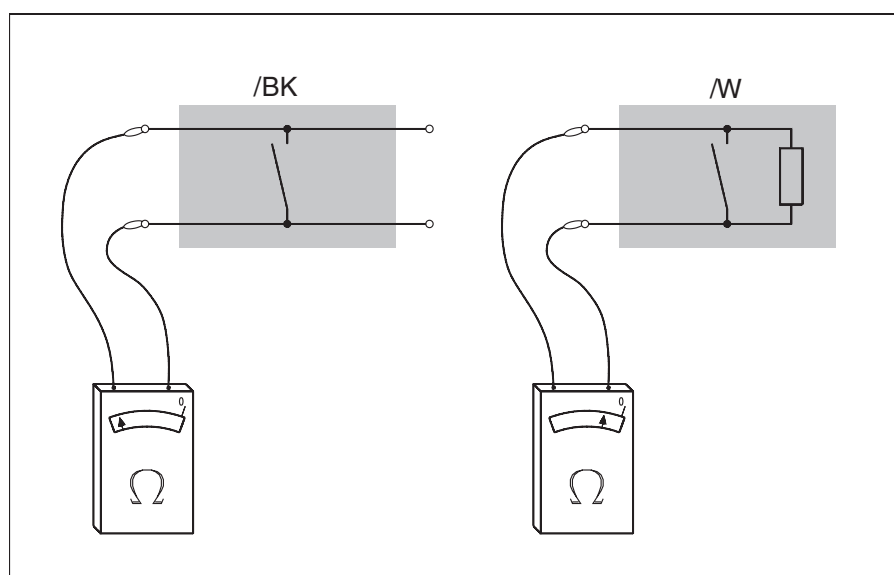


Check combination of sensors

Resistance measurement:
Disconnect power to the unit.
Remove sensor connection and
measure with an ohmmeter:

not activated	c. 22,1 k Ω
activated	< 150 Ω

If the readings taken deviate considerably from the set values, the sensors have to be checked individually (see below).



Check individual sensors

Resistance measurement:
Measure each individual sensor with
an ohmmeter:

/BK	not activated	infinite Ω
	activated	< 150 Ω
/W	not activated	c. 22,1 k Ω
	activated	< 150 Ω

Check also cable and cable connections.

Damaged or faulty sensors must be repaired or replaced immediately by a specialist. Only a functioning system can ensure maximum safety!