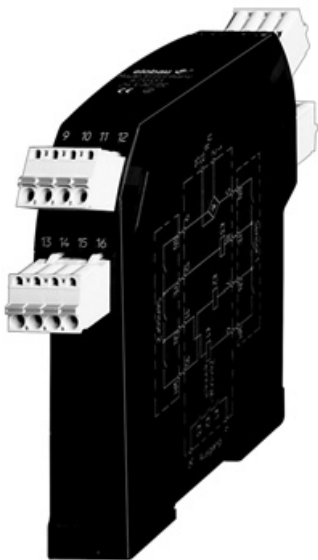
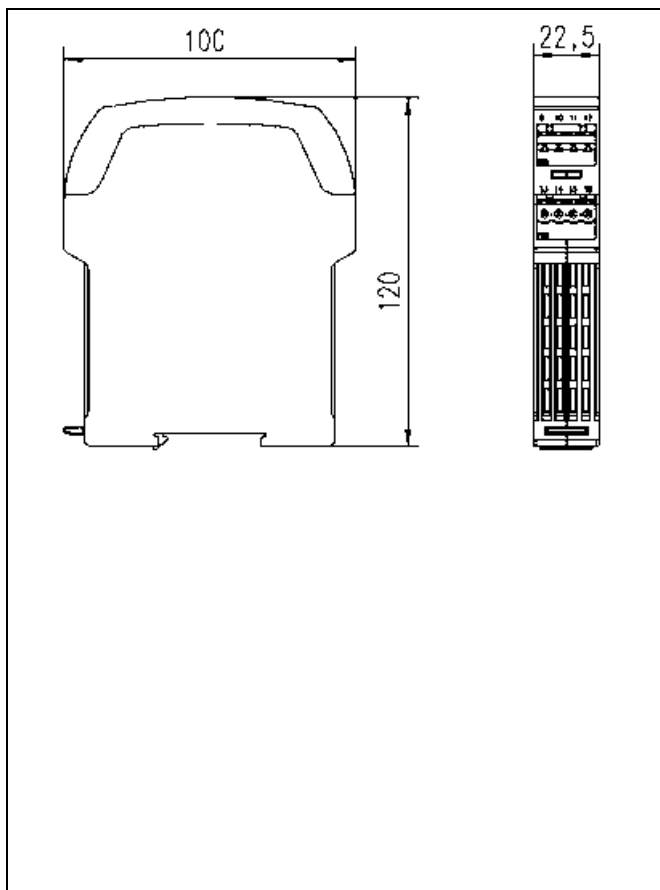


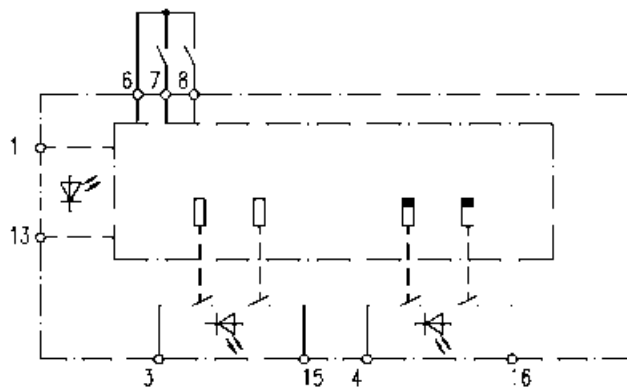
470 111 E3 U



- D Betriebsanleitung
Auswerteeinheit**
- GB Operating instructions
Control unit**
- F Notice d'utilisation
Unité de contrôle**
- I Istruzioni d'impiego
Unità di controllo**



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1 Technical data

1.1 Terminal assignment

The control unit possesses a sensor input. When connecting several sensors (up to 8 sensors) elobau recommends the interfaces 363 V98 or 364 097.

Terminal	Assignment
1, 2	Operating voltage, +U _B
13, 14	Operating voltage, GND
3, 15	Potential-free safety output 1
4, 16	Potential-free safety output 2
6	Sensor, common connection
7	Sensor, closer 1
8	Sensor, closer 2
11, 12	GND internal
5, 9, 10	Not assigned

1.2 Type denomination/Variants

The following example and table are given to explain the type denomination of the control units.

Example:

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4ab cde fg h

Placeholder	Characteristic		Meaning
4ab	Housing type and housing width	470	Housing width 22.5 mm
c	Number of devices in the housing	1	1 device in the housing
d	Specification safety input	1	Control unit for 2 closer sensors
e	Operating voltage	1	24 V DC

Placeholder	Characteristic		Meaning
f	Classification	E	Category 3 according to EN 954-1
g	Equipment	3	Turn-off delay and LED
h	Other	U	No period of rest

1.3 Electrical and mechanical data

The control unit in a deenergized state is depicted on the circuit diagram of the fold-out page.

General

Operating voltage fuse	1.0 A, medium slow-action
Safety outputs, max. switching voltage	250 V AC / 30 V DC
Safety outputs, turn-off delay	Safety output 1: 0 s Safety output 2: 1.5 ± 0.3 s
Operating temperature	0 ... +55 °C
Transport and storage temperature	-25 ... +80 °C
Vibration and shock resistance	Vibration: 10 ... 55 Hz, 1 mm Shock: 30 g / 11 ms Continuous shock: 10 g / 16 ms
International protection - housing	IP 30
International protection - terminals	IP 20

Operating voltage

Type	Operating voltage
470 111 E3 U	24 V DC ± 10 %

Power consumption

Type	Power consumption
470 111 E3 U	190 mA

Safety output

Type	Fuse	Max. switching current	Max. switching capacity
470 111 E3 U	3.0 A medium slow-action	3.0 A	750 VA / 90 W

LED displays

LED labelling	Color	Meaning
U_B	Green	Operating voltage is applied
Output 1	Green	Safety output 1 is connected through
Output 2	Green	Safety output 2 is connected through

2 Appropriate use

The control unit is designed for the monitoring of protective doors.

The device may be installed to help protect against danger; the machines' safety requirements are to be observed when you do so.

2.1 Norms and guidelines

The control unit is constructed in accordance with the following European guidelines:

- 73/23/EEC (low voltage guideline)
- 2004/108/EC (electromagnetic compatibility guideline)
- 98/37/EC (machinery guideline)

The construction of the control unit conforms to the norms listed below.

Norm	Content
EN 947-5-2	Controlling devices and switching elements - proximity switches
EN 947-5-3	Requirements for proximity switches with defined behaviour when errors arise
EN 954-1 / category 3	Safety-related parts of control systems
EN 55011	Suppression of radio interference from electrical equipment
EN 60068-2	Environmental testing: vibration and shock
EN 60204-1	Electrical equipment of industrial machines
EN 61000-6-2	Electromagnetic compatibility, interference immunity for the industrial sector

2.2 Safety/Dangers

- Ensure that the control unit is only installed and put into operation by specially-trained authorised personnel.
- Ensure that the appropriate corresponding fuses (see Technical data) are used. Never bridge or repair fuses.
- Only operate the control unit when it's in an undamaged condition.
- Ensure that the control unit is only used for protection against dangers.
- Ensure that all safety requirements applying for the machine in question are observed.
- Ensure that all European guidelines and national laws/guidelines applying are observed.

3 How the control unit works

The control unit monitors a connected sensor which is equipped with two closers. The safety outputs are enabled when both the sensor's closers are closed.

The control unit possesses a safety output with turn-off delay and as well a safety output without turn-off delay.

The control unit switches the safety outputs off in the following situations:

- At least one of the connected sensor's closers is open.
- The operating voltage of the control unit is no longer applied.
- A fault has occurred (in the control unit or the connected sensor).

4 Installation



► **Danger of electrocution!**

Ensure that the control unit is only installed and put into operation by specially-trained authorised personnel.

Danger

- Snap the control unit onto a mounting rail (DIN 50 022) in the switch cabinet. The control unit is attached.
- Connect control unit, see Technical data.
- Ensure that the prescribed fuses are used, see Technical data.

5 Putting into operation



► **Danger of electrocution!**

Ensure that the control unit is only installed and put into operation by specially-trained authorised personnel.

Danger

- Ensure that the sensor is connected to the control unit.
- Apply operating voltage.

The control unit is ready for operation.

6 Troubleshooting

6.1 Restoring device to a state of readiness for operation

If the safety outputs have been switched off by **one** opened closer of the connected sensor, both the sensor's closers must be opened before putting the control unit back into operation.

Then the control unit is ready for operation again.

6.2 Safety outputs remain switched off

- Check connections at inputs and outputs:
 - Operating voltage
 - Connected sensor
- Connections at inputs and outputs are OK:
 - Replace control unit.

7 Maintenance

The control unit is maintenance-free.

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