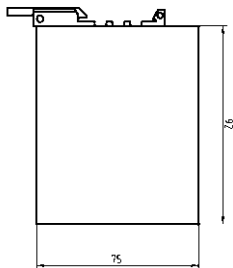
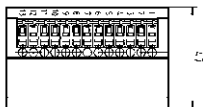


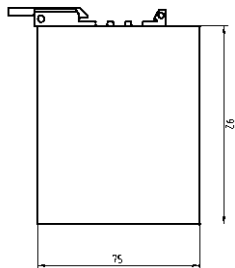
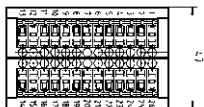
462 141 E1  
462 141 H1  
462 144 E1  
462 144 E101  
462 151 E1  
462 151 H1

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

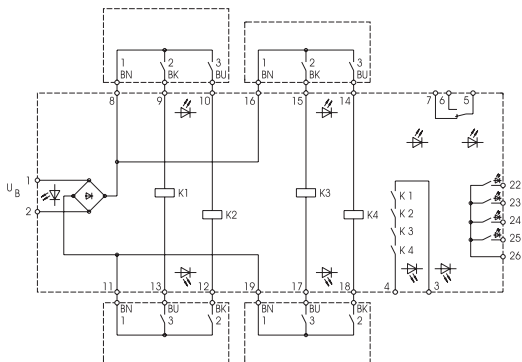
462 141 E1, 462 144 E1,  
462 144 E101



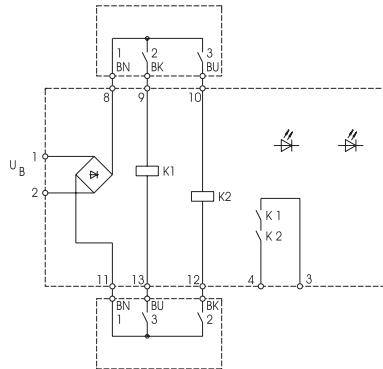
462 141 H1, 462 151 H1,  
462 151 E1



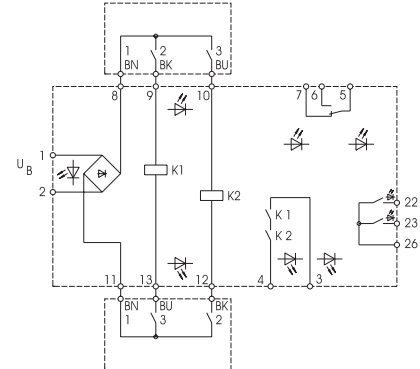
462 151 H1



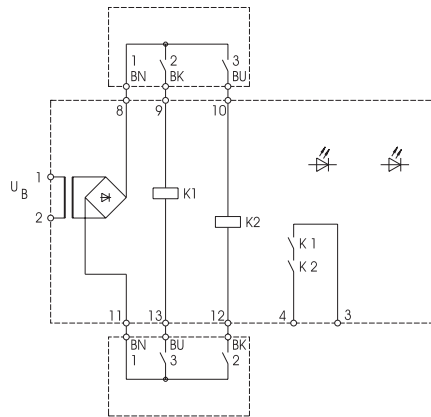
462 141 E1



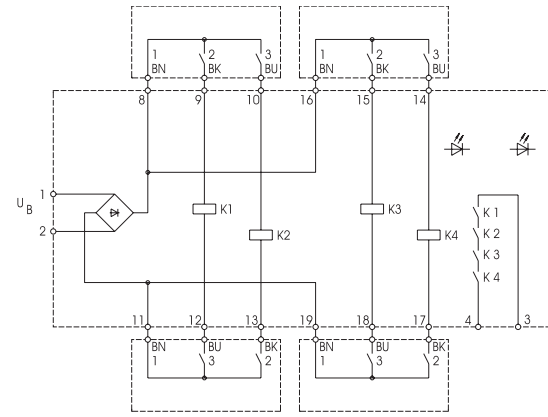
462 141 H1



462 144 E1, 462 144 E101



462 151 E1



# 1 Technical data

## 1.1 Terminal assignment

### Models 462 141 E1, 462 144 E1, 462 141 H1, 462 144 E101

Up to 2 sensors can be connected directly to the control unit.

- Only use in conjunction with elobau sensors with a 6 as the 5th digit and a 2 as the 6th digit (e.g. 171 262).

### Models 462 151 H1, 462 151 E1

Up to 4 sensors can be connected directly to the control unit.

- Only use in conjunction with elobau sensors with a 6 as the 5th digit and a 2 as the 6th digit (e.g. 171 262).

### General

Terminal	Assignment
1, 2	Operating voltage
3, 4	Safety output, contact maker, floating
8, 9, 10	Input sensor 1, contact maker (to be bridged, if not needed)
11, 12, 13	Input sensor 2, contact maker (to be bridged, if not needed)

### Models 462 141 H1, 462 151 H1

Terminal	Assignment
22	Output 2, sensor 1
23	Output 3, sensor 2
26	Common terminal for outputs 2 ... 5, floating

**Models 462 151 E1, 462 151 H1**

Terminal	Assignment
14, 15, 16	Input sensor 3, contact maker (to be bridged, if not needed)
17, 18, 19	Input sensor 4, contact maker (to be bridged, if not needed)

**Model 462 151 H1**

Terminal	Assignment
24	Output 4, sensor 3
25	Output 5, sensor 4

**Models 462 141 H1, 462 151 H1**

Terminal	Assignment
5, 6, 7	Output 6 for fault indication

## 1.2 Type denomination/Variants

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

Example:

462 141 E1 01

4ab cde fg hi

Placeholder	Characteristic		Meaning
4ab	Housing type and housing width	462	Housing width 47 mm
cd	Number of sensor outputs	14	2
		15	4
e	Operating voltage	1	24 V
		4	230 V

Placeholder	Characteristic		Meaning
f	Other	E	Category 3 according to EN 954-1
		H	Category 4 according to EN 954-1
g	Other	1	Insignificant
h	Other	0	Customer-specific
i	Other	1	Customer-specific

### 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 temperature	0 ... +55 °C
Transport and storage temperature	-25 ... +85 °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 20
International protection - terminals	IP 20

#### Models

##### Operating voltage

Type	Operating voltage
462 141 E1 462 141 H1 462 151 E1 462 151 H1	24 V AC/DC $\pm$ 10 %
462 144 E1	230 V AC $\pm$ 10 %
462 144 E101	230 V AC $\pm$ 10 %

### Power consumption

Type	Power consumption
462 141 E1 462 151 E1	150 mA
462 141 H1	200 mA
462 144 E1 462 144 E101	20 mA
462 151 H1	300 mA

### Operating voltage fuse

Type	Fuse
462 141 E1 462 141 H1 462 151 H1	1 A

### Fuse for safety output 1

Type	Fuse
462 141 E1 462 144 E1 462 144 E101 462 151 E1	3 A
462 141 H1 462 151 H1	4 A

### Fuse for outputs 2 ... 6

Type	Fuse
462 141 H1 462 151 H1	1 A

**Maximum switching voltage output 1**

Type	Switching voltage
462 141 E1 462 141 H1 462 151 H1 462 151 E1 462 144 E1 462 144 E101	250 V AC; 30 V DC

**Maximum switching current output 1**

Type	Switching current
462 141 E1 462 144 E1 462 144 E101 462 151 E1	3 A
462 141 H1 462 151 H1	4 A

**Maximum switching power output 1**

Type	Switching power
462 141 E1 462 144 E1 462 144 E101 462 151 E1	750 VA or 90 W
462 141 H1 462 151 H1	1000 VA or 120 W

**Maximum switching voltage outputs 2 ... 6**

Type	Switching voltage
462 141 H1 462 151 H1	30 V AC/DC

## Maximum switching current outputs 2 ... 6

Type	Switching current
462 141 H1 462 151 H1	1 A

## Maximum switching power outputs 2 ... 6

Type	Switching power
462 141 H1 462 151 H1	30 VA or 30 W

## Cooling-off period

The cooling-off period is the maximum time during which the 2 sensor contacts can be in different states before the control unit locks out.

Type	Cooling-off period
462 141 E1 462 141 H1 462 144 E1 462 144 E101 462 151 E1 462 151 H1	3 s

## LED displays

### General

LED at terminal	Color	Meaning when LED is lit
6	Red	Fault detected, channel 1
7	Red	Fault detected, channel 2

**Models 462 141 H1, 462 151 H1**

LED at terminal	Color	Meaning when LED is lit
2	Green	Operating voltage is applied
3	Green	Safety output switched through
4	Red	No safety output
9	Green	Sensor 1 energised
12	Green	Sensor 2 energised
22	Green	Output 2 switched through
23	Green	Output 3 switched through

**Model 462 151 H1**

LED at terminal	Color	Meaning when LED is lit
15	Green	Sensor 3 energised
18	Green	Sensor 4 energised
24	Green	Output 4 switched through
25	Green	Output 5 switched through

## 2 Appropriate use

The control unit is intended for use exclusively to protect against hazards.

### 2.1 Norms and guidelines

The control unit complies with the following European guidelines:

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

The control unit underwent an EU prototype test at TÜV/IQSE in Munich, Germany.

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

**General**

Norm	Content
EN 292	Safety of machines, basic concepts
EN 1088	Interlocking devices with and without bolts
EN 60 204	Electrical equipment of industrial machines
VDE 0110, IEC 1010	Electrical safety
IEC 68, part 2	Effects of ambient influences
EN 61000-6-2	Electromagnetic compatibility, interference immunity for the industrial sector
EN 55 011	Suppression of radio interference from electrical equipment
IEC 801	Electromagnetic compatibility

**Models 462 141 E1, 462 144 E1, 462 144 E101, 462 151 E1**

Norm	Content
EN 954-1/category 3	Safety of machines

**Models 462 141 H1, 462 151 H1**

Norm	Content
EN 954-1/category 4	Safety of machines

**2.2 Licensed according to UL/CSA**

The following models are licensed according to ANSI/UL 508 and CAN/CSA C22.2#14:

Environmental Type 1, Type of ESPE Type 2

- 462 141 E1
- 462 141 H1
- 462 151 E1
- 462 151 H1

Cable cross section: 0.08 ... 2.5 mm<sup>2</sup> (USA: 26 ... 14 AWG)

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## 2.3 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 Function

The control unit monitors connected sensors which are equipped with two contact makers. Each sensor controls two relays, which are continuously monitored to ensure they are always in the same switched state. The control unit safety output will be open or closed according to the position of the connected sensors.

**The control unit switches off the safety output in the following situations:**

- The contact maker of a connected sensor is opened.
- A fault has been detected (control unit or connected sensor is defective).

## 4 Installation



**Danger**

▶ **Danger of electrocution!**

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

- 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**

▶ **Danger of electrocution!**

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

- Ensure that all contacts at the sensor contact maker terminals are closed.
- Apply operating voltage.

The control unit closes the safety output.

The control unit is ready for operation.

## 6 Troubleshooting

### 6.1 Restoring device to a state of readiness for operation

If there is a fault and one or more of the red LEDs does not light up:

- Replace control unit.

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## Sensor contacts open

If the safety output opens because a open sensor contact maker is open:

- Close the contact at the same sensor's contact maker input.

The control unit closes the safety output.

The control unit is ready for operation.

## Contacts in different switched states

Should the contacts of one sensor not be in the same switched state for a period exceeding 3 seconds the safety output will open:

- Close both contacts on the affected sensor.
- Switch off operating voltage.

The fault detection LEDs will switch off.

- Apply operating voltage.

The control unit closes the safety output.

The control unit is ready for operation.

## 6.2 Safety output remains switched off

- Check connections at inputs and outputs:
  - Operating voltage
  - All sensors and relays connected
- Connections at inputs and outputs are OK:
  - Replace control unit.

# 7 Maintenance

## 7.1 Measures

The control unit is maintenance-free.

## 7.2 Disposal

Dispose of used parts and unwanted packaging in accordance with the regulations of the country in which the device is installed.

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