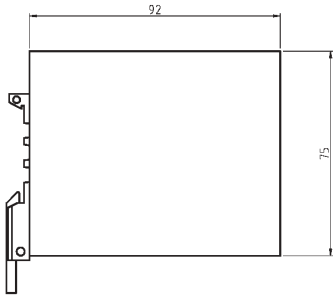
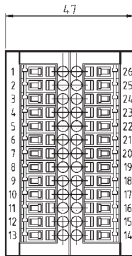




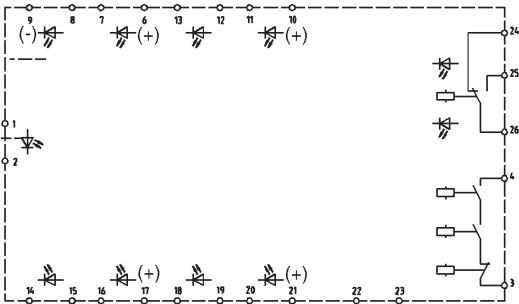
462 121 E1
462 121 E1 01
462 121 E1 U
462 121 E1 U1
462 124 E1
462 124 E1 U
462 124 E1 01
462 124 E1 10
462 124 E1 U1

- (D)** Betriebsanleitung
MSS-Zentraleinheit
- (GB)** Operating instructions
MSS central processing unit
- (F)** Notice d'utilisation
Unité centrale MSS
- (I)** Istruzioni d'impiego
Centralina MSS

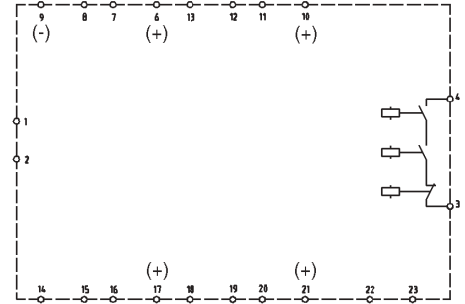


Datum: 10.08.2004

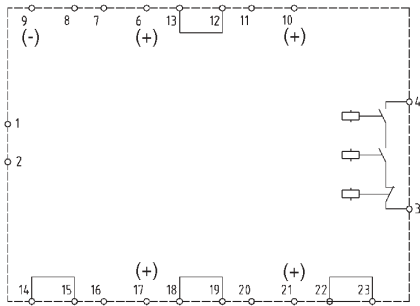
**462 121 E1 01, 462 121 E1 U1,
462 124 E1 01, 462 121 E1 U**



**462 121 E1, 462 121 E1 U, 462 124 E1,
462 124 E1 U**



462 124 E1 10



1 Technical specifications

1.1 Terminal assignment

General

<i>Terminal</i>	<i>Assignment</i>
1, 2	Supply voltage
3, 4	Safety output, potential free
5	Unused
6, 7	Sensor 1, normally closed contact
8, 9	Sensor 1, normally open contact (to be bridged if not needed)

Models 462 121 E1, 462 121 E1 U, 462 124 E1, 462 124 E1 U

<i>Terminal</i>	<i>Assignment</i>
10, 11	Sensor 2, normally closed contact
12, 13	Sensor 2, normally open contact (link out if not required)
14, 15	Sensor 3, normally open contact (link out if not required)
16, 17	Sensor 3, normally closed contact
18, 19	Sensor 4, normally open contact (link out if not required)
20, 21	Sensor 4, normally closed contact
22, 23	External contactor (link out if not required)
24, 25, 26	Not used

Model 462 124 E1 10

<i>Terminal</i>	<i>Assignment</i>
10 ... 23	Do not connect to these terminals
24, 25, 26	Not used

Models 462 121 E1 01, 462 121 E1 U1, 462 124 E1 01, 462 124 E1 U1

<i>Terminal</i>	<i>Assignment</i>
10, 11	Sensor 2, normally closed contact
12, 13	Sensor 2, normally open contact (link out if not required)
14, 15	Sensor 3, normally open contact (link out if not required)
16, 17	Sensor 3, normally closed contact
18, 19	Sensor 4, normally open contact (link out if not required)
20, 21	Sensor 4, normally closed contact
22, 23	External contactor (link out if not required)
24	Control output break contact, potential free
25	Control output make contact, potential free
26	Control output common, potential free

1.2 Model Numbering System

The following example and table demonstrates the numbering system used for the elobau machine safety central processing units:

➔ Example:

➔ 462 121 E1 U1

➔ 4ab cde fg hi

<i>Notation</i>	<i>Reference</i>		<i>Meaning</i>
4ab	Housing type and width	462	Housing width 47 mm
		463	Housing width 25 mm
cd	Sensor Contact Form required	12	Requires 1 x N/O and 1 x N/C contact
e	Supply voltage	1	24 V AC/DC $\pm 10\%$ FELF (one side must be earthed)
		4	230 V AC $\pm 10\%$
f	Other	E	Protection class 3 to EN 954-1
g	Other	1	Has no significance

<i>Notation</i>	<i>Reference</i>		<i>Meaning</i>
h	Other	0	Has no significance
		1	Customer-specific. N/O contact terminals, 10-23, internally
		U	Unlimited time between N/O contact and N/C contact opening
i		0	Has no significance
		1	Unit has additional control output and has LEDs for diagnostic purposes

1.3 Electrical and mechanical specifications

In the circuit diagram shown on the foldout, the control unit is shown without voltage applied.

Supply voltage fuse	1.0 A
Safety output fuse	3.0 A
Safety output, max. switching voltage	250 V AC; 30 V DC
Safety output, max. switching current	5 A / 3 A
Safety output, max. switching power	750 VA or 90 W
Operating temperature	0 °C... +55 °C
Transport and storage temperature	-25 °C ... +85 °C
Vibration and shock resistance	Oscillation: 10 ... 55 Hz, 1 mm Shock: 30 g / 11 ms Continuous shock: 10 g / 16 ms
Protection class, housing	IP 40
Protection class, terminals	IP 20

Supply voltage

<i>Models</i>	<i>Supply voltage</i>
462 121 fg hi	24 V AC/DC $\pm 10\%$ FELF (one side earthed)
462 124 fg hi	230 V AC $\pm 10\%$

Current input

<i>Models</i>	<i>Current input</i>
462 121 fg hi	150 mA
462 121 E1 01, 462 121 E1 U1	250 mA
462 124 fg hi	20 mA
462 124 E1 U1	25 mA

Delay period

The delay period is the maximum time interval allowed during sensor operation between:

- ➔ The normally open contact closing and
- ➔ The normally closed contact opening

<i>Type</i>	<i>Maximum delay period</i>
462 121 E1 462 121 E1 01 462 124 E1 462 124 E1 01 462 124 E1 10	300 ms
462 121 E1 U 462 121 E1 U1 462 124 E1 U 462 124 E1 U1	Unlimited

Control output (models 462 121 E1 01, 462 121 E1 U1, 462 124 E1 01, 462 124 E1 U1)

Fuse	3.0 A
Maximum switching voltage	250 V AC; 30 V DC
Maximum switching current	3.0 A AC; 3.0 A DC
Maximum switching power	750 VA resp. 90 W

LED display (models 462 121 E1 01, 462 121 E1 U1 462 124 E1 01, 462 124 E1 U1)

<i>LED at terminal</i>	<i>Colour</i>	<i>Meaning</i>
2	green	Supply voltage ON
7	red	Input sensor 1: Sensor not actuated
8	green	Input sensor 1: Sensor actuated
11	red	Input sensor 2: Sensor not actuated
12	green	Input sensor 2: Sensor actuated
15	green	Input sensor 3: Sensor actuated
16	red	Input sensor 3: Sensor not actuated
19	green	Input sensor 4: Sensor actuated
20	red	Input sensor 4: Sensor not actuated
24	red	Safety output open
25	green	Safety output closed

2 Intended use

- The MSS central control unit is intended for use exclusively to protect against safety hazards.

2.1 Standards and Directives

The MSS central control unit complies with the following European Directives:

- ➔ 73/23/EEC (low-voltage directive)
- ➔ 89/336/EEC (electromagnetic-compatibility directive)
- ➔ 89/37/EC (machinery directive)

The MSS central control unit complies with the following standards:

Standard	Subject
EN 954-1 / category 3	Safety of machines
EN 292	Safety of machines, basic concepts
EN 1088	Interlocking devices with and without bolts
EN 60 204	Electrical equipment for industrial machinery
VDE 0110, IEC 1010	Electrical safety
IEC 68, part 2	Environmental testing
EN 50 082	EMC emission resistance in industrial environments
EN 55 011	Radio interference suppression of industrial electrical equipment
IEC 1000 EN 61000	Electromagnetic tolerance Measurement and testing procedures

Models 462 121 E1, 462 121 E1 U, 462 124 E1, 462 124 E1 U

The MSS central control unit was subjected to EU prototype testing at TÜV/IQSE in Munich, Germany.

2.2 Safety/hazards

General

- Ensure that the MSS central control unit is only installed and commissioned by trained and authorized personnel.
- Ensure that the appropriate fuses are used (see Technical specifications).
- Operate the MSS central control unit only if it is undamaged.
- Ensure that the MSS central control unit is only used for protection against safety hazards.
- Ensure that all relevant safety instructions and regulations for the machine concerned are always followed.
- Ensure that all applicable European directives and national statutory requirements/directives are followed.

Model 462 124 E1 10

- Ensure that terminals 10 to 23 of the MSS central control unit remain unconnected.

3 Function

The MSS Central Control unit monitors safety sensors having 1 x Normally Open contact and 1 x Normally Closed contact, and will give a safety output when all safety sensors and the external contactor input, when used, are correctly operated.

The MSS Central control unit will open the safety output in the following situations:

- ➔ If the closed contact of the sensor opens.
- ➔ If the open contact of the sensor closes.
- ➔ If a fault is detected (If the MSS Central control unit or one of the safety sensors becomes defective).

4 Mounting

General



Danger

Danger of electrocution

- Ensure that the MSS central control unit is only installed and commissioned by trained and authorized personnel.

- Install the MSS central control unit into the control cabinet by snapping it onto a DIN rail (DIN 50 022).

The MSS central control unit is fixed now.

Models 462 121 E1, 462 121 E1 01, 462 121 E1 U, 462 121 E1 U1, 462 124 E1, 462 124 E1 U, 462 124 E1 01, 462 124 E1 U1

- Make all necessary connections to the MSS Central Control unit; see Technical specifications.
- If a sensor input is not used ensure that the Normally Open Contact terminals are linked out.
- Ensure that the correct fuses are installed, see Technical specifications.

Model 462 124 E1 10



Caution

Possibility of damage to the MSS central control unit because of incorrect connections

- Make certain that terminals 10 to 23 of the MSS central control unit remain unconnected.

- Make all necessary connections to the MSS Central Control unit; see Technical specifications.
- Ensure that the correct fuses are installed, see Technical specifications.

5 Commissioning



Danger of electrocution

- Ensure that the MSS central control unit is only installed and commissioned by trained and authorized personnel.

- If an external contactor is being monitored:
Check that terminals 23-24 show a short circuit (contactor not energised).
- Check that
 - All sensor normally open contacts are closed.
 - All sensor normally closed contacts are open.
- Apply the supply voltage.

The MSS central control unit carries out an internal test.

The MSS central control unit checks that the external contactor(s) are in unenergised condition.

Once the self test has been completed successfully, the safety output will close.

The MSS central control unit is now operational.

5.1 System reset

Should a sensor cause the safety output trip inadvertently:

- Check that the sensor normally open contact is open and that the normally closed contact is closed.
- Check that the sensor normally open contact is open and that the normally closed contact is closed.
- Operate the sensor so that the normally open contact closes and then within the delay period, the normally closed contact opens.

The MSS central control unit will perform a self test.

The MSS central control unit checks that the external contactor(s) are in unenergised condition.

Once the self test has been completed successfully, the safety output will close.

The MSS central control unit is now operational.

5.2 Safety output remains switched off

- Check connections at input and output terminals:
 - ➔ Supply voltage,
 - ➔ sensors connected,
 - ➔ contactor connected.
- Connections at input and output terminals OK:
Replace MSS central control unit.

6 Maintenance

The MSS central control unit is maintenance-free.

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