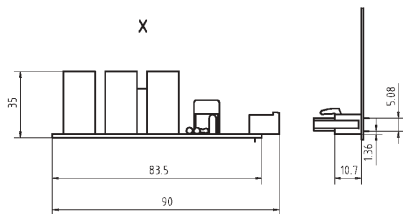
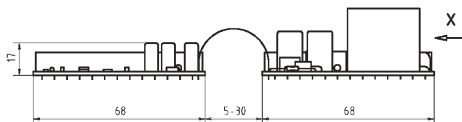


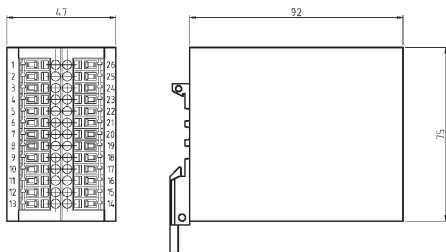
462 121 G1
462 121 G1 U
462 121 H1
462 121 H1 0D
462 121 H1 U
462 121 H1 U2
462 121 H3 01
462 121 H5
462 121 H5 0D
462 121 H5 U
462 123 G1
462 123 G1 U
462 124 G1
462 124 G1 U
462 124 G1 UC

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

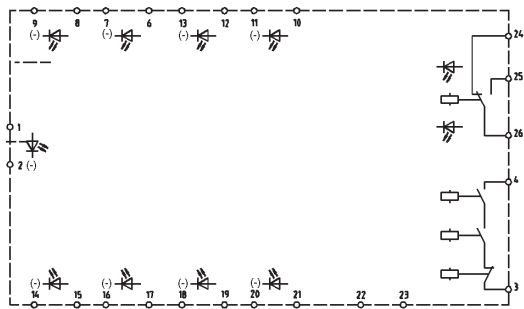
462 121 H1 0D, 462 121 H5 0D



**462 121 G1, 462 121 G1 U, 462 121 H1, 462 121 H1 U,
 462 121 H1 U2, 462 121 H3 01, 462 121 H5,
 462 121 H5 U, 462 123 G1, 462 123 G1 U, 462 124 G1,
 462 124 G1 U, 462 124 G1 UC, 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 10,
 462 124 E1 U1**



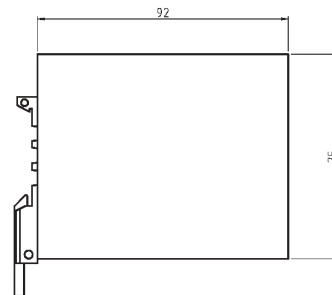
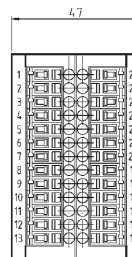
462 121 G1, 462 121 G1 U, 462 121 H1, 462 121 H1 U,
 462 121 H1 U2, 462 121 H3 01, 462 121 H5,
 462 121 H5 U, 462 123 G1, 462 123 G1 U, 462 124 G1,
 462 124 G1 U, 462 124 G1 UC



462 121 H1 0D, 462 121 H5 0D



462 121 G1, 462 121 G1 U, 462 121 H1, 462 121 H1 U,
 462 121 H1 U2, 462 121 H3 01, 462 121 H5,
 462 121 H5 U, 462 123 G1, 462 123 G1 U, 462 124 G1,
 462 124 G1 U, 462 124 G1 UC



1 Technical Specification

1.1 Terminal assignment

General

Up to 4 sensors can be connected directly to the machine safety switch (MSS) central processing unit.

If more sensors are to be connected, elobau recommends using interface 363 098 R.

Models 462 121 H1 0D, 462 121 H5 0D

The MSS central processing unit comes as a plug-in card with pins.

<i>Terminal or pin</i>	<i>Assignment</i>
1, 2	Supply voltage
3, 4	Safety output contact maker, floating
5	Not assigned
6, 7	Input sensor 1, contact breaker
8, 9	Input sensor 1, contact maker (to be bridged, if not needed)
10, 11	Input sensor 2, contact breaker
12, 13	Input sensor 2, contact maker (to be bridged, if not needed)
14, 15	Input sensor 3, contact maker (to be bridged, if not needed)
16, 17	Input sensor 3, contact breaker
18, 19	Input sensor 4, contact maker (to be bridged, if not needed)
20, 21	Input sensor 4, contact breaker
22, 23	External contactor (to be bridged, if not needed)
24	Control output contact breaker, floating
25	Control output contact maker, floating
26	Control output, common ground for 24 and 25

1.2 Type Name/Models

The following example and table explains the type names of the machine safety switch (MSS) central processing units:

- Example:
- 462 121 H3 01
- 4ab cde fg hi

Wild card	Characteristic		Meaning
4ab	Housing type and width	462	Housing width 47 mm
		463	Housing width 25 mm
cd	Specification of safety input	12	Central processing unit for contact breakers/makers for sensors
e	Supply voltage	1	24 V AC/DC; $\pm 10\%$ FELF (single-end grounding)
		2	48 V DC ; $\pm 10\%$ FELF (single-end grounding)
		3	110 V AC; $\pm 10\%$
		4	230 V AC; -10 % ... +6 %
f	Others	G	Class 1 acc. to EN 954-1
		H	Class 4 acc. to EN 954-1
g	Others	1	Insignificant
		3	Customer-specific
		5	Reduced switching power of the safety output
h	Others	0	Insignificant
		U	Any cooling-off period

Wild card	Characteristic		Meaning
i	Others	1	Customer-specific
		2	No autostart; MSS central processing unit must be activated by the user
		C	Customer-specific, on switch-off pulses 1 ms, the safety output remains switched through.
		D	MSS central processing unit comes as a plug-in card

To cover all models in this user manual, the wild cards will be used in the text as well.

1.3 Electrical and mechanical specifications

In the circuit diagram shown on the fold-out page, the MSS central processing unit is shown without any voltage applied.

General

Back-up fuse for supply voltage	1,0 A
Safety output, max. switched voltage	250 V AC bzw. 30 V DC
Operating temperature	0° ... +55° C
Transport and storage temperature	-25° ... +80° 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

Models**Supply voltage**

<i>Type name</i>	<i>Supply voltage</i>
462 121 H1 462 121 H1 0D 462 121 H1 U 462 121 H1 U2 462 121 H3 01	24 V AC/DC; 0 % ... +10 % FELF (single-end grounding)
462 121 fg hi	24 V AC/DC; ± 10 % FELF (single-end grounding)
462 122 fg hi	48 V DC; ± 10 % FELF (single-end grounding)
462 123 fg hi	110 V AC; ± 10 %
462 124 fg hi	230 V AC; -10 % ... +6 %

Current input

<i>Type name</i>	<i>Current input</i>
462 121 G1 462 121 G1 U	100 mA
462 121 fg hi	250 mA
462 123 fg hi	30 mA
462 124 fg hi	15 mA

Safety output

<i>Type name</i>	<i>Fuse</i>	<i>Maximum switched current</i>	<i>Maximum switched power</i>
462 121 G1 462 121 G1 U 462 123 G1 462 123 G1 U 462 124 G1 462 124 G1 U 462 124 G1 UC	3,0 A	3,0 A AC/DC	750 VA or 90 W
462 121 H1 462 121 H1 U 462 121 H1 U2 462 121 H1 0D 462 121 H3 01	5,0 A	5,0 A AC/DC	1700 VA or 190 W
462 121 H5 462 121 H5 U 462 121 H5 0D	3,0 A	3,0 A AC/DC	750 VA or 90 W

Control output

<i>Type name</i>	<i>Fuse</i>	<i>Maximum switched voltage</i>	<i>Maximum switched current</i>	<i>Maximum switching power</i>
462 12 G1 462 121 G1 U 462 123 G1 462 123 G1 U 462 124 G1 462 124 G1 U 462 124 G1 UC	1,0 A	30 V AC/DC	1,0 A	30 VA or 30 W
462 121 H1 462 121 H1 U 462 121 H1 U2 462 121 H1 0D 462 121 H3 01 462 121 H5 462 121 H5 U 462 121 H5 0D	3,0 A	250 V AC or 30 V DC	3,0 A AC/DC	750 VA or 90 W

Cooling-off period

The cooling-off period is the maximum time interval to elapse at a sensor, between:

- the contact maker closing and
- the contact breaker opening.

<i>Type name</i>	<i>Cooling-off period</i>
462 121 H3 01	800 ms
462 121 G1 462 121 H1 462 121 H1 0D 462 121 H5 462 121 H5 0D 462 123 G1 462 124 G1	300 ms
462 121 H1 U 462 121 H1 U2 462 121 H5 U 462 121 G1 U 462 123 G1 U 462 124 G1 U 462 124 G1 UC	any

LED display

<i>LED at terminal</i>	<i>Color</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 betätigt
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 switched off
25	green	Safety output switched through

2 Intended use

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

2.1 Standards and Directives

The MSS central processing unit is approved to the following according european directives:

- ➔ 73/23/EEC (Low Voltage Directive)
- ➔ 89/336/EEC (Electromagnetic Compatibility Directive)
- ➔ 89/37/EC (Machine Directive)

The MSS central processing unit complies with the standards listed below.

General

Standard	Subject
EN 1088	Locking devices with and without bolts
EN 60 204	Electrical equipment of industrial machines
VDE 0110, IEC 1010	Electrical safety
EN 50081	EMC emission (interference) in industrial environments
EN 50082	EMC emission resistance in industrial environments
EN 55011	Radio interference suppression of industrial electrical equipment
IEC 1000, EN 61000	Electromagnetic tolerance, testing and measuring procedures

Models 462 121 H1, 462 121 H1 U, 462 121 H1 U2

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

<i>Standard</i>	<i>Subject</i>
EN 954-1/category 4	Safety of machines
IEC 68, part 2	Effects of ambient influences

Models 462 121 H1 0D, 462 121 H5 0D, 462 121 H3 01

<i>Standard</i>	<i>Subject</i>
EN 954-1/category 4	Safety of machines
IEC 68, part 2	Effects of ambient influences
EN 1088	Locking devices with and without bolts

**Models 462 121 G1, 462 121 G1 U, 462 123 G1, 462 123 G1 U,
462 124 G1, 462 124 G1 U, 462 124 G1 UC**

<i>Standard</i>	<i>Subject</i>
EN 954-1/category 1	Safety of machines
VDE 0660, part 209	Non-contact switching devices

Models 462 121 H5, 462 121 H5 U

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

<i>Standard</i>	<i>Subject</i>
EN 954-1/ category 4	Safety of machines
IEC 68, part 2	Effects of ambient influences
EN 292	Safety of machines, basic concepts
EN 1088	Locking devices with and without bolts

2.2 Safety/hazards

- Ensure that the MSS central processing unit is only installed and commissioned by specially trained and authorized personnel.
- Ensure that the appropriate fuses are used, see Technical Specification.
- Operate the MSS central processing unit only if it is completely intact.
- Ensure that the MSS central processing unit is only used for protection against hazards.
- Ensure that all relevant safety instructions and regulations for the machine concerned are always followed.
- Ensure that all applicable European guidelines and national statutory requirements/directives are followed.
- Ensure that the control output is only used for displaying the operational status of the MSS central processing unit.

3 Function

3.1 General

The MSS central processing unit monitors sensors connected to it, which are equipped with a contact maker and a contact breaker each. The MSS central processing unit switches its safety output according to the status of the sensors connected and external contactor, if connected.

The MSS central processing unit switches off the safety output in the following situations:

- ➔ The contact maker of a connected sensor is opened.
- ➔ The contact breaker of a connected sensor is closed.
- ➔ A fault has been detected (MSS central processing unit or connected sensor is defective).

4 Mounting

Models 462 121 G1, 462 121 G1 U, 462 121 H1, 462 121 H1 U, 462 121 H1 U2, 462 121 H3 01, 462 121 H5, 462 121 H5 U, 462 123 G1, 462 123 G1 U, 462 124 G1, 462 124 G1 U, 462 124 G1 UC



Danger of fatal electrocution

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

- ➔ Install MSS central processing on a DIN rail (DIN 50 022) in the control cabinet.

The MSS central processing unit is fixed now.

- ➔ Connect the MSS central processing unit, see Technical Specification.
- ➔ Ensure that the correct fuses are installed, see Technical Specification.

Models 462 121 H1 0D, 462 121 H5 0D



Danger of fatal electrocution

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

➤ Plug in the MSS central processing unit on the base of the carrier card.
The MSS central processing unit is fixed now.

- Connect the MSS central processing unit, see Technical Specification.
- Ensure that the appropriate fuses are used, see Technical Specification.

5 Commissioning



Danger of fatal electrocution

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

Models 462 121 G1, 462 121 G1 U, 462 121 H1, 462 121 H1 0D, 462 121 H1 U, 462 121 H1 U2, 462 121 H3 01, 462 121 H5, 462 121 H5 0D, 462 121 H5 U, 462 123 G1, 462 123 G1 U, 462 124 G1, 462 124 G1 U

- If an external contactor is connected:
Ensure that the external contactor connected has powered off.
- Ensure that
 - ➔ all contacts at the sensor contact maker terminals are closed and
 - ➔ all contacts at the sensor contact breaker terminals are open.
- Apply the supply voltage.

The MSS central processing unit will perform an internal test.
The MSS central processing unit checks if the external contactor connected has powered off.

As soon as the test has been finished successfully, the MSS central processing unit switches through the safety output.

The MSS central processing unit is operational now.

Model 462 121 H1 U2

- If an external contactor is connected:
Ensure that the external contactor connected has powered off.
- Ensure that
 - ➔ all contacts at the sensor contact maker terminals are closed and
 - ➔ all contacts at the sensor contact breaker terminals are open.
- Apply the supply voltage.
- Open the contact at any sensor-contact maker input.
- Close the contact at the same sensor's contact breaker input.
- Close the contact at this sensor's contact maker input.
- Within the cooling-off period, open the contact at this sensor's contact breaker input.

The MSS central processing unit will perform an internal test.

The MSS central processing unit checks if the external contactor connected has powered off.

As soon as the test has been finished successfully, the MSS central processing unit switches through the safety output.

The MSS central processing unit is operational now.

5.1 Restoring operational status

If the safety output was switched off by a sensor contact firing:

- Ensure that the external contactor connected has powered off.
- Ensure that the contact maker is open, and the contact breaker closed, at the sensor concerned.
- Close the contact at the corresponding contact maker input.
- Open contact at the respective sensor contact breaker within the cooling-off period.

The MSS central processing unit will perform an internal test.

The MSS central processing unit checks if the external contactor connected has powered off.

As soon as the test has been finished successfully, the MSS central processing unit switches through the safety output.

The MSS central processing unit is operational now.

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 processing unit.

6 Maintenance

The MSS central processing unit is maintenance-free.

Datum: 10.08.2004

elobau 

elobau
Elektrobauelemente GmbH & Co. KG

Postfach 1265
88306 Isny/Allgäu
Germany

Werk:
Zeppelinstr. 44
88299 Leutkirch
Germany
Tel.: +49 75 61/970 - 0
Fax: +49 75 61/970 - 100
E-Mail: info@elobau.de
Web: www.elobau.de

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