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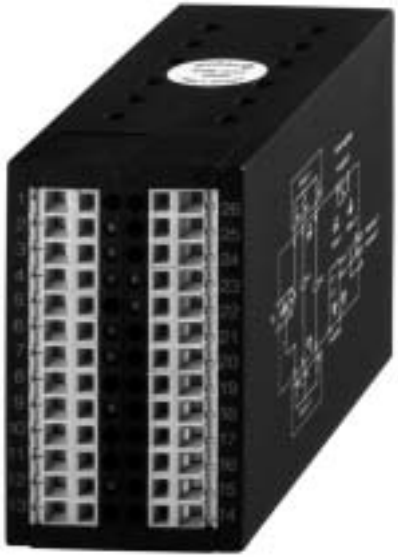


(D) **Betriebsanleitung**
MSS-Zentraleinheit 462 M41 H31(34)

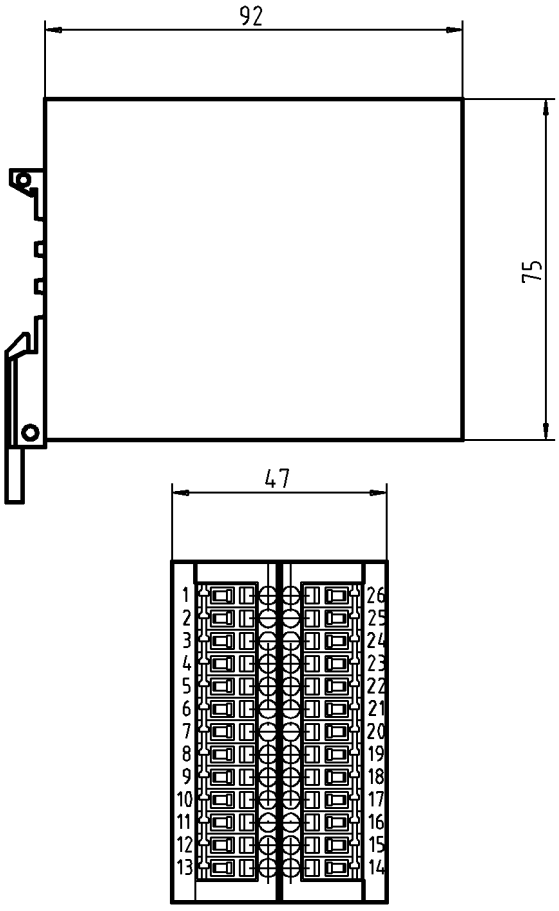
(GB) **Operating instructions**
MSS Central Processing Unit 462 M41 H31 (34)

(F) **Notice d'utilisation**
Unité centrale MSS 462 M41 H31(34)

(I) **Istruzioni d'impiego**
Centralina MSS 462 M41 H31(34)

CE 0123

Datum: 27.08.2003



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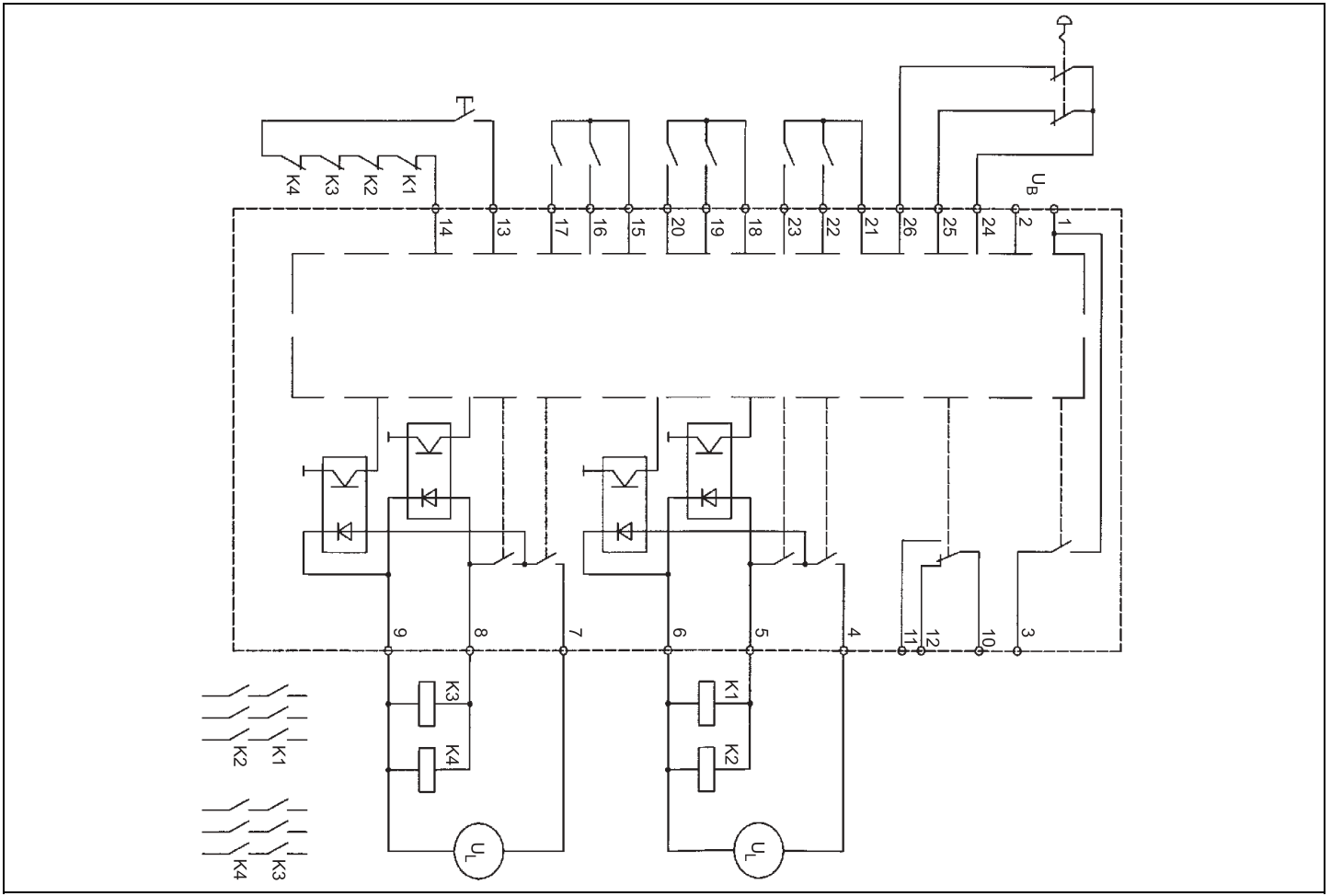

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1 Technical Specification

The prototype Central Processor Unit was successfully tested by TÜV (German Technical Inspectorate).

1.1 Pin assignment

The terminals are assigned as shown in the following table:

Terminal(s)	***Assignment***
1, 2	supply voltage
3	Output, “Ready“ (no defaults detected)
4 – 6	Safety output 1
7 – 9	Safety output 2
10	Control output common, potential free
11	Control output make contact, potential free
12	Control output break contact, potential free
13, 14	External Contactor (link out if not required)
15 – 17	Sensor 4 (link out if not required)
18 – 20	Sensor 3 (link out if not required)
21 – 23	Sensor 2 (link out if not required)
24 – 26	Sensor 1 (link out if not required)

1.2 Observed standards and guidelines

The Central Processing Unit fulfills the following European guidelines:

➔ 73/23/EEC
➔ 89/336/ EEC
➔ 89/392/ EEC

The Central Processing Unit conforms to the following standards.

Standards	***Content***
EN 954-1/ category 4	Machine Safety
EN 60 204	Electrical equipment for industrial machinery
DIN V19250	Basic safety overview of protective equipment, category 5
DIN V19251	Protective equipment; requirements and measures for safety function
Draft IEC 61508	Functional safety, safety-relevant systems SIL3 (application on test intervals)
EN 50178	Electronic equipment for use in power installations
IEC 664-1	Insulation coordinates in l.v. switchgear
DIN EN 60068	Basic environmental test procedures
EN 50081-2	EMC emissions in industrial environments
EN 50082-2	EMC immunity in industrial environments

Standards	*Content*
EN 55011	Interference suppression of electrical equipment and systems

1.3 Technical specification

Supply voltage	24 V AC/DC ± 10 % FELF, one side of the power supply must be grounded
Power consumption	200 mA
Operating temperature	0° – +55° C
Storage and transportation temperature	-25° – +85° C
Vibration and shock resistance	Vibration: 10 – 55 Hz, 1 mm Shock: 30 g / 11 ms Repeated shocks: 10 g / 16 ms
Housing material	PA
Protection class: housing	IP 40
Protection class: terminals	IP 20

	462 M41 H31	*462 M41 H34*	*Control output*
Max. switching voltage	30 V AC/DC	250 V AC	30 V AC/DC
Max. switching current	8/5 A	8/5 A	1 A
Max. switching power	150 VA/W	1150 VA/W	30 VA/W

2 Safety/Danger

Only install the Central Processing Unit as protection against hazards. The safety requirements of the respective machine must be taken into consideration.

3 Intended use

The MSS Central Processing Unit is used for monitoring up to four sensors directly connected, each sensor containing two make contacts. A maximum of 32 sensors can be connected via external interface units. It is also possible to monitor Emergency Stop switches, and to have a mandatory “start” button.

4 Function

The Central Processing Unit functions as follows.

4.1 Sensor contacts open

When any sensor contacts opens, all safety outputs will be switched off immediately.

To restore safety outputs

➲ Operate sensor.

4.2 Sensor contacts in different states

If both sensor contacts are not in the same switching state for any reason, the safety outputs will switch off immediately, followed by the “Ready“ output opening and the LED on terminal 3 going out, after a period of 3 seconds.

To restore safety outputs

➲ Complete open the relevant sensor and close again.

The “Ready“ output will close, the LED at terminal 3 will come on again and the safety outputs will be restored.

4.3 In the event of a defect

All safety outputs will switch off if:

➔ There is a defect,
➔ If a safety output is connected incorrectly.

The “Ready“ output will switch off an the LED at terminal 3 will go off.

Danger

Injury hazard through electric shock

- ➲ Disconnect machine from mains.
- ➲ Check wiring.

To return to operation

- ➲ Check wiring.
- ➲ Switch supply voltage off and on again.

5 Assembly

To install the Central Processing Unit in the control cabinet.

- ➲ Snap onto a DIN rail (DIN 50 022) to secure.

5.1 Fuses

Protect inputs and outputs with fuses as shown in the table below.

Input or output	*Fuse*
Supply voltage, back-up fuse	1 A
Safety outputs, each	max. 5 A
Control output	1 A

5.2 Connection of an Emergency Stop Switch circuit

One or more Emergency Stop Switches can be connected to one of the sensor inputs. Where several Emergency Stop switches are connected, these must be connected in series.

When used this way, it is mandatory for a start button to be used, and this should be connected to the external contactor circuit.

5.3 Start-up

Once the supply voltage has been applied, the Central Processing Unit carries out a self-test. This test can take up to 10 seconds. With the test successfully completed, the LED at terminal 3 (“Ready“), will light up.

The safety outputs and the control output will switch on when

➔ all sensors are operated,
➔ the safety outputs are connected correctly,
➔ the external contactor circuit shows as a short circuit.

LEDs

The green LEDs adjacent to the terminals signify the following.

LED at terminal	***Significance***
2	Supply voltage is applied
3	“Ready“ (No faults detected)
5	Safety output 1 is closed
8	Safety output 2 is closed
10	Control output is operated

LED at terminal	*Significance*
14	External contactor circuit shows short circuit
16	Contact 1 of sensor 4 closed
17	Contact 2 of sensor 4 closed
19	Contact 1 of sensor 3 closed
20	Contact 2 of sensor 3 closed
22	Contact 1 of sensor 2 closed
23	Contact 2 of sensor 2 closed
25	Contact 1 of sensor 1 closed
26	Contact 2 of sensor 1 closed

6 Maintenance

6.1 Function test

The function of the safety outputs must be tested within periods not exceeding 14 days.

➲ Open any sensor, ensuring both contacts change state.

All safety outputs are switched off.

➲ Fully close the sensor again.

The LED of terminal 3 (readyness for service) is continuously illuminated.

In order to remind the user to carry out the function test, the LED at terminal 3 (“Ready“) will, after a period of 13 days, flash every second.

6.2 Self-test of Central Processing Unit

The start up self-test of the Central Processing Unit must activated at least every 3 months.

➲ Switch supply voltage off and on again.

The Central Processing Unit runs through its self-test and the safety outputs close.

Datum: 27.08.2003

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