

**OPERATING INSTRUCTIONS Gas-Detection-Center GDZ 401**

V1.905

(LCD)

(L3)



(L1) (L2) (T1) (T2) (T3) (T4) (T5) (T6) (T7) (T8)

(L1) Operating control collective indication (L2) control keys (Tn)  
 (LCD) Display (L3) Einzelmeldung – individual indication

**Bereit** - Ready **Störung** – Malfunction **Wartung** - Maintenance

**▼ IMPORTANT!**

The handling of this device requires the knowledge and observance of these operating instructions. The annex "Safety Instructions for the Installation Company and the User" is to be observed absolutely!

**Liability for Function or Damages**

The liability for the function of this device passes over to the proprietor or user, if the maintenance or repair is executed by persons not belonging to the service of the manufacturer, or if a handling is carried out not being in accordance with the regulations. The manufacturer is not liable for damages resulting from non-observance of the comments indicated.

**Device Maintenance**

The device is subject to regular inspections executed by qualified technical personnel. The maintenance interval depends on the sensors connected and additionally is required by law. It is recommended to conclude a service contract in order to keep to the regular maintenance interval.

# CONTENTS

<b>IMPORTANT!</b>	<b>1</b>
Application .....	3
Turn-key-switch-function.....	3
Device Design .....	3
Alarm Messages .....	3
Device Fault Alarm .....	3
Mains Failure – Alarm Suppression.....	3
Sensor Connection.....	3
Relay Outputs .....	3
Interface RS 232 C .....	4
Pin Assignment / Connecting Cable for Serial Interface .....	4
Connecting Cable for Printer (a, b), Serial/Parallel Converter (b) or PC (Zero Modem c,d):.....	4
LCD Display.....	4
Start-Up.....	4
Maintenance.....	4
Placing out of Service .....	4
Operating the LCD Display in Normal Operation .....	5
Display Indications in normal Operation.....	5
Operation of the Keys for the System Control .....	5
<b>SYSTEMSTEUERUNG / SYSTEM CONTROL .....</b>	<b>6</b>
MEASUREMENT RECORD --> .....	6
ALARM MEMORY --> .....	6
PRINT OUT --> .....	6
Control of the printer output.....	6
Examples for Alarms and Measurements in Plain Text: .....	7
Example for a Measuring Certificate in Tabular Form .....	7
TEST -->.....	8
CLOCK -->.....	8
HORN / LCD ILLUM. -->.....	8
<b>PROTECTED PARAM. --&gt; .....</b>	<b>9</b>
ALARM OUTPUT:.....	9
SENSOR -->.....	9
ALARM STAGES --> .....	10
SAMMELALARME (COLLECTIVE ALARMS) -->.....	10
RELAYS --> .....	10
INDICATOR PANEL: --> .....	11
TEXT -->.....	11
TEST GAS ADJUSTMENT: -->.....	11
Calibration of individual measuring point with test gas.....	11
COLD START .....	11
MODBUS.....	11
Terminal connecting plan: Power, Emergency power, Reset, Printer .....	12
Terminal connecting plan: Sensor heads 1...4 .....	13
RELAY OUTPUTS (collective alarm with redundant valve relay) .....	14
RELAY OUTPUTS (collective alarm).....	15
RELAY OUTPUTS K1..K4 (Zone 1 alarm output ) .....	16
RELAY OUTPUTS K5..K8 (Zone 2 alarm output ) .....	17
Terminal connection diagram: RELAY OUTPUTS with alarm transmitters 230VAC .....	18
Terminal connection diagram: RELAY OUTPUTS with alarm transmitters 230VAC and redundant valve relay .....	19
Wiring diagram LED-illuminated warning transparent LT- GA .....	20
Emergency power supply in case of mains failure : NSP-Z-L wall mounted housing to supply Gaz203 .. GDZ801 centrals.....	21
Connecting diagram: Emergency power supply NSP-B-L for switch boards and NSP-Z-L (wall mounted housing) .....	22

## Application

The device serves

- for the acquisition or measurement and evaluation of carbon monoxide concentration or other gases
- for the control of countermeasures, f. ex. ventilation, disconnection of aggregates
- for the warning in case of dangerous concentrations.

The device corresponds to the regulations of VDI 2053 and is suitable for the employment in basement garages.

## Turn-key-switch-function

In most cases, the main device is equipped with a turn-key-switch to disable alarm-outputs. In the vertical position, alarms are enabled and the system is normal working.

In the turn-key-switch in horizontal position, all alarm-outputs are suppressed (disabled for service works and in special cases). Keep in mind, the system is not real working.

To avoid illegal operation, the key must be removed in vertical position (normal condition) and reserved from the service department or service person.

Each operator must be aware that he can disable the alarm-output by the turn-key-switch (horizontally position = disabled, blocked alarm-output) and possibly consequential damages can occur.

Furthermore the key is not allowed to be stored negligently accessible for uninstructed persons or is handed over to persons without admission.

In case of disabled-alarms (service mode) the LED „Service“ indicates it. The failure relay „GSM“ is inactive and the signal can optionally be sent to an external alert box.

## Device Design

### GDZ 401 Gas-Detection-Center

#### 1.4 measuring points, 3 (4) alarm stages, LCD display

## Alarm Messages

If a measuring signal or its mean value reaches a switching point, the corresponding alarm is released.

The dedicated LED lightens up and the dedicated relay is activated.

The determination of measuring parameters and switching thresholds for the individual measuring points as well as the allocation of output relays for alarm signals are stored via a parameter menu.

The parameters set can be read from the test certificate or they can be printed out using a printer with serial interface RS 232.

Individual alarm messages can continue to exist, after discontinuation of the basic cause. This is the case, if a temporal after-running has been programmed for the alarm level, f. ex. to provide for sufficient ventilation or minimum ventilator running time.

If necessary, individual alarm levels of particular measuring points can be programmed self-storing, so that they are reset not until the alarm Reset Key (T1) is activated.

A reset of stored sensor alarms is only possible after the alarm cause is eliminated.

It is possible to disable an activated main alarm by pressing the alarm Reset Key (T1) (disable or enable of the main alarm).

Otherwise the alarm resets automatically after signal is passing through a signal hysteresis (at least 3 digits) and the alarm reason is eliminated.

## Device Fault Alarm

After 10 seconds a device fault alarm is issued on the following conditions:

- mains failure
- after cold start until 1 minute after mains recuperation
- blown fuse
- device damage
- drop of distribution voltage of the sensors (< 20 V)
- interruption/short circuit of sensor feeder
- measuring signal leaves the maximum measuring range (<2.5mA or >25mA)  
if a signal is too low (< 3.3mA) the measuring display is flashing
- malfunction of the software
- loss of parameter settings
- disconnecting the main alarm manually by pressing the alarm reset key

In case of malfunction, the contacts 71 and 72 as well as 74 and 75 of the device fault alarm relay (relay GSM(DFA)) are closing, contact 73 will be separated from 72 and contact 76 from 75.

The Ready-LED is deactivated and a device malfunction LED flashes regularly, even if the mains failure takes several days. A plain text appears on the LCD display.

## Mains Failure – Alarm Suppression

The device possesses a time delay to be activated optionally, that is activated after each failure of the power supply (cold start), and the alarms are suppressed until the sensors are ready for operation. During this time the fault alarm is indicated.

If the time delay is switched on, the device is on stand-by 1 minute after the power supply is connected, provided no other malfunctions are in existence.

## Sensor Connection

In order to supply the sensors, a direct voltage of 20V-28V is provided by the device.

Up to 8 sensors with output signals 4-20mA can be connected to the GDZ 801.

The shielded cable JY(St)Y2x2x0,8mm can be used as sensor feeder.

The wire colours can be allocated as follows:

Red => +24V (KI 1), White => 4-20mA (KI 2), Black => 0 V (KI 3), Yellow => PE (KI 4)

**The supplementary earth wire is only to be cabled with the yellow wire and to be connected on terminal 4 (protective conductor PE) in the device.** The supplementary earth wire is connected with the shielding in the cable.

In case of sensor housing made of metal, the supplementary earth wire is to connect with the metal housing.

During mounting, it has to be observed, that the stripped supplementary earth wire does not get in contact with the circuit.

If the metal housings are mounted on earthed steel supports, the wire connecting the metal housings and the wire for terminal 4 (PE) are not to be connected with the sensor.

## Relay Outputs

All devices possess a relay with 2 separated change-over contacts for the device fault alarm (GSM).

The devices possess, in addition, about 3 alarm relays for warning lights and horns.

It is also possible to extend them with zone (alarm) output modules.

The alarm relay outputs are equipped with 3 contacts. In reading direction the sequence of the terminals is as follows: make contact (1x), change-over contact (x2), break contact (x3).

Apart from programmed negated output, the make contact is normally closed with active output signal, meaning in case of pending alarms or existing malfunction signals.

The relay outputs of the alarm signals can be delivered optionally with potential separated double contacts.

### Interface RS 232 C

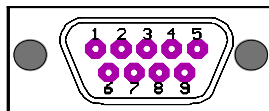
The interface RS 232 C (plug 9 pins) serves to connect a printer or terminals for the output of test, measuring, and alarm certificates. Maximum distance: 15 m. For the output over longer distances interface converters are available.

The output of device messages and/or measuring certificates are effected as ASCII String and can be printed directly via a printer or they can be taken over directly into PCs.

The last approximately 1000 device messages are recorded in the memory and printed at a later time. Depending on the printer output format it is also possible with measuring values.

Being able to record substantial measurements a data logger can be offered recording measurements of any measuring point on site for weeks or months. The measuring values can be transported and handed over to a stationary computer for visualisation in PC programmes.

### Pin Assignment / Connecting Cable for Serial Interface



PIN3 = TXD, connected to RXD of the printer  
 PIN5 = GND  
 PIN6 = DSR, connected to DTR of the printer or terminals,

enabling the control of data transmission (hard ware certificate)

### Connecting Cable for Printer (a, b), Serial/Parallel Converter (b) or PC (Zero Modem c,d):

#### Device Connection Printer Connection

a)	Socket 9 pin	-	Plug 9 pin
	Shield 1	=====	1 Shield
	RxD 2	=====	2 TxD
	TxD 3	=====	3 RxD
	DTR 4	=====	4 DSR
	Ground 5	=====	5 Ground
	DSR 6	=====	6 DTR

b)	Socket9 pin	-	Plug 25 pin
	Schirm 1	=====	1 Shield
	RxD 2	=====	2 TxD
	TxD 3	=====	3 RxD
	DTR 4	=====	6 DSR
	Ground 5	=====	7 Ground
	DSR 6	=====	20 DTR

#### Device Connection PC Connection

c)	Socket 9 pin	-	Socket 9 pin
	Shield 1	=====	1 Shield
	RxD 2	=====	2 RxD
	TxD 3	=====	3 TxD
	DTR 4	=====	4 DTR
	Ground 5	=====	5 Ground
	DSR 6	=====	6 DSR

d)	Socket 9 pin	-	Socket 25 pin
	Shield 1	=====	1 Shield
	RxD 2	=====	2 RxD
	TxD 3	=====	3 TxD
	DTR 4	=====	6 DTR
	Ground 5	=====	7 Ground
	DSR 6	=====	20 DSR

### LCD Display

A double-line LCD display serves for the indication of the current measuring values and the parameterization of the individual measuring points.

### Start-Up

**All functions of the device are to be verified by means of a test gas task on start-up. A certificate has to be drawn up.**

### Maintenance

**Maintenance in certain intervals is required to maintain the functional safety. Maintenance interval can be taken from the test label, amounting to 1 year, at the most.**

### Placing out of Service

In case of placing the device out of service the programmed data are not lost. The data of the memory for accumulated messages continue to remain, too.

If the device is out of service for more than 4 weeks, the sensors have to be verified and calibrated once again, if necessary, after start-up with test gas.

Technical Modifications are subject to change.

## Operating the LCD Display in Normal Operation

With the **Display Key** the next double line is adjusted.



If the **Shift Key (T5 Umsch.)** has been pressed previously it is possible to adjust the preceding display line.

The gas types and the measuring values are displayed intermittently in normal operation.

If no key is activated, the display illumination with devices GDS, GCS, and CCS is disconnected after a programmed time.



With the Illumination Key (T4) the display illumination can be connected or disconnected.

By activating any other key, the illumination is connected.

## Display Indications in normal Operation

This menu line appears automatically, if a device malfunction exists:

**GDZ 801 No. A xxxxx**  
Device designation / Manufacturing number  
**GSM(DFA): MF-Current <2mA**  
Plain text of the primary device fault alarm

**MS 1 MS 2 MS 3** Measuring point number  
**ZO 1 ZO 1 ZO 2** Measuring or alarm zone

**MS 1 MS 2 MS 3** Measuring point number  
**CO CO NO2** Gas type  
**Display in normal operation**

**10 209 0,0** Measuring value  
**ppm ppm ppm** Measuring unit  
**Display in normal operation**

**10 209 1,0** Measuring value  
**MS 1 MS 2 MS 3** Measuring point number

**m 15 m 176 m 1,2** Mean value (f. ex. half hours)  
**ppm ppm ppm** Measuring unit of mean value

**m 15 m 176 m 1,2** Mean value  
**MS 1 MS 2 MS 3** Measuring point number

**AS 0 AS 3 STM1** Alarm stage/Sensor malfunction  
**MS 1 MS 2 MS 3** Measuring point number

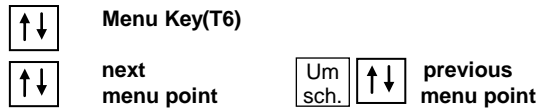
AS 0 = no alarm, **defective measuring points are flashing**  
STM1= parting of a cable STM2 = short circuit of measuring feeder

**↑↓** to system control (It is possible to jump to the system control from each display line)

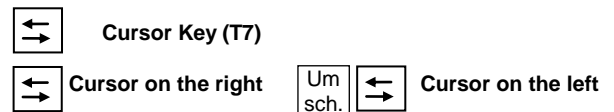
## Operation of the Keys for the System Control

Attention: If the keys are pressed for a longer time, an accelerated repetition of these functions is automatically executed.

### 1. Select menu point

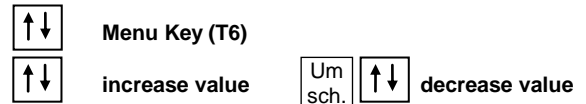


With the assistance of the menu key it is possible to reach the menu of the system control and to obtain the requested menu point. The cursor has to be positioned on the **first position on the left on the second display line.**



In order to jump with the cursor into a menu point and being able to reach a value to be modified, the **Cursor Key** has to be pressed. If the **Shift Key** has previously been pressed simultaneously, it is possible to move back, if necessary.

### 2. Modify settings



Numerics, characters and settings are modified on the current cursor position using the menu key: press T 6 to increase the value.

Press the shift key + T6 to decrease the value.

### 3. Inputs are delivered to the System



With the **Enter Key** inputs are terminated and commands are executed. Otherwise modifications are ignored.

### 4. Leaving the system menu



With the assistance of the **Display Key** it is possible to leave the system menu at any time and to switch over to normal operation, that is measuring display.

**SYSTEMSTEUERUNG / SYSTEM CONTROL**



**to normal operation**  
It is possible to exit from any menu point



xxxxxxx  
xxx xxxx No. A xxxxxx  
Display of the device type and production number



**MEASUREMENT RECORD -->**  
Storing/Printing of measuring values  
of individual sensors in selectable intervals

MEASUREMENT RECORD 1/0  
INTV: x MIN/SEC FILT: 0/1

1/0 connect/disconnect recording  
x measuring intervals in minutes/seconds  
0/1 0 =without filter; 1 =with filter

Filtering (1): Recording is only executed with measuring modifications, bigger than 1/256 of the basic measuring range, amounting to 3 digits, at least.

SENSOR x ..y  
MEASURING RECORD YES/NO  
Enter the measuring points for which a measuring certificate is to keep/not to keep.



**ALARM MEMORY -->**  
Indicating or deleting of the printing memory for accumulated messages and recorded measuring values.

Alarms and malfunction messages are always stored with time and date. A measuring certificate is only drawn up on request, see above.

MEASURE ALARM FAULT  
875 5 0  
Display of the respective number of accumulated messages since the memory has been deleted.

**ALARMS + MEASURES**  
Delete? Delete the printing memory.  
A confirmation is requested.  
**After start-up the memory is to delete.**



**PRINT OUT -->** Control of the printer output

As long as the respective printing process is running, the display "**PRINTING!**" appears. After printing is terminated the display "**printing ready**" appears. The printing time depends on the adjusted baud rate and the number of accumulated messages.



**ALARMS+MEASURES OUTPUT:**

MM-TEXT/SP The storage and output of messages and measurements is executed individually in plain text.  
MEASTAB+DFA The output of measurements is made in tabular form. Occurring device fault alarms are indicated in plain text. Alarm and malfunction messages are stored for later printout.  
MEASURING TABLE The output of measurements is executed in tabular form. Alarm and malfunction messages are stored for later printout.  
EXCEL The output of measurements is effected in tabular form. Line breaks for the printer are omitted to read the data in via (zero) modem and (Windows) modem program to process or visualize in EXCEL or other programmes. Alarm and malfunction messages are stored for later printout.



**ALARMS+MEASURES IMMEDIATE PRINTING:**

ON Storing and immediate printing of the accumulated messages or measuring certificates.  
OFF Storing of messages for later printout.



**ALARM MEMORY -->**  
Printout of the accumulated messages and measures since deletion of memory

MEASUREMENT ALARM STRG  
875 5 0  
Display of the accumulated messages since the deletion of memory.

**ALARM+MEASURES**  
PRINTER OFFLINE Printer not connected or busy.  
Printing, READY  
Starting the memory printout. Printout of all messages (repeatable) since the memory has been deleted or since the last thousand messages in case of storage overflow.

**ALARMS+MEASURES**  
delete? Deletion of the memory.  
A confirmation is required.



**TEST CERTIFICATE-->**  
Printout of all device settings

**TEST CERTIFICATE**  
PRINTER OFFLINE Printer not connected or busy.  
Printing, READY Printout can be started.

### Examples for Alarms and Measurements in Plain Text:

14.03.97, 13:32:25, MF 1, MEW 63, MIW 54 ppm CO ← Measurement  
 14.03.97, 13:36:40, MF 5, MEW 32, MIW 30 ppm CO, SWITCHING STAGE 1 ON ← Alarm message  
 14.03.97, 13:52:20, MF 5, MEW 24, MIW 27 ppm CO, SWITCHING STAGE 1 OFF  
 14.03.97, 13:36:40, MF 5, MEW 32 ppm CO, (MAXIMUM)

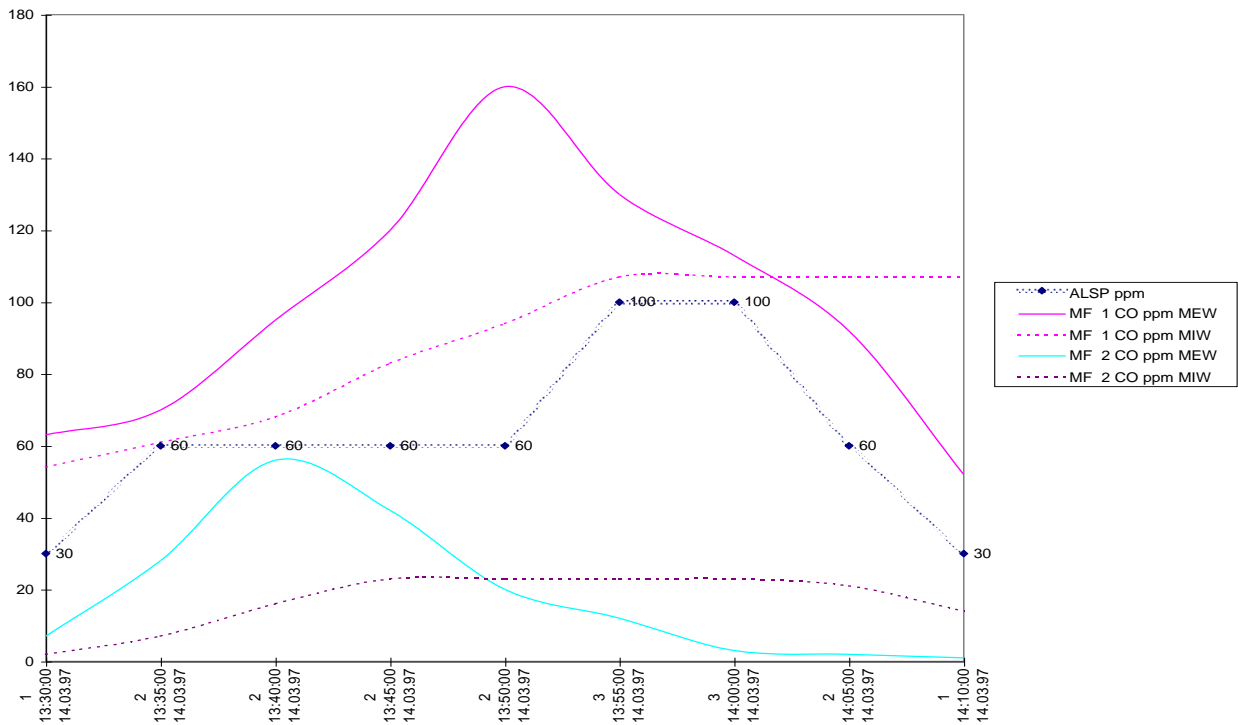
15.03.97, 00:50:10, MF 3, MF-STROM <2,5mA MALFUNCTION ON ← Malfunction messages  
 15.03.97, 01:20:32, MF 3, MF-STROM <2,5mA MALFUNCTION OFF

16.03.97, 13:06:22, MF 4, MF-STROM >25mA MALFUNCTION ON  
 16.03.97, 12:02:42, MF 4, MF-STROM >25mA MALFUNCTION OFF

17.03.97, 09:32:52, MF-SUPPLY MALFUNCTION ON  
 17.03.97, 09:32:52, OPERATION OFF ← Other messages  
 02.04.97, 20:31:33, OPERATION ON

### Example for a Measuring Certificate in Tabular Form and a diagram drawn up using EXCEL 7.0:

DATE	TIME	ALST	ALSP	MF 1	MF 1	MF 2	MF 2	...	ALST = Alarm stage
				CO	CO	CO	CO		ALSP= Alarm switching point
				ppm	ppm	ppm	ppm		
				MEW	MIW	MEW	MIW		
14.03.97	13:30:00	1	30	63	54	7	2	...	
14.03.97	13:35:00	2	60	70	61	28	7	...	
14.03.97	13:40:00	2	60	95	68	56	16	...	
14.03.97	13:45:00	2	60	120	83	42	23	...	
14.03.97	13:50:00	2	60	160	94	20	23	...	
14.03.97	13:55:00	3	100	130	107	12	23	...	
14.03.97	14:00:00	3	100	113	107	3	23	...	
14.03.97	14:05:00	2	60	92	107	2	21	...	
14.03.97	14:10:00	1	30	52	107	1	14	...	



↑↓

**SET RS232 ->**  
**Setting of serial interfaces**

These settings have to correspond to the settings on the connected terminal/printer.

→

↑↓

**BAUD RATE: B/SEC**  
 300-9600 BAUD (Bits/sec)

↑↓

**PARITY** NONE  
 UNEVEN  
 EVEN

Determination of test bits for the transmission. 8 data bits and, in addition, with the setting "no parity" 1 stop bit, otherwise 2 stop bits are sent.

↑↓

**HANDSHAKE**

WITHOUT Printer data are sent.  
 DTR-DSR Printer data are only sent on demand of the printer.

↑↓

**TEST -->**  
Test menus for the executed settings of the output relays and zone allocations as well as for the sensor currents

**ATTENTION: Alarms are executed via the relays, meaning possible connected ventilators or warning devices are activated.**

The release of the relay output is carried out after the first actuation of the Enter Key (T8)! In the menu. After that the relay output alterations of the parameters by the System Menu Key (T6).

←→

**ALARM TEST**

OFF No Relay activatable

WL clocked Relais (warning lights) will be set one after another for 7 seconds

HORNS Horn relays act for 1 second one after another with a delay of 7 seconds

WL+HORNS) Test of both equipments

↑↓

**SZC x-y ALARM a-b**

Selection of alarm releasing sensors, zones, or collective alarms, and the alarm stages. The mode depends on the selected alarm type:

SE->SA(LED) The **sensor/s** releases/ release the **sensor alarm relays** (LED display: sensor alarms).

SE->ZA(LED) The **sensor/s** releases/release the assigned **zone alarm relays** (LED display: zone alarms).

SE->CA(LED) The **sensor/s** releases/ release the assigned **collective alarm relays** having assigned zones (LED display: collective alarms).

SE->SA(LED)+ZA+CA The **sensor/s** releases/release **all assigned relays (sensor alarms, zone alarms, and collective alarms)** (LED display: sensor alarms)

ZO->ZA(LED) The measuring **zone/s** releases/release all assigned **zone alarm relays** (LED display: zone alarms).

ZO->CA(LED) The measuring **zone/s** releases/release the assigned **collective relays** (LED display: collective alarms).

ZO->ZA(LED)+CA The measuring **zone/zones** releases/releases **all assigned relays (zone alarms and collective alarms)** (LED display: zone alarms).

CA->CA(LED) The **collective alarm/s** releases/release the assigned **collective alarm relays** (LED display: collective alarms).

↑↓

**ALARM RELEASE**

OPERATION (MEW/MIW) Alarm release through current value or mean value, if mean value time of the respective measuring point is <= 0 min

MAINTENANCE ONLY MEW  
 Alarms are released directly from the current measuring value, mean value release is inactive. The maintenance LED (in group 1) is flashing.

↑↓

**SENSOR : 1**  
 20.00 mA + 300 ppm

Selection of a measuring point. Display of the sensor current and the measuring value with sign.  
**Verify on start-up!**

↑↓

**LED TEST**  
 LED: ON/OFF

Function test for all LED displays

↑↓

**CLOCK -->**  
Setting of the system clock

→

↑↓

**Tuesday 03.11.95**  
**14:55:07**

Adjustment of the weekday, the date, and the time. Observe: When entering the minutes the seconds indication goes to zero. Entering of seconds are not observed.

↑↓

**DAYL.SAV.T. YES/NO**  
**MONTH(END) x - Y**

Activation of the automatic Daylight saving time/winter time changing over  
 Entering of the months with which the changing over is effected, respectively in the last week (3 - 10 = March to October)

↑↓

**HORN / LCD ILLUM. -->**  
Adjustment of the duration for acoustic alarms and LCD illumination

→

↑↓

**AUDIBLE ALARM DURATION**

**UNLIMITED**  
 No automatic disconnection of transmitting relays for acoustic signals

**TIME LIMITED**  
 Automatic reset after expiration of the horn time.

Not depending on the adjustment, it is possible to disconnect the corresponding transmitting relays using the Horn Reset Key (T2). The reset is executed even if no alarm is existing, that would release the transmitting relays.

↑↓

**HORN TIME: n MIN**

Entering of the maximum activation time of acoustic signals (2 to 240 minutes) after the alarms have occurred.

←

**Lcdbel.: 5 MIN/4 h/DURATION**

Selection of the illumination time for the LCD illumination after pressing a key





**PROTECTED PARAM. -->**  
[Adjustment of protected device parameters through qualified technical personal](#)

After the work is terminated it has to be changed over to measuring points display, using the display key. In this connection test sums are made out for the parameters entered. Otherwise a parameter error alarm appears after some time.



**PARAM.-ACCESS-CODE**  
 0000

Entering of a code word using numerics, characters, and special signs.  
**If the correct code word is not entered, the device parameters cannot be changed. It is however possible to examine the adjustments.**



**ALARM OUTPUT:**

OUTPUT Output of occurring alarms during maintenance and menu operation.  
LOCK 4 h Locking of the alarm relays for a maximum of 4 hours. The maintenance LED (in group L1) is flashing. If no key is pressed for a maximum of 4 hours, an automatic change-over to alarm output is effected.  
ONLY WL+HORNS 4h Only clocked relay and horn relay will act, others are disabled



**SENSOR -->**  
[Adjustment of measuring point parameters](#)



**NUMBER:** a  
 Enter measuring point number



**SENSOR** x to y  
 Activates the measuring point x to y for adjusting the sequential parameters:



**OPERATION:**  
ACTIVE Measuring point displays and alarm releases are active.  
INACTIVE No display and no messages!



**ZONE:** z  
 Enter an alarm zone to which a measuring point is assigned to.



**SENSOR:** EL-CH...  
 Enter the sensor type.



**CURVE TYPE:**  
LINEAR Sensor with linear measuring curve.



**GAS TYPE** CO  
 NO2  
 ...  
 Designation of the gas type to be measured on the measuring point. Selection from definite entered gas types (4 characters) or from previous inputs of self created symbols in the menu "TEXT (TEXTS)"



**UNIT** ppm  
 Value (Emergency)  
 Enter the measuring unit for the measuring values of the measuring points (f. ex. adjustment: ppm)



**DECIMAL PLACE:** xxxx

It is possible to select four decimal points for measuring value display and printout: xxxx .xxx x.xx xx.x. With a logarithmic curve the adjustment cannot be changed.



**ACTIVE-MR** 310 ppm

**Display** of the active measuring range, f. ex. 0-310 ppm, with reference to the measuring signal from 4 to 20mA resulting from an adjustment on the subsequent basic measuring range of the measuring point or through a subsequent described test gas adjustment with software calibration.



**BASIC-MR** 300 ppm

**Input** of the requested basic measuring range for the inputs 4-20mA of the individual measuring points as delivered.



**AMR=BMR adjust**

The active measuring range is adjusted to the basic measuring range of the respective measuring point. Through this a possible executed software adjustment of these measuring points is invalidate. Now adjusted sensors are to operate on the inputs.



**ZEROPOINT** 4,00 mA

Zeropoint setting (Standard 4,00 mA) to increase zero tolerance of individual sensors



**MEAN DURATION** x MIN

Enter a length of time in minutes for which a mean value from the measuring values in this period of time is to be formed continuously, f. ex. half-hourly mean value.  
 If the adjustment is not 0, the alarm release from alarm stage 1 to 3 is automatically dependent on the mean value.



**ALARM/VENTILATION OPTIMIZATION:**

NO Mean value alarms are only deleted by the mean value  
YES Mean value alarms are only deleted by the current value. For this, an ventilator after-running is recommendable, f. ex. 5-10 min.



**AFTER-RUN** x MIN

If an after-running is entered, the automatic reset from alarm 1 and alarm 2 is delayed (f. ex. for reventilation)



**ALARM STAGES -->**  
[Input of threshold values for alarm releases](#)



**ALARM STAGES: n**  
*enables 2 or 4 alarm stages(Switch points)*



**SwitchP1:** Switching point for alarm 1



**SwitchP2:** Switching point for alarm 2



**SwitchP3:** Switching point for alarm 3



**SwitchP4:** Switching point for alarm 4



**A1-Mode:**



**A2-Mode:**



**A3-Mode:**



**A4-Mode:**

**+RES** Alarm release in case of an increase in gas concentration with automatic reset of the alarm

**+ST** Alarm continues to remain even after cessation of the reason for releasing the alarm until the internal Alarm Reset Key (T1) is pressed.

**-RES** Alarm release in case of an decrease in gas concentration with automatic reset of the alarm.

**-ST** Alarm continues to remain even after cessation of the reason for releasing the alarm until the internal Alarm Reset Key (T1) is pressed.



**RELAYS -->**  
[Adjustment of the relay parameters](#)



**Number: n**

Enter the number **n** of the relays:  
 In case of centrals without extension 5 relays.  
 With systems a maximum of 255 relays.  
 If extension modules are used which have less than 8 relays (f. ex. zone outputs), 8 relays have to be calculated for each module. The relays not used in a group of eighth have to be set out of function "OFF".



**RELAY r Mode: mmmm**

Enter a relay number **r** and the requested operation mode **OFF, M, Z, S** and **N, H, T**

- OFF** Relay out of function or not existing
- SNHT** **S** = sensor relays (only controlled by the sensor alarm)
- ZNHT** **Z** = zone relays (only controlled by assigned zone)
- CNHT** **C**= collective alarm relays (collective alarm from several zones, see SA)

**N**=negated relay, pick-up with disconnected alarm

**H**=resetable relay (horn relay) via Reset Key (T2)

**T**=clocked relay (warning light, seconds rythm)

**Alarm: a SZC: s/z/c**  
 Enter the alarm stage **a**, from which the relay is to switch and the sensor, zone, or collective alarm number **s/z/c**, to which the relay is to belong to.



**SAMMELALARME (COLLECTIVE ALARMS) -->**  
[Collecting of zone alarms to collective alarms](#)



**ZONE: Z CA-GRP: G**  
**->CA: S1/5 S2/6 S3/7 S4/8**

Enter a zone **Z** and the collective alarm group **G**.  
 Enter up to 8 collective alarms / zone  
 (It is displayed in 2 groups to 4 collective alarms)

The alarms of the zone **Z** release the collective alarms **CA**.

A zone means a number of sensors assigned to the same zone. Any of these sensors can release the zone alarm.

The maximum number of the possible zones corresponds to the number of sensors connected to the device. The number of the possible collective alarms results from the number of zones made up due to the assignment of sensors to zones.



### INDICATOR PANEL: --> Set operation mode of the LCD and LED displays



#### n Display

Number of the LCD displays (1...4) used (with adjustment 1 the data from 4- or 8 measuring points are indicated simultaneously)



#### LED operation mode:

Operation mode of the LED groups (L3)  
Measuring point alarms The LEDs indicate the alarms of the individual measuring points  
Zone alarms The alarms of the individual measuring zones are indicated  
Collective alarms The released collective alarms are indicated



### TEXT --> Processing of texts



#### DEVICE NUMBER:

A nnn KW JJ  
Reading out of company device number  
A=evaluation device, nnn=serial number  
KW=calencer week of manufacturing,  
JJ=year of manufacturing



#### GAS TYPES:

3. CO  
Input or modification of identificaton code (4 characters) for gas type description (maximum of up to 32) f. ex. CO for carbon monoxide, NO2 for nitrogen dioxide and so on.



### TEST GAS ADJUSTMENT: --> Calibration of individual measuring point with test gas (Not for sensors with logarithmic characteristic line)



SEN: m TC: 0 ppm  
/\_ 5.60mA + 30 ppm

Enter the measuring point m and the test gas concentration to set. It can be calibrated to zero gas (TC=0) or to a test gas (TC>0).

Indication of the present measuring current and measuring value with sign +/- for exact zero point calibration.

If the cursor is moved to the underlined position \_ and the Menu Key (T6), is pressed a "software adjustment" can be executed:

#### ADJUSTMENT to TC?

The current measuring value can be set to the test gas concentration introduced.  
(PK=0 => zero point, PK>0 => measuring curve value)  
The new measuring area for the signal area 4-20mA is calculated automatically.

**(ADJUSTMENT to MAX ?** The current measuring value can be adjusted to the stored maximum values, if, before, during a tour test agents with a concentration exceeding swtching threshold 1, at least, have been put on the measuring points, so that a maximum value is produced. The respective measured maximum value is indicated in the display and can be checked for plausibility.

High concentrations are ideal, which normally do not occur, as switching threshold 1 is exceeded after test agents feeding. The maximum value of the test agent feeding exceeds once again due to another reason, because a new maximal value ist created which can be used and therefore it is recognised as being not plausible. )

The new measuring area for the signal area 4-20mA is calculated automatically.

#### ADJUSTMENT to BMR ?

The measuring area on the measuring point is adjusted to the entered basic measuring area in the menu "Sensor". Through this, the software adjustment is deleted. Calibrated sensors have to be used on this measuring point.



#### SENSOR m

M range 300 ppm

Verification of the modified measuring range through adjustment.

If the value is more than 30% from the desired measuring range, the adjustment on GMB and the sensor is to renew.



### COLD START

0 min Immediate operation with possible alarm release on the installation of the sensor supply.

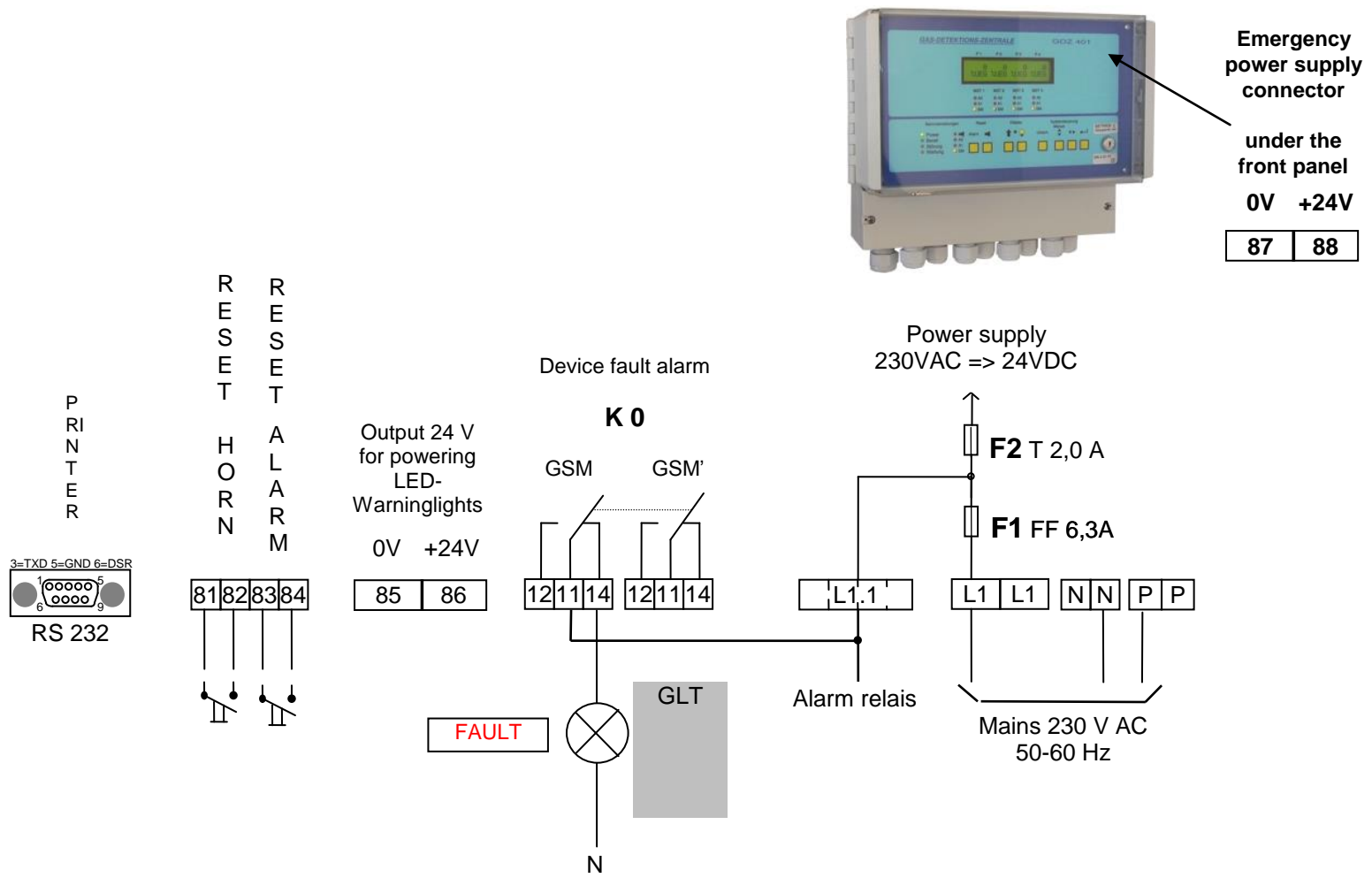
1 min Activation of the cold start routine with 1 minute of alarm suppression. Especially required, if heated sensors are connected.



### MODBUS

ON enables MODBUS RTU at an optional connector  
OFF disables MODBUS RTU output

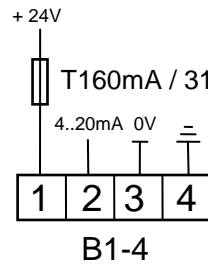
# Terminal connecting plan: Power, Emergency power, Reset, Printer



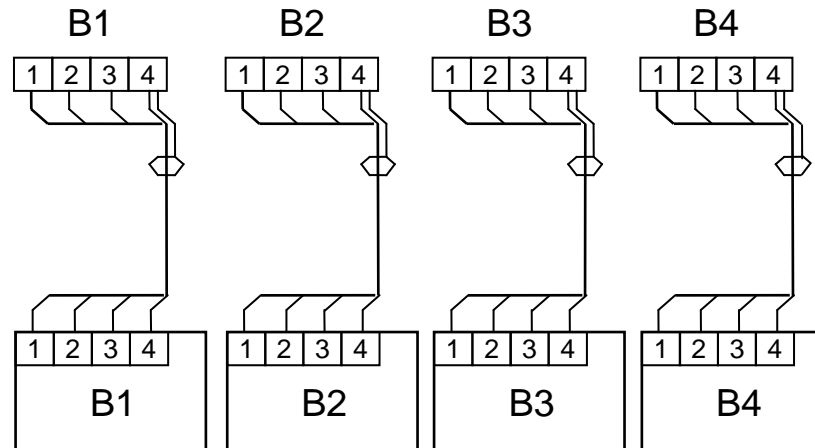
Emergency power supply connector  
 under the front panel  
 0V +24V  

87	88
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## Terminal connecting plan: Sensor heads 1...4



### Sensor terminal



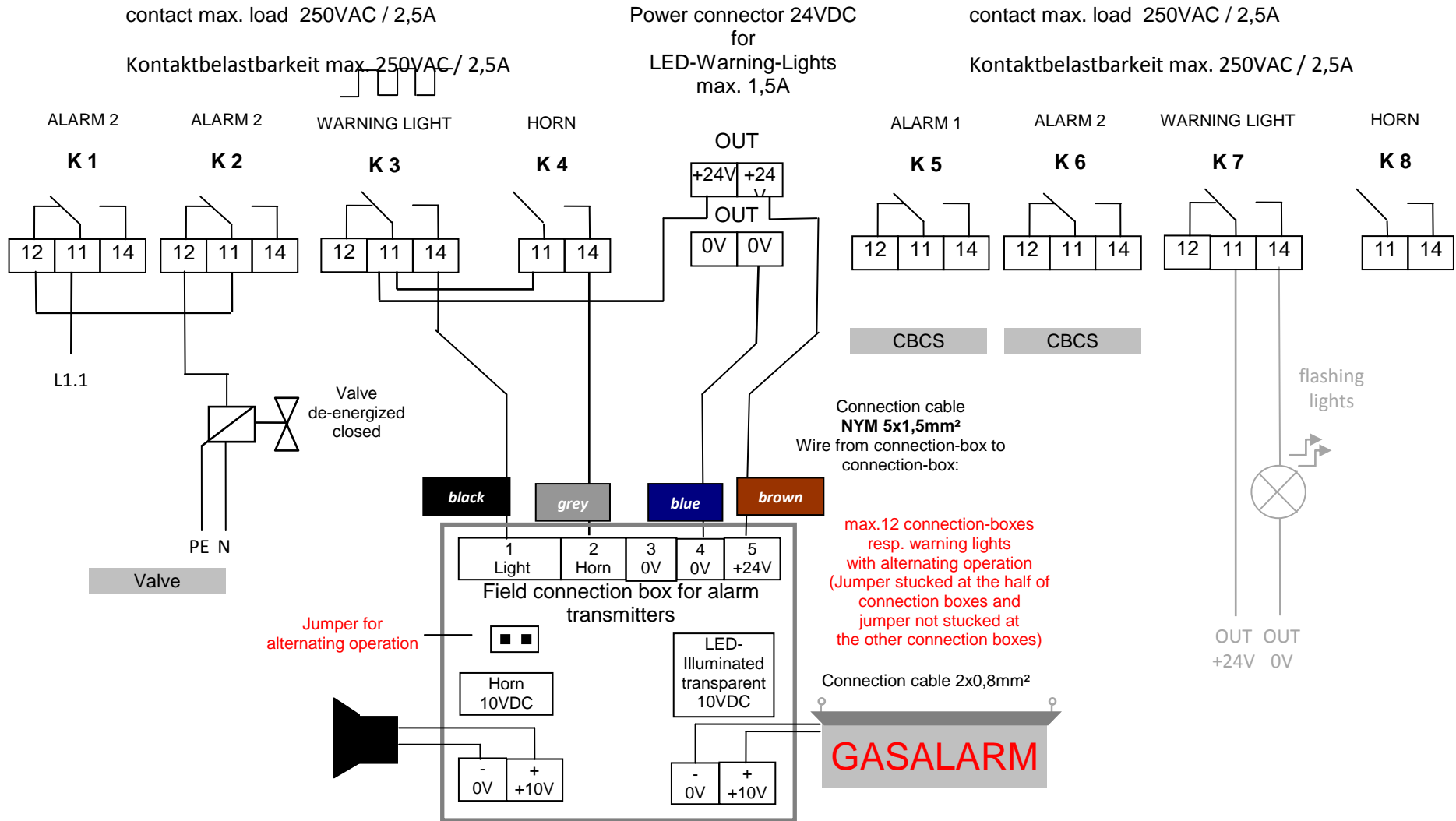
### SENSOR 1..4



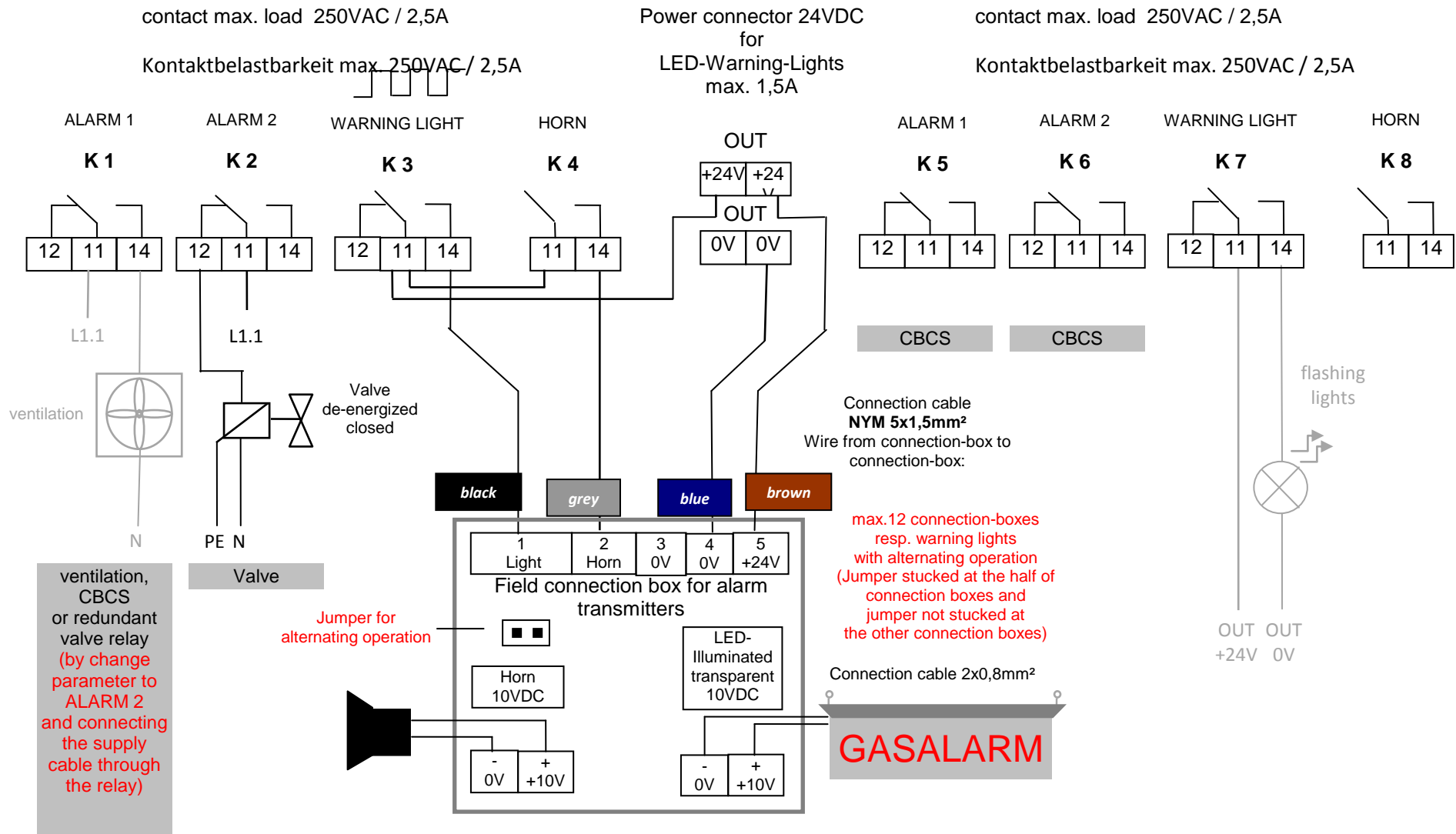
Connection cable (none-Ex-area)  
up to 600m: JY(St)Y 2x2x0,8

**Sensor connection: Observe absolutely sensor operation instructions!**

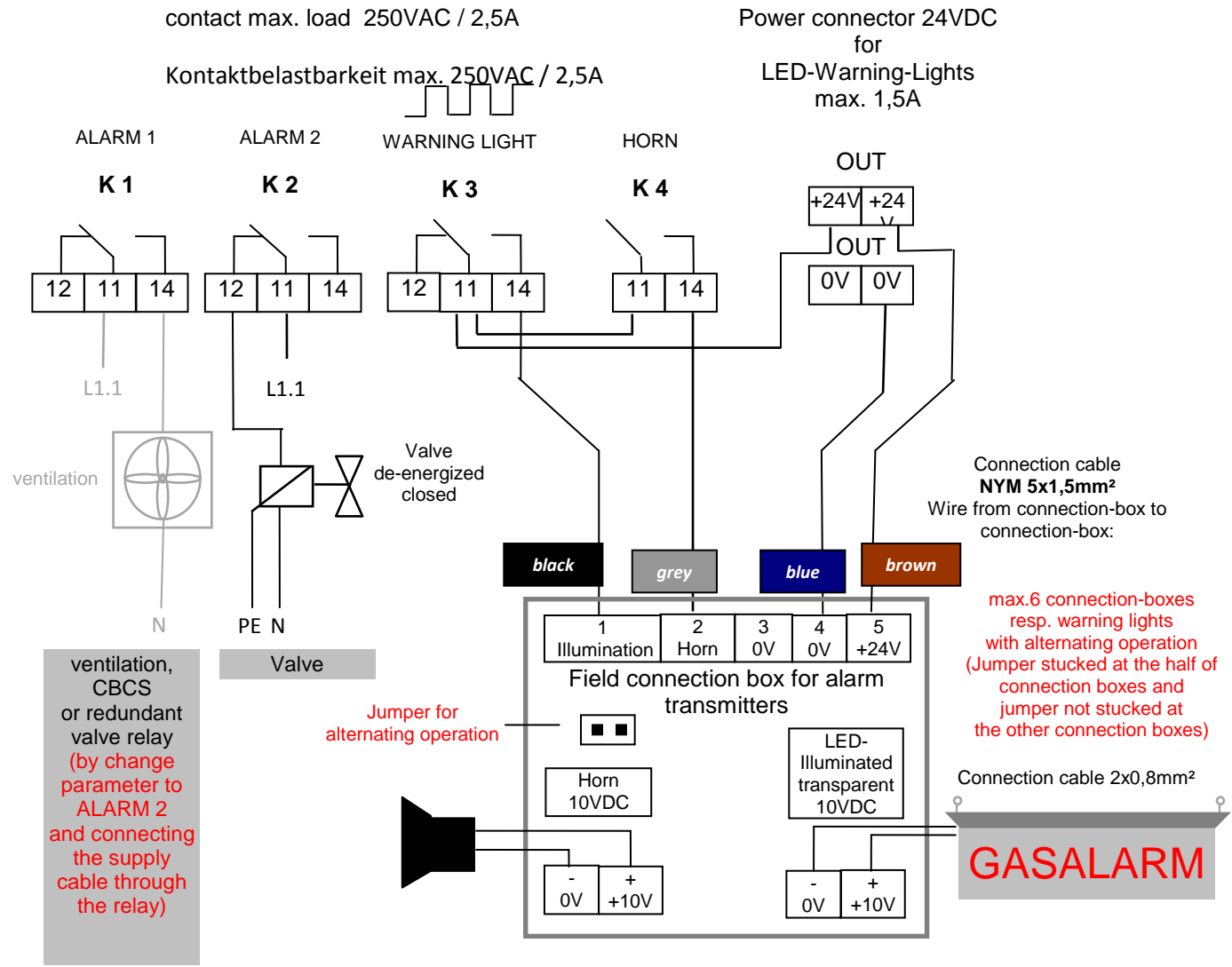
## RELAY OUTPUTS (collective alarm with redundant valve relay)



# RELAY OUTPUTS (collective alarm)

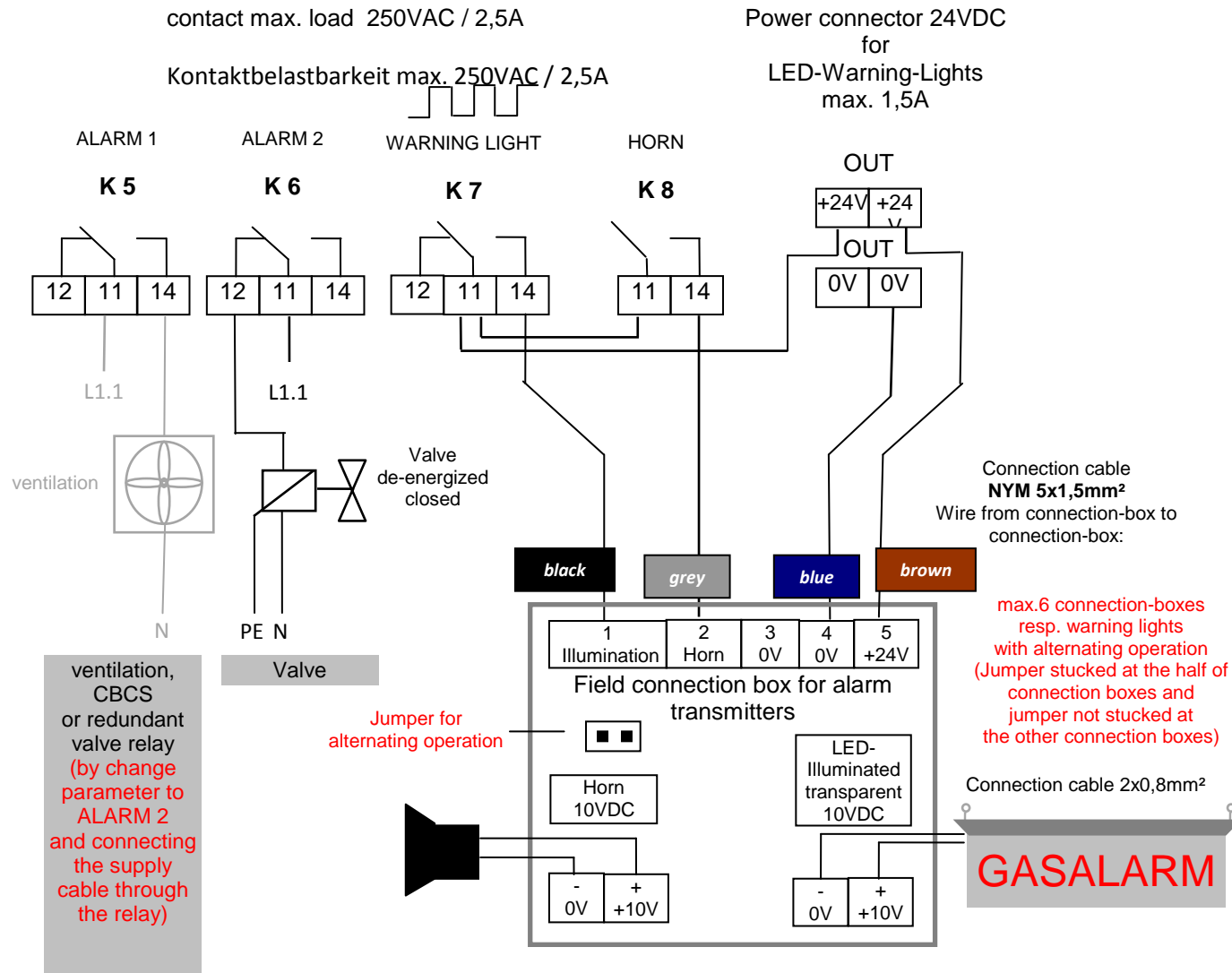


# RELAY OUTPUTS K1..K4 (Zone 1 alarm output)





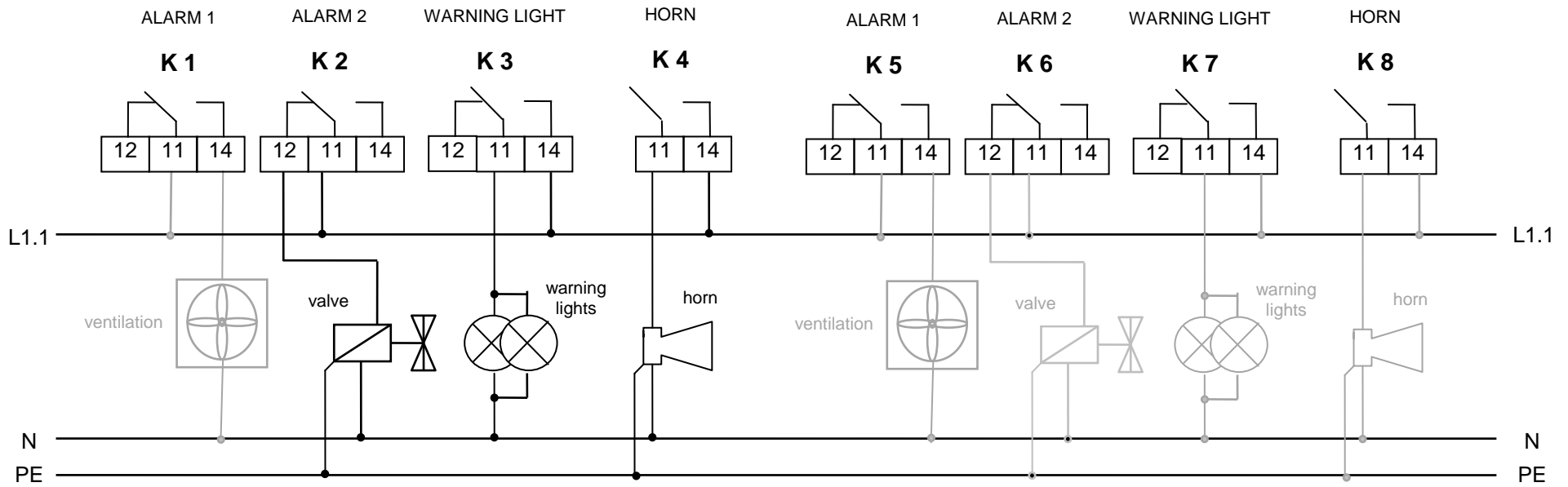
## RELAY OUTPUTS K5..K8 (Zone 2 alarm output)



# Terminal connection diagram: RELAY OUTPUTS with alarm transmitters 230VAC

max. contact load 250VAC / 2,5A

K5..K8 Connection for CBCS status signals  
or alternative alarm outputs for a second alarm zone  
(Parameter adaption ist o be done !)



ventilation,  
CBCS  
or redundant  
valve relay  
(by change  
parameter to  
ALARM 2  
and connecting  
the supply  
cable through  
the relay)

Valve Warning Light Horn

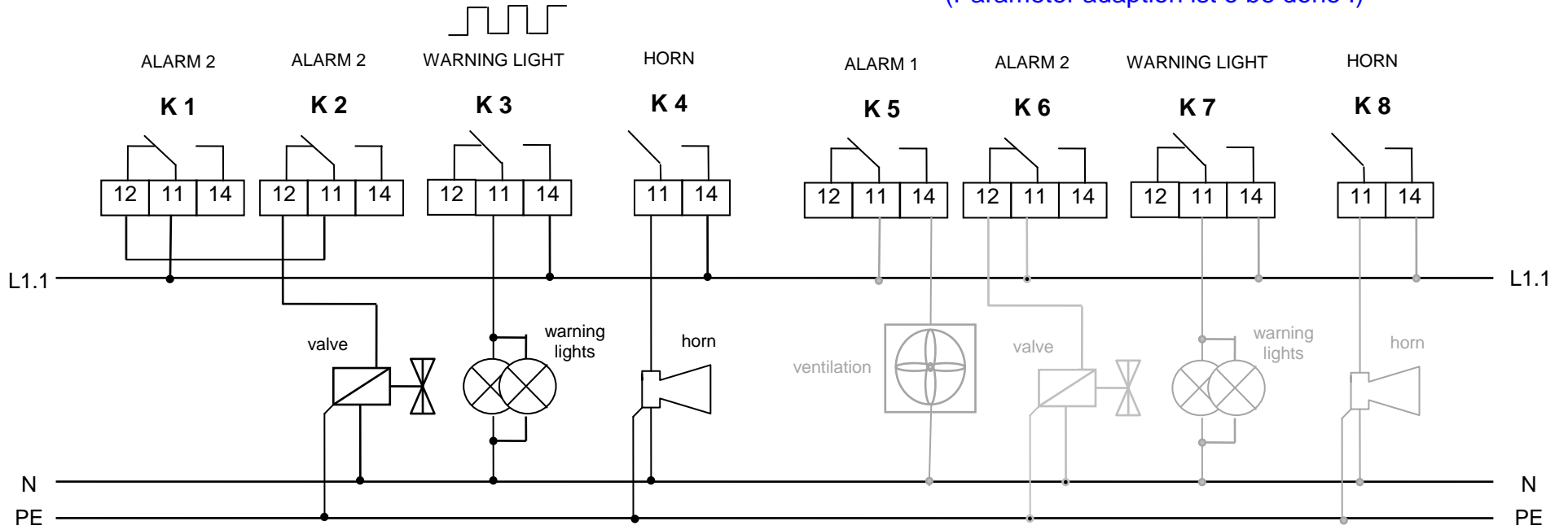
ventilation,  
CBCS  
or redundant  
valve relay  
(by change  
parameter to  
ALARM 2  
and connecting  
the supply  
cable through  
the relay)

Valve, CBCS Warning Light Horn

# Terminal connection diagram: RELAY OUTPUTS with alarm transmitters 230VAC and redundant valve relay

max. contact load 250VAC / 2,5A

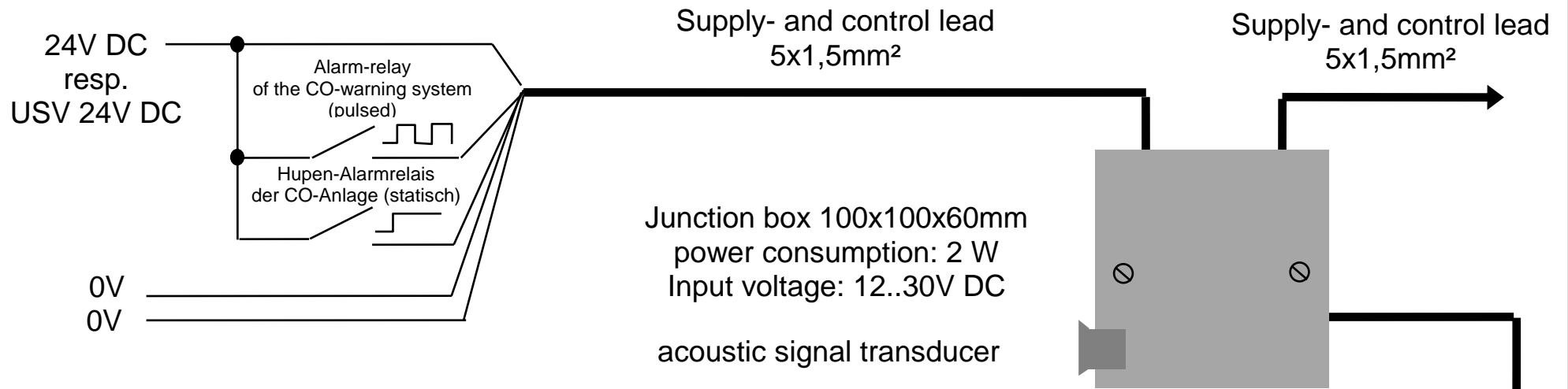
K5..K8 Connection for CBCS status signals  
or alternative alarm outputs for a second alarm zone  
(Parameter adaption ist o be done !)



ventilation,  
CBCS  
or redundant  
valve relay  
(by change  
parameter to  
ALARM 2  
and connecting  
the supply  
cable through  
the relay)

ventilation,  
CBCS  
or redundant  
valve relay  
(by change  
parameter to  
ALARM 2  
and connecting  
the supply  
cable through  
the relay)

**Wiring diagram LED-illuminated warning transparent LT- GA**



power consumption of a quantity of transparents is halved,  
when jumper for alternating operation in every second junction box is stucked  
because every second transparent lights up

modern LED-illuminated  
warning transparent,  
Inscription „GASALARM“  
LxBxH:  
300 x 185 x 20 mm

**GASALARM**

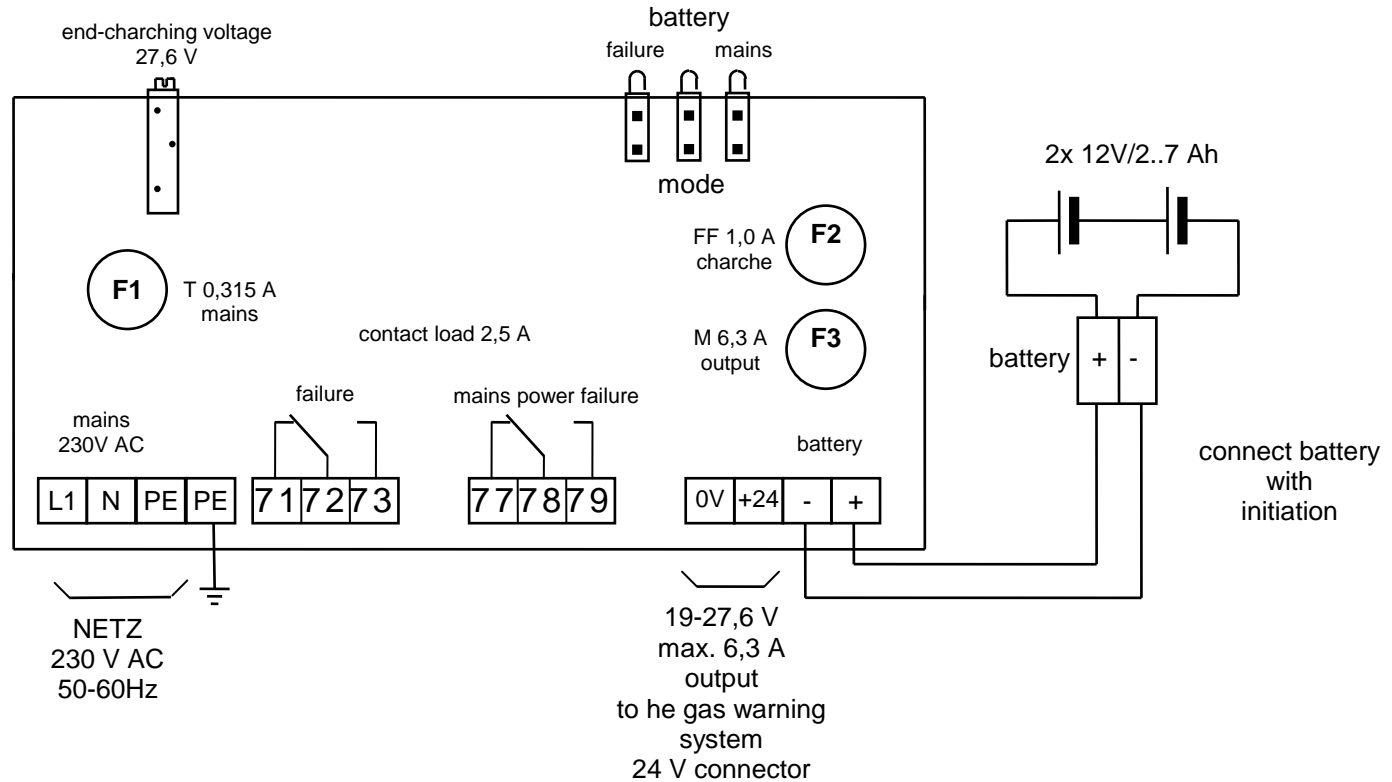
**Emergency power supply in case of mains failure : NSP-Z-L wall mounted housing to supply Gaz203 .. GDZ801 centrals**

Housing dimensions:  
B x H x T 300 x 260 x 90 mm  
over all



**Connecting diagram: Emergency power supply NSP-B-L for switch boards and NSP-Z-L (wall mounted housing)**

**Supply voltage: 230V AC**  
**Output: 24V DC / 6,3A / 2..7 Ah**



Capacity:	2..7 Ah depending on the battery capacity connected
Output current:	6,3 A max.
Charging current:	0,5 A max.
Deep discharge protection:	yes
Housing NSP-Z-L:	steel plate housing WxBxT 300x200x80(120)mm Rittal KL 1517(H=80mm) bzw. 1503(H=120mm)
Application:	Emergency power supply under mains power failure