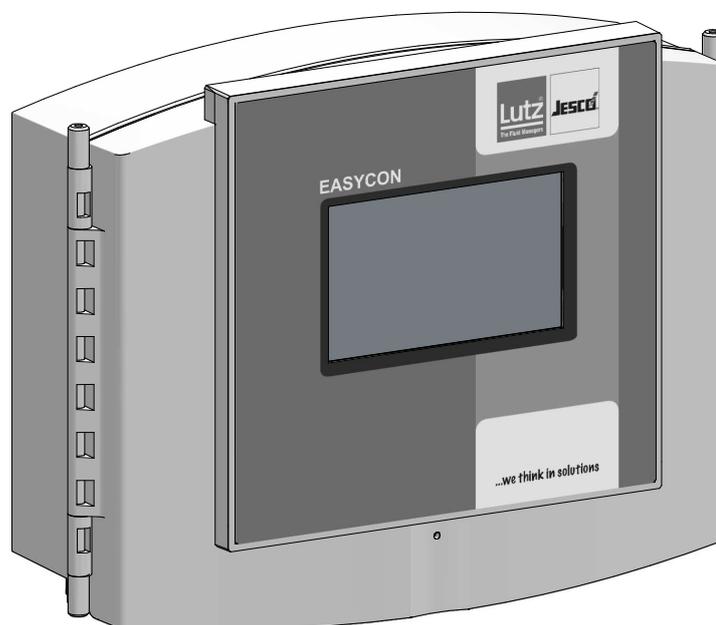


Gas warning device
EASYCON GW
Operating instructions



Read the operating manual!

The user is responsible for installation and operation related mistakes!

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1 Notes for the Reader

This operating manual contains information and behaviour rules for the safe and designated operation of the device.

Observe the following principles:

- Read the entire operating manual prior to starting-up the device.
- Ensure that everyone who works with or on the device has read the operating manual and follows it.
- Maintain the operating manual throughout the service life of the device.
- Pass the operating manual on to any subsequent owner of the device.

1.1 General non-discrimination

In this operating manual, only the male gender is used where grammar allows gender allocation. The purpose of this is to make the text easy to read. Men and women are always referred to equally. We would like to ask female readers for understanding of this text simplification.

1.2 Explanation of the signal words

Different signal words in combination with warning signs are used in this operating manual. Signal words illustrate the gravity of possible injuries if the risk is ignored:

Signal word	Meaning
DANGER	Refers to imminent danger. Ignoring this sign may lead to death or the most serious injuries.
WARNING	Refers to a potentially hazardous situation. Failure to follow this instruction may lead to death or severe injuries.
CAUTION	Refers to a potentially hazardous situation. Failure to follow this instruction may lead to minor injury or damage to property.
<i>NOTE</i>	Refers to a danger which, if ignored, may lead to risk to the machine and its function.

Table 1: Explanation of the signal words

1.3 Explanation of the warning signs

Warning signs represent the type and source of a danger:

Warning sign	Type of danger
	General danger
	Danger from electrical voltage
	Danger from poisonous substances
	Danger of damage to machine or functional influences

Table 2: Explanation of the warning signs

1.4 Identification of warnings

Warnings are intended to help you recognise risks and avoid negative consequences.

This is how warnings are identified:

Warning sign	SIGNAL WORD
Description of danger.	
Consequences if ignored.	
⇒ The arrow signals a safety precaution to be taken to eliminate the danger.	

1.5 Identification of action instructions

This is how pre-conditions for action are identified:

- ✓ Pre-condition for action which must be met before taking action.
- ✘ A resource such as a tool or auxiliary materials required to perform the operating instructions.

This is how instructions for action are identified:

- ➔ Separate step with no follow-up action.
- 1. First step in a series of steps.
- 2. Second step in a series of steps.
 - ▶ Result of the above action.
- ✓ **Action completed, aim achieved.**

2 Safety

2.1 General warnings

The following warnings are intended to help you eliminate the dangers that can arise while handling the device. Risk prevention measures always apply regardless of any specific action.

Safety instructions warning against risks arising from specific activities or situations can be found in the respective sub-chapters.

	DANGER
Mortal danger from electric shock!	
Wrongly connected or located cables or damaged ones can injure you.	
⇒ Replace damaged cables without delay.	
⇒ Do not use extension cables.	
⇒ Do not bury cables.	
⇒ Secure cables to avoid being damaged by other equipment.	

	CAUTION
Increased risk of accidents due to insufficient qualification of personnel!	
The device may only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.	
⇒ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.	
⇒ Prevent access to the system for unauthorised persons.	

	NOTE
Do not dispose of the device in the domestic waste!	
Do not dispose of electric devices via the domestic waste.	
⇒ The device and its packaging must be disposed of in accordance with locally-valid laws and regulations.	
⇒ Dispose of different materials separately and ensure that they are recycled.	

2.2 Hazards due to non-compliance with the safety instructions

Failure to follow the safety instructions may endanger not only persons, but also the environment and the device.

The specific consequences can be:

- Failure of major unit and system functions,
- failure of required maintenance and repair methods,
- danger for individuals through dangerous dosing media,
- danger to the environment caused by chlorine leaking from the system.

2.3 Working in a safety-conscious manner

Besides the safety instructions specified in this operating manual, further safety rules apply and must be followed:

- accident prevention regulations
- safety and operating provisions,
- safety regulations on handling hazardous substances,
- environmental protection provisions,
- applicable standards and legislation.

2.4 Personnel qualification

Any personnel who work on the device must have appropriate special knowledge and skills.

Anybody who works on the device must meet the conditions below:

- attendance at all the training courses offered by the owner,
- personal suitability for the respective activity,
- sufficient qualification for the respective activity,
- training in how to handle the device,
- knowledge of safety equipment and the way this equipment functions,
- knowledge of this operating manual, particularly of safety instructions and sections relevant for the activity,
- knowledge of fundamental regulations regarding health and safety and accident prevention.

All persons must generally have the following minimum qualification:

- training as specialists to carry out work on the device unsupervised,
- sufficient training that they can work on the device under the supervision and guidance of a trained specialist.

These operating instructions differentiate between these user groups:

2.4.1 Specialist staff

Thanks to their professional training, knowledge, experience and knowledge of the relevant specifications, specialist staff are able to perform the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

2.4.2 Trained electricians

Due to their professional training, knowledge and experience as well as knowledge of specific standards and provisions, trained electricians are able to do the electrical work assigned to them and to recognise and avoid any potential dangers by themselves.

They are specially trained for their specific working environment and are familiar with relevant standards and provisions.

They must comply with the legally binding regulations on accident prevention.

2.4.3 Trained persons

Trained persons have received training from the operator about the tasks they are to perform and about the dangers stemming from improper behaviour.

Trained persons have attended all trainings offered by the operator.

2.4.4 Personnel tasks

In the table below you can check what qualifications are the pre-condition for the respective tasks. Only people with appropriate qualifications are allowed to perform these tasks!

Qualification	Activities
Specialist staff	<ul style="list-style-type: none"> ■ Transportation ■ Mechanical installation ■ Commissioning ■ Taking out of operation ■ Fault rectification ■ Maintenance ■ Repairs ■ Disposal
Trained electricians	<ul style="list-style-type: none"> ■ Electrical installation
Trained persons	<ul style="list-style-type: none"> ■ Control

Table 3: Personnel qualification

3 Intended use

3.1 Notes on product warranty

Any non-designated use of the device can impair its function and the protection provided. This leads to invalidation of any warranty claims!

Please note that liability is on the side of the user in the following cases:

- The device is operated in a manner which is not consistent with these operating instructions, particularly safety instructions, handling instructions and the section "Intended Use".
- Information on usage and environment (see section 5 "Technical data" on page 10) is not adhered to.
- If people operate the device who are not adequately qualified to carry out their respective activities.
- Unauthorised changes are made to the device.

3.2 Intended purpose

As a safety device, the gas warning device detects dangerous gases in the surrounding air. Should limit values be exceeded, the device will notify the signal technology such as signal lamps or signal bugles, which will notify a danger.

3.3 Foreseeable misuse

The following section provides information regarding the device applications which are classified as non-intended use. This section is intended to allow you to detect possible misuse in advance and to avoid it.

Foreseeable misuse is assigned to the individual stages of the product lifetime:

3.3.1 Incorrect assembly

- Connecting the mains voltage without a protective earth.
- Non-fused or non-standard mains voltage.
- Not possible to immediately or easily disconnect the power supply.
- Wrong connecting cables for mains voltage.
- Acoustic and optical signal generators connected to the incorrect clamps or incorrectly configured.
- Protective earth removed.

3.3.2 Incorrect start-up

- Commissioning with damaged or obsolete sensors.
- Commissioning without the establishment of all protective measures, fastenings etc.

3.3.3 Incorrect operation

- Protective equipment not functioning correctly or dismantled.
- Unauthorised modification of the gas warning unit.
- Ignoring of alarm or error messages.
- The elimination of alarm or error messages by insufficiently-qualified personnel.
- Bridging the external fuse.
- Difficult operation due to insufficient lighting or poor access to the device.
- Operation not possible due to dirty or illegible display.

3.3.4 Incorrect maintenance

- Carrying out maintenance during ongoing operation.
- No adequate or regular inspection of correct functioning.
- No replacement of damaged parts or cables.
- No securing against reactivation during maintenance work.
- Use of the wrong spare parts.

4 Product description

4.1 Scope of delivery

Please compare the delivery note with the scope of delivery. The following items are part of the scope of delivery:

- Gas warning device
- Up to 4 sensors
- Operating instructions

4.2 Design and function

4.2.1 Installation example

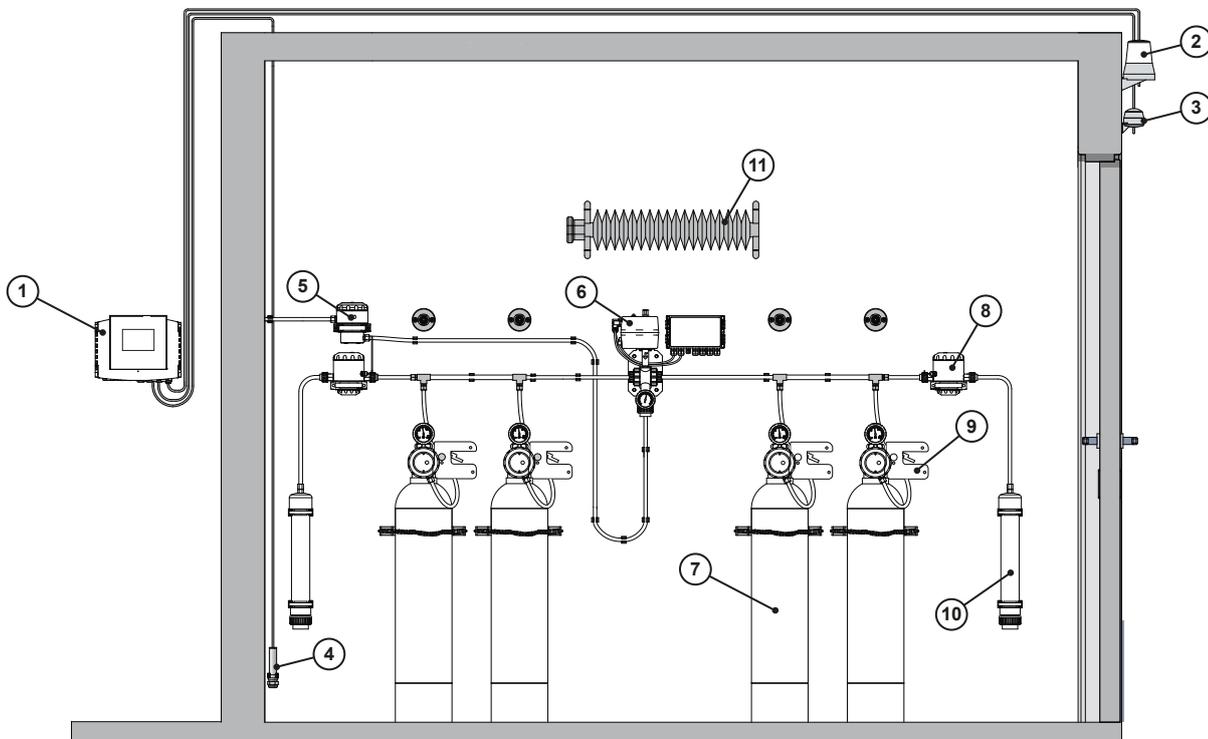


Fig. 1: Simple example installation of a chlorine gas room

Position	Description
1	EASYCON GW gas warning device
2	Signal lamp
3	Alarm horn
4	Gas sensor
5	Safety shutoff valve
6	Changeover switch

Position	Description
7	Chlorine tank
8	Safety blow-off valve
9	ChlorStop valve
10	Activated carbon cartridge
11	Heater

Table 4: Simple example installation of a chlorine gas room

4.2.2 Main view

The main menu view will appear upon the start of the device or 5 minutes after the last input. The main view shows the current values from up to four sensors and further information.

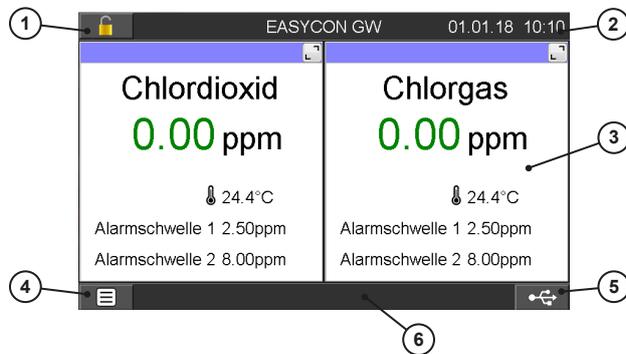


Fig. 2: Main view with two sensors

No.	Function
1	Login / password settings
2	Date / time
3	Values / limit values
4	Main menu
5	File Browser
6	Status row for messages

Table 5: Components

4.2.3 Functions of the device

The stationary device monitors the surrounding air using sensors which can detect various gases such as chlorine-gas, chlorine dioxide or ozone. They can also measure the room temperature.

If the sensors notify too high a value, the device will issue an alarm and the connected safety devices such as a signal bugle or sprinkler installation can activate.

4.3 Rating plate

There is information on the equipment about safety or the product's way of functioning. The information must stay legible for the duration of the service life of the product.

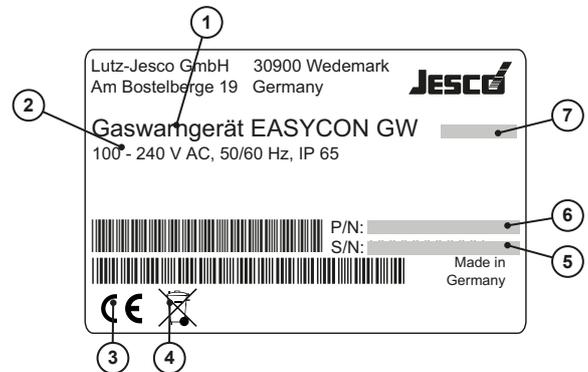


Fig. 3: Rating plate EASYCON GW

No.	Description
1	Product name
2	Electrical specifications / protection class
3	Label showing conformity with applicable European directives
4	WEEE label
5	Serial number
6	Part number
7	Month / year of manufacture

Table 6: Rating plate

5 Technical data

5.1 EASYCON GW

Information	Value
Voltage supply	100 - 240 V AC, 50 / 60 Hz
Power consumption	max. 20 W
Housing dimensions	302 x 240 x 107 mm
Temperature sensor	-10 ... +100 °C
Load capacity of the relay	230 V AC, 5 A (ohmic resistive load)
Load capacity of the optocoupler	80 V DC, 5 mA
Load capacity of the bugle relay	250 V AC, 10 A (ohmic resistive load)
Analogue outputs	0/4 - 20 mA, max. load 500 ohms
Interfaces	Ethernet Modbus TCP/IP
Protection class	IP 65
Ambient temperature	-5 ... +45 °C
Air humidity	max. 95 %, non condensing

Table 7: Technical data

5.2 Sensors

Information	Value		
Measuring gas	Chlorine (Cl ₂)	Chlorine dioxide (ClO ₂)	Ozone (O ₃)
Measuring range	0 - 10 ppm	0 - 1 ppm	0 - 1 ppm
Reaction time	approx. 30 s		
Dimensions	135 x Ø 33 mm		
Housing material	PVC		
Protection class	IP 54		
Weight	approx. 0.2 kg		
Ambient temperature	-10 ... +40 °C		
Air humidity	max. 90 %, non condensing		
Service life	max. 2 years, depending on the operating conditions		

Table 8: Technical data

6 Dimensions

All dimensions in millimetres (mm).

6.1 Outside dimensions

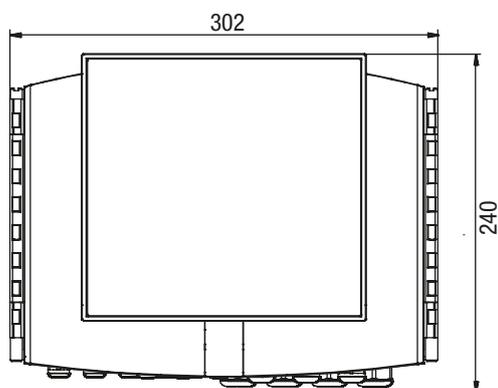


Fig. 4: Outside dimensions

6.2 Drillhole dimensions

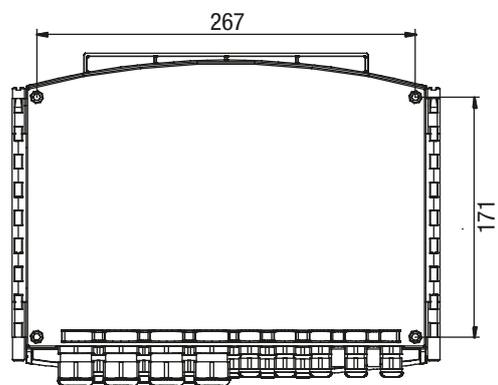


Fig. 5: Dimensions for wall mounting

7 Installation



DANGER

Mortal danger from electric shock!

Improperly installed or damaged components in the electronics installation can cause injury.

- ⇒ Ensure that all work on the electrical installation is performed by a qualified electrician.
- ⇒ Ensure that all work on the electrical installation is performed in a de-energised state.
- ⇒ Ensure that the power supply is secured with a fault current protective circuit.
- ⇒ Replace damaged cables or components without delay.

7.1 Principles

Make sure that the installation location complies with the following requirements:

- The display is easily accessible and is visible.
- Plan to leave min. 20 cm free space for the installation of the cable underneath the device. You must be able to install the cable without kinking or damage.
- Mount the sensors 30 cm above the ground.
- Compliance with the permissible ambient temperatures (see section 5 "Technical data" on page 10).

7.2 Installation on the wall

Resources required:

- ✂ Assembly kit
- ✂ Drill
- ✂ Slotted screwdriver

Perform the following steps:

1. Drill the four drillholes for wall mounting. The exact dimensions are stated in section 6 "Dimensions" on page 11.
 2. Unscrew the screw on the right-hand side of the device and pull out the rod.
 - ▶ You can now open the device.
 3. Open the device and use the screws for wall mounting. Ensure that the device is secured to the wall.
 4. Close the device again using the rod.
- ✓ **The device is fitted on the wall.**

7.3 Electrical installation

The voltage supply to your device can now be performed via a normal Schuko plug or a control cabinet. Perform the specifications of this section for devices without a pre-fitted Schuko plug.

Precondition for action:

- ✓ The device was installed in accordance with section 7.2 Installation on the wall.
- ✓ A voltage supply with 100 - 240 V AC (50 / 60 Hz) is available.
- ✓ The voltage supply is deactivated before the start and secured against reactivation.
- ✓ The housing is open.

Resources required:

- ✂ Schuko plug
- ✂ Wire end sleeves 0.75 - 2.5 mm²

1. Fit wire end sleeve to the cable ends if the supply cable does not have them.
2. Open the device housing.
3. Lead the supply cable through a cable screw connection to the underside of the device.
4. Turn the cable screw connection union nut until the line is fixed in the screw connection so that the screw connection performs strain relief. Ensure that the feed cable is installed loosely.
5. Connect the voltage supply to the clamps 44 - 52. Observe the division into protective earth (PE), neutral conductor (N) and the phase (L) on the circuit board.

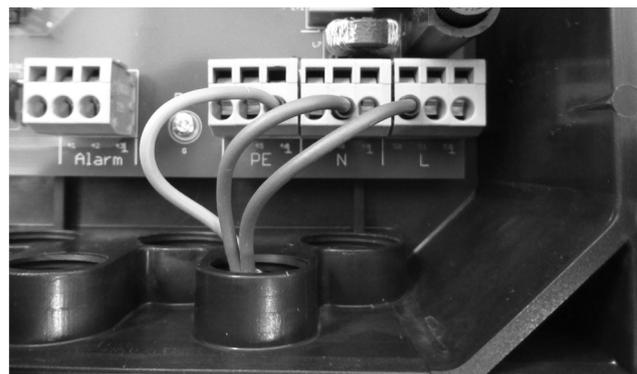


Fig. 6: Connected voltage supply

- ✓ **Electrically installation**



Only 3 of 9 clamps are required for connection of the voltage supply. You can use the free clamps to supply further devices with voltage.

The contact load rating amounts to max. 4 A.

7.4 Terminal connection

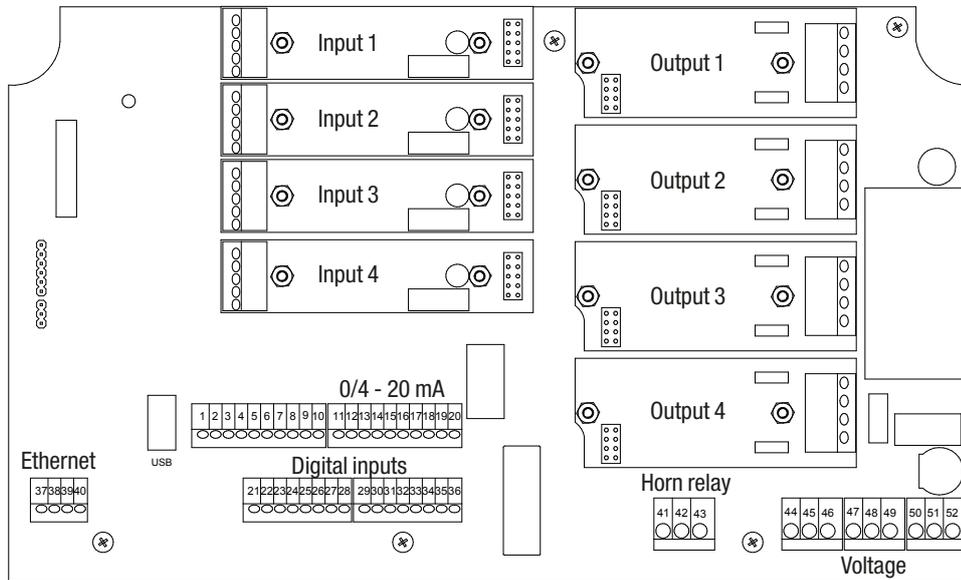


Fig. 7: Overview of the connection clamps.

Terminal	Function		Description
1 - 12	Not wired		
13	Analogue output 1	+	0/4 - 20 mA, max. working resistance 500 Ω
14		-	
15	Analogue output 2	+	
16		-	
17	Analogue output 3	+	
18		-	
19	Analogue output 4	+	
20		-	
21 - 36	Digital inputs 1 - 8		Freely-configurable
37 - 40	Ethernet connection		
41 - 43	Horn relay		Clamps 41 + 42 normal off Clamps 42 + 43 normal on
44 - 46	Connection supply voltage		Protective earth (PE)
47 - 49			Neutral line (N)
50 - 52			Phase (L)

Table 9: Terminal connection



When performing the clamp connection of the input circuit board and the connection of the sensors, comply with the specifications of section 7.5 on page 14.

When performing the clamp connection of the output circuit board and the connection of the signal technology, comply with the specifications of section 7.6 on page 15.

7.5 Connecting the sensor

You can connect up to four sensors to the gas warning system. You can also connect a PT 100 temperature sensor to every input circuit board to monitor the room temperature.

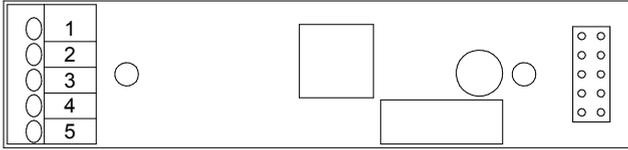


Fig. 8: Input circuit board

Terminal	Function	Description
1	Temperature input	PT100
2	Temperature input	
3	Measuring electrode	GN (green)
4	Counter electrode	WH (white)
5	Reference electrode	BN (brown)

Table 10: Clamp connection of the input circuit board

Precondition for action:

- ✓ The voltage supply has been disconnected and protected against re-connection.
- ✓ The housing is open.

Resources required:

- ✂ Sensors
- ✂ Suction connection
- ✂ Pipe clip
- ✂ Wire end sleeves 0.25 mm²

Perform the following steps:

1. Screw the pipe clip to the wall 30 cm above the floor.
2. Fix the sensor in the pipe clip. The sensor opening must point downwards.
3. Connect the connecting cable to the wall and lead it to the device.

NOTE

Electronic distortion of the measurement results.

Incorrect installation of the electrical cables can distort the measurement results. As a result, the control of connected devices can be faulty.

- ⇒ Do not route the connecting cable parallel to the mains and control connections, and always with a clearance of at least 15 cm. Lay connection junctions at an angle of 90°.
- ⇒ Use a max. 50 m signal cable.

4. Shorten the connecting cable to the required length. Apply a wire end sleeve to the end of every wire.

5. Open the device housing and lead the cable into the inside of the housing through one of the cable screw connections on the underside of the housing.
6. Connect the three coloured wires onto the input circuit board clamp block. Comply with Table 10 “Clamp connection of the input circuit board” on page 14.

This is a standard cable, the shield of which can function as a fourth wire. The cable shield, however, is not connected. Shorten the shield to the cable insulation or pinch it off.

✓ **Sensor connection completed.**

Testing the sensor functionality

You can check the electrical connection and the functionality of the connected sensors.

Precondition for action:

- ✓ The installation has been completed in accordance with section 7 “Installation” on page 12.
- ✓ The device is activated.

Perform the following steps:

1. In the main menu under System > Inputs, navigate to the “Sensors” tab.
2. Select “Sensor 1” and press the “Test” button. “Sensor test” will be displayed for a short time.
 - ▶ The device checks whether the selected sensor has been connected correctly.
3. Repeat step 2 for all sensors. If the sensor test has not been successful, the “Sensor error” alarm will be displayed. In this case, check the sensor connecting cable and whether the sensor has been inserted in the sensor bracket completely.
4. Test the functionality of the sensors and actors (e.g. signal lamps and signal bugles) with test gas. Comply with the specifications of the test gas operating instructions. The display must show an increase of the gas concentration. Given correspondingly set limit values, it must also trigger actors (such as the signal bugle).

✓ **Functionality tested.**

Always inform the connected stations and departments before triggering a test alarm.

7.6 Connecting the signal technology

Depending on the equipment of the device, you have up to three different methods with which to connect signal technology to the gas warning device and to control and supply it with current.

This section describes the bugle relay, the relay output circuit board and the optocoupler output circuit board.

Precondition for action:

- ✓ The housing is open.
- ✓ The voltage supply has been disconnected and protected against re-connection.

Resources required:

- ✘ Signal technology

7.6.1 Horn relay

You can connect an individual signal bugle to the bugle relay (clamps 41 - 43) and control it. If a signal bugle is connected to the bugle relay, the alarm message must be confirmed directly on the device. The bugle relay is especially suited for an alarm at the first limit value.

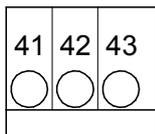


Fig. 9: Horn relay

Terminal	Function	Description
41 + 42	normal off	The relay works on these clamps as a closer.
42 + 43	normal on	The relay works on these clamps as an opener.

Table 11: Bugle relay clamp connection

Perform the following steps:

1. Fit the signal bugle.
2. Lead the connecting cable through a cable screw connection to the underside of the device.
3. Connect the signal technology used either to clamps 41 and 42 (normal off) or 42 and 43 (normal on).
 - ▶ Note: You can adjust the action of the bugle relay in the output settings. Further information is available in section 8.2.2.1 "Bugle" on page 19.

- ✓ **Connection of the signal bugle complete.**

7.6.2 Output circuit board (relay)

You can control the signal technology (e.g. bugles or signal lamps) with the relay output circuit boards. To this end, the device can be fitted with up to four relay output circuit boards, which can be used for a pre-alarm and a master alarm respectively.

Application example: You can evaluate sensors in two different rooms using two relay output circuit boards.

Section 8.1 "First steps" on page 18 informs you how to set the limit values individually.

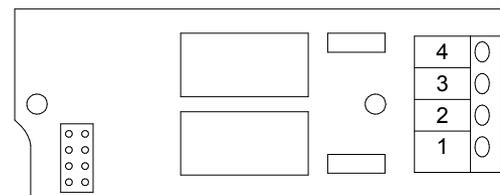


Fig. 10: Output circuit board (relay)

Terminal	Function	Description
1	Relay X.2	Main alarm (Limit value 2)
2		
3	Relay X.1	Pre-alarm (Limit value 1)
4		

Table 12: Clamp connection of the output circuit board (relay)

Perform the following steps:

1. Fit the signal technology.
2. Lead the connecting cable through one of the cable screw connections to the underside of the device.
3. Connect the signal device for the master alarm to the clamps 1 + 2.
4. Connect the signal device for the pre-alarm to the clamps 3 + 4.

- ✓ **Connection of the relay output circuit board completed.**

i Only the limit values 1 and 2 can be outputted from outputs 1 and 2.

Only outputs 3 and 4 are freely-configurable and can output further signals.

7.6.3 Output circuit board (optocoupler)

The output circuit boards can optionally be fitted with optocouplers. Optocoupler circuit boards serve the output of a digital signal, e.g. to a PLC or a superordinate control centre. The outputs can be freely-configurable and can relay alarms, the exceedance of limit values, sensor errors or the switching of digital inputs.



Fig. 11: Output circuit board (optocoupler)

Terminal	Function	Description	
1	+	Opto X.2	Freely-configurable (only at output 3 and 4)
2	-		
3	+	Opto X.1	Freely-configurable (only at output 3 and 4)
4	-		

Table 13: Clamp connection output circuit board (optocoupler)

Testing the signal technology

The device enables you to test the correct connection of the signal technology. The test simulates an alarm and the connected signal technology is activated.

Take the alarm chain into account before conducting the test and inform any connection points or interrupt the alarm chain for the period of the test.

Precondition for action:

- ✓ The signal technology was installed in accordance with section 7.6 "Connecting the signal technology" on page 15.
- ✓ The device housing cover is closed.
- ✓ The voltage supply has been established and the device has been switched on.

Instruction:

1. In the main menu, navigate to System > Outputs > Test.
 - ▶ You will now see all the outputs.
 2. Select the outputs that you would like to test.
 3. Press "Start".
 - ▶ The signal technology connected will now be activated as in the case of an alarm.
- ✓ **Signal technology tested.**

7.7 Digital inputs

You can use up to 8 digital inputs to evaluate switching statuses and to detect them as alarm message which are to be documented in the log-files.

Further information about the settings of the digital inputs can be found in section 8.2.1.3 "Digital" on page 18.

7.8 RC protection for relay

When connecting to the relay, note that inductive loads must be suppressed. If this is not possible, the relay contact on the device terminal must be protected by an RC protective circuit / interference suppression element.

If devices with inductive loads from a nominal current of 1 A are connected to a relay, the contacts in the relay may become bonded. Thus, the device will operate in an uncontrolled manner. To prevent bonding if the load circuit suffers a short-circuit, the relays must be protected separately on the maximum relay switching current.

Precondition for action:

- ✓ You would like to connect an inductive load to the relay.

Instruction:

1. Switch off the device.
 2. Clamp the interference suppression element parallel to the inductive load.
 3. Should it prove impossible to perform point 2, clamp the interference suppression element parallel to the relay output.
- ✓ **RC element clamped.**

7.9 Connecting Ethernet

You can use the Ethernet connection for the following actions:

- Reading/writing via Modbus TCP/IP protocol (PLC or Computer)
- Access via web browser
- Access via TFTP server

The device has a network input in the form of a M12x1 socket. Lutz-Jesco GmbH offers different lengths of special twisted-pair network cables to make the typical Ethernet RJ-45 plug connection. If you use third-party cables, choose a Category 3 cable with an impedance of 100 Ohm or above.

Pin	Assignments	Wire colours
1	TX-	yellow
2	TX+	orange
3	RX-	white
4	RX+	blue
-	Screen	-

Table 14: Ethernet connection socket

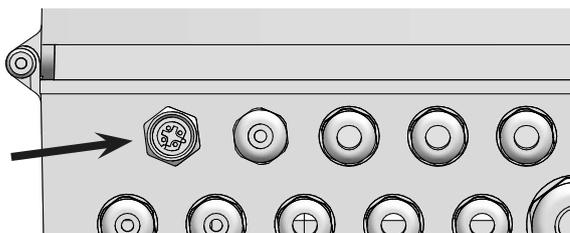


Fig. 12: Ethernet socket

Installing a wired network

During installation, comply with the following points:

- The Ethernet is cabled in a star topology. The maximum cable length is 100 m.
- You must route separately as a bundle the different categories of cables (e.g. power supply, data lines and sensitive lines for measuring purposes). In this connection, cables should cross at an angle of 90°.
- There must either be a minimum distance between the power cable and data lines of 10 cm or you must install a partition or route the data line in a metal pipe.
- Only use screened cables and plug-in connectors.
- Route copper wires outside cable support systems through plastic pipes.
- Temperatures that are too high or too low result in lower mechanical and electrical loading or lead to damage.
- Data lines must only be subjected to a defined tensile load; otherwise, the electrical or attenuation values can no longer be guaranteed.
- When pulling cables out of the cable drum, avoid looping or pulling over sharp edges.
- With copper wires, implement potential equalization; when doing this, differentiate between hazardous and non-hazardous areas.
- Electrical, magnetic and electromagnetic fields affect signal transmission and under some circumstances can destroy electronic components.

8 Commissioning

8.1 First steps

You need to make a number of basic settings before operating the device. This section leads you through initial commissioning.

Precondition for action:

- ✓ The device has been installed in accordance with section 7 “Installation” on page 12.
- ✓ All system parts are ready for operation.

Configuration assistant

With initial commissioning, a configuration wizard will lead you through the basic settings: your preferred language; sensors connected; signal bugle; and two limit values.

Perform the following steps:

1. Set the preferred language and press on the arrow.
 2. Set up the connected sensors and press the right-hand arrow. Further information is available in section 8.2.1.1.
 3. Set up the bugle and press the right-hand arrow. Further information is available in section 8.2.2.1 “Bugle” on page 19.
 4. Set up the limit values and press the right-hand arrow.
 5. Press “Yes” in the dialogue field to save the settings.
- ✓ **The configuration assistant has been ended.**



You can start the configuration wizard manually by navigating Menu item > System > Settings > Configuration and pressing on “Edit”.

8.2 Configuration

The device is set up variably and can be individually adapted to meet your requirements. As such, it is necessary to adjust the configuration of the inputs and outputs to the sensors and signal technology used before commissioning.

The following section leads you through the device configuration.

8.2.1 Input side

You can connect up to four sensors for various gases and the temperature. You can also use eight digital inputs.

8.2.1.1 Sensors

The sensors must be configured individually in the device to enable precise and error-free measurement of the gases. You can perform various settings.

Perform the following steps:

1. In the main menu, navigate from System > Inputs to the “Sensors” tab.
2. In the “Sensors” tab, configure every connected sensor and state the following information.
3. Measured value: Choose from “Chlorine-gas”; “Chlorine dioxide”; “Ozone” or “other”.
4. Unit: Choose between “ppm” (parts per million) or “Vol.-%” (volume per cent).
5. Measuring range: Enter the maximum measuring range of the sensor.
6. Limit values: Enter the limit values for the pre-alarm and the master alarm.
7. Room name: Give the sensor an individual name.
8. Slope: State the individual slope of the sensor.

✓ **Configuration of the sensors completed.**

8.2.1.2 Temperature

You can connect up to four temperature sensors to the device. This enables you to measure the temperatures at various positions.

Perform the following steps:

1. In the main menu under System > Inputs, navigate to the “Temperature” tab.
2. In the “Temperature” tab, configure every connected temperature sensor and state the following information.
3. Measuring: Chose between “On” and “Off”.
4. Min-alarm: Activate or deactivate the “Min-alarm” and enter a temperature under which the alarm will be triggered.
5. Max-alarm: Activate or deactivate the “Max-alarm” and enter a temperature above which the alarm will be triggered.

✓ **Configuration of the temperature sensors completed.**

8.2.1.3 Digital

You can use up to 8 digital inputs to evaluate switching statuses and to detect them as alarm message which are to be documented in the log-files.

Perform the following steps:

1. In the main menu under System > Inputs, navigate to the “Digital” tab.
2. In the “Digital” tab, configure the inputs and state the following information.
3. Type: Select an individual name.

- Action: Choose between “OK = open” (N.O., working contact) or “OK = contact” (N.C., break contact).

✓ **Configuration of the digital inputs completed.**

8.2.2 Output side

Depending on the equipment, you can connect the device to a range of actors in the alarm chain. The following connection methods are available.

8.2.2.1 Bugle

The basic configuration of the device includes a bugle relay to which a signal bugle or siren can be connected.

Perform the following steps:

- In the main menu under System > Outputs, navigate to the “Bugle” tab.
- In the “Bugle” tab, configure the output and state the following information.
- Action: Choose between “normal opened” (N.O., make contact) or “normal closed” (N.C., break contact).
- Latching: On = The alarm is active, until it is manually confirmed. OFF = The alarm is deactivated automatically as soon as the limit value has been undercut.
- Relay triggers with: Chose whether this alarm should trigger at limit value 1 or limit value 2. You can determine the limit values for every sensor. See section 8.2.1.1 “Sensors” on page 18.
- Alarm delay: Determine how many seconds after the exceeding of the limit value the alarm should be activated.

✓ **Configuration of the bugle completed.**

8.2.2.2 Limit values

You can set the action of the connected signal technology individually. The limit values set here apply to sensor 1/output 1 and sensor 2/output 2.

Perform the following steps:

- In the main menu under System > Outputs, navigate to the “Limit values” tab.
- Working in the “Limit value” tab, configure the action of the various output circuit boards and the connected signal technology.
- Action: Choose between “normal opened” (N.O., make contact) or “normal closed” (N.C., break contact).
- Latching: On = The alarm is active, until it is manually confirmed. OFF = The alarm is deactivated automatically as soon as the limit value has been undercut.
- Alarm delay: Determine how many seconds after the exceeding of the limit value the alarm should be activated.

✓ **Configuration of the limit values completed.**

8.2.2.3 Digital output signals

You can control the connected signal technology with digital output signals. Only output 3 and output 4 are freely-configurable.

Perform the following steps:

- In the main menu under System > Outputs, navigate to the “Digital” tab.
- In the “Digital” tab, configure the output and state the following information.
- Function: Enter a name (e.g. ChlorStop or sprinkler installation).
- Action: Choose between “normal opened” (N.O., make contact) or “normal closed” (N.C., break contact).
- Latching: On = The alarm is active, until it is manually confirmed. OFF = The alarm is deactivated automatically as soon as the limit value has been undercut.
- Trips with: Select which message (e.g. limit value, switch of a digital input, service message) of the output should be triggered.
- Alarm delay: Determine how many seconds after the exceeding of the limit value the alarm should be activated.

✓ **Configuration of the digital outputs completed.**

8.2.2.4 Analogue output signals

You can issue the sensor values via analogue signals and arrange for their external evaluation.

Perform the following steps:

- In the main menu under System > Outputs, navigate to the “Analogue” tab.
- In the “Analogue” tab, configure the output and state the following information.
- Type: Configure the signal. The configuration required depends on the device connected.
- Output: Select the sensor for which the values are to be outputted.
- Minimum: Establish the sensor value at which the signal should be at its lowest.
- Maximum: Establish the sensor value at which the signal should be at its highest.



The values for “minimum” and “maximum” serve the scaling of the analogue output signal.

Example: Sensor 1 has a measuring range of 0 - 10 ppm. 4 - 20 mA was selected as the 20 mA type. If the complete sensor measuring range is to be covered by the analogue signal, 0 ppm should be selected for “Minimum” and 10 ppm for “Maximum”. At 0 ppm, a 4 mA signal will be issued; at 10 ppm a 20 mA signal will be issued.

- Testsignal: You can test the configuration of the analogue outputs. Read the value displayed on the external device.

✓ **Configuration of the analogue outputs completed.**

8.2.3 Colours of the alarm messages

You can edit the colours of the different messages.

Perform the following steps:

1. In the main menu under System > Settings, navigate to the “Alarm colour” tab.
2. Look in the “Alarm colour” tab for the message for which you wish to edit the alarm colour.
3. Press on the row of the alarm and then on “Edit”.
 - ▶ You can choose between four colour fields.

✓ **Alarm colour edited.**

8.2.4 Save the configuration

You can save your individual configuration and load it later to rectify problems quickly.

Recommendation: Leave the factory-set configuration file unchanged and save your personal configuration in a new file. Given problems with the configuration, this enables you to return to a functioning configuration quickly.

Perform the following steps:

1. In the main menu under System > Settings, navigate to the “Configuration” tab.
2. Press “save” and enter an existing file name to overwrite the file or a new name to generate a new configuration file.
3. Press on the green checkmark to confirm the entry.

✓ **Configuration saved.**

8.3 Password protection

The password protection of your device has been deactivated at the factory. You can provide your device with password protection against access to specific functions in three levels.

- 1. Level: Only simple settings are accessible here. This level is suitable for daily operation.
- 2. Level: The configuration of the inputs and outputs and the adjustment of the sensors are accessible here. This level is required for device configuration and should only be operated by experienced users.
- 3. Level: The service menu is accessible here. This level is mainly required for maintenance work such as changing the sensor, performing software updates or network settings.



The following passwords are factory-set:

1. Level: 0001
2. Level: 0002
3. Level: 0003

Configuring the password protection



Perform the following steps:

1. Press the lock icon in the left-hand upper corner to configure the password protection.
2. Password active: Select whether password protection should be activated or deactivated. Password protection can only be deactivated if you are logged in to level 3.
 - ▶ Password protection must be activated to unlock the following steps.
3. Select one of the three password levels into which you wish to log on.
4. Login: Login with the password for the password level previously selected.
5. Change password: You can edit the password of the level in which you are logged in.

✓ **Password protection configured.**

8.4 Network settings

You may need to perform settings in order to be able to use the device in a network.

Further information about using the device in a network can be found in section 9.3 “Access via network” on page 21.

Perform the following steps:

1. In the main menu under System > Service, navigate to the “Network” tab.
2. In the “Network” tab, configure the output and state the following information.
3. IP address: Give the device an IP address over which it can be reached in the network.
4. Subnetmask Enter the subnetmask.
5. TFTP server: “On” = Access via TFTP protocol activated on the device memory. “OFF” = Access via TFTP protocol de-activated on the device memory.

✓ **Network settings performed.**

9 Operation

When in operation, the device will display the main view with the current values and the status row with status messages.

9.1 Confirming a message

You can view device alarm, error and service messages in the status row. The status row flashes in the colour set for the message type.

You must confirm an alarm, error or service message on the device to quit the display in the status row. Confirming an alarm also deactivates the connected signal technology.

Perform the following steps:

1. When a message is displayed, press on the status row or go to the "Messages" menu.
2. Select one or more messages and press either "Confirm" or "Confirm all".
 - ▶ The confirmed message is marked with a green tick.

✓ **Message confirmed.**

History

You can follow the course of the messages in a history.

In the main menu, press "messages" and the tab "History".

9.2 Viewing the trend display

You can view the trend progression of up to four values in the last 24 hours.

Perform the following steps:

1. In the main menu, press "Trend".
 - ▶ The device will show the trend.
2. You can configure the display in accordance with your wishes. Press the "Display" tab and activate up to four values which are to be displayed in the trend.
3. You can set the scaling of the individual trend display for every value individually. Press on the "Scaling" tab, select a sensor and define "minimum" and "maximum".

✓ **Trend display configured.**

9.3 Access via network

Accessing the device via a network requires that it is connected to an existing Ethernet network.

Further information about connection to an existing network is specified in sections 7.9 "Connecting Ethernet" on page 17 and 8.4 "Network settings" on page 20.

Web browser

You can access the device data using all network devices which are fitted with a web browser. You will require the IP address, subnetmask and possibly the MAC address of the device.

The network settings of your device are listed under Main menu > Service > Network.

Open the web browser of your end device and enter the IP address of the gas warning device in the address row. The page of the gas warning device will open and provide a range of information.

Modbus TCP/IP Protocol

You can access certain data on the device via Modbus TCP/IP protocol. You need the Modbus TCP/IP protocol e.g. For the connection with a control panel or a PLC.

The Modbus addresses of your device are stated in section 12 "Modbus addresses" on page 25.

TFTP protocol

You can access the device memory via a TFTP client software as long as TFTP is activated in the network settings. You need the device IP address for access.

The network settings of your device are listed under Main menu > Service > Network.

10 Maintenance

Products by Lutz-Jesco are manufactured to the highest quality standards and have a long service life. However, some parts are subject to operational wear. This means that regular visual inspections are necessary to ensure a long operating life. Regular maintenance will protect the device from operation interruptions.

10.1 Maintenance intervals

This table gives you an overview of maintenance work and the intervals at which you must carry it out. The next few sections contain instructions for carrying out this work.

Interval	Maintenance
Monthly	<ul style="list-style-type: none"> ■ Visual check ■ Touchscreen function test ■ Sensor test under Inputs > Sensors > Test ■ Function test of the sensors with test gas
After 1 year	<ul style="list-style-type: none"> ■ Replacing the sensors ■ Sensor test under Inputs > Sensors > Test ■ Function test of the sensors with test gas

Table 15: Maintenance intervals

i Local regulations can specify shorter maintenance intervals. The frequency of maintenance required is not dependant on the intensity of the device usage. The chemical wear of the sensors begins with the first contact with the medium.

10.2 Renewing the sensor

Precondition for action:

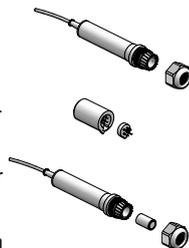
- ✓ The voltage supply has been disconnected.

Resources required:

- ✂ New sensor element

Perform the following steps:

1. Disconnect the sensor bracket from the wall.
2. Unscrew the union nut underneath on the sensor bracket.
3. Take the exhausted sensor from the sensor bracket.
4. Unpack the new sensor element. It contains a short-circuit connector which protects the sensor element against ageing during transport and storage.
5. Remove the short circuit connector. To do so, pull on the gold pins e.g. with long nose pliers.
 - ▶ The plug contacts are now visible.



6. Press the sensor element into the sensor bracket without force. At the same time, turn the sensor element until the plastic parts fit in each other. Press the gold plug together with light pressure.
7. Tighten the union nut by hand.
8. Fit the sensor bracket to the wall.
9. Connect the device to the voltage supply.
 - ▶ The device starts. Wait until it has booted.
10. Perform the instructions in section “Testing the sensor functionality” on page 14.

✓ **Sensor has been renewed.**

10.3 Keeping logfiles

If you make an entry in the logfiles, the device will issue a reminder when a sensor needs to be replaced.

Perform the following steps:

1. In the main menu, navigate to Service > Sensor change.
2. Enter the serial number in the tab and the manufacturing company of the sensor.
3. Activate the reminder function and enter a date for the next sensor change.

✓ **Logfiles maintained.**

10.4 Updating software

i The most up-to-date firmware version can be downloaded from www.Lutz-Jesco.com. Copy this *.BIN file onto the USB flash drive of the gas warning device. The file must be saved in the root directory of the USB flashdrive and may not be stored in a sub-folder.

You can update the device software to a newer version.

Perform the following steps:

1. In the main menu, navigate to System > Service > Device.
2. Press Software update.
3. Select the *.BIN file with the newer version and press “Load”.
 - ▶ The software is installed. The device will restart automatically during this procedure.

✓ **Update performed.**

10.5 Replacing the fuse

Your device is fitted with an electrical fuse to protect against short circuits or over-voltage. You can change the fuse if it is defective.

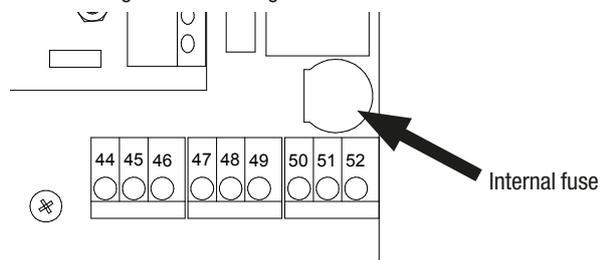


Fig. 13: Position of the fuse

Precondition for action:

- ✓ The voltage supply has been disconnected and protected against re-connection.
- ✓ The housing is open.

Resources required:

- ✂ Slotted screwdriver
- ✂ New fuse: 5 x 20 mm, 3.15 A, 250 V (delay)

Perform the following steps:

1. The fuse holder in the form of a bayonet catch is located at the bottom right-hand side, above the clamps for PE, N and L with the marking "Fuse". Use the slotted screwdriver to press the catch downwards and then turn it leftwards.
 2. Remove the fuse.
 3. Replace the fuse and fix it in place by turning the catch clockwise.
- ✓ **Fuse has been replaced.**

10.6 Resetting the settings



The instructions differentiate between the internal factory settings and the device configuration.

The factory settings contain the basic configuration of the device hardware and cannot be changed.

The configuration file (*.SET) contains the individual language configuration, the action of the sensors or the limit values. You can change, save and load the individual settings.

Reset to the factory settings

You can now reset the device to its factory settings. This deletes the configuration. You must then either load a configuration file or perform the configuration manually.

Perform the following steps:

1. In the main menu, navigate to System > Service > Device.
2. Press "factory settings".

3. Confirm with "Yes".

▶ The configuration will be deleted. You must proceed with the following section.

- ✓ **All factory default settings will be reset.**

Reset the configuration

The device configuration will be saved in *.SET files. A factory-set configuration file with standard settings is already present. You can change these or save your personal configuration in new files.

Recommendation: Leave the factory-set configuration file unchanged and save your personal configuration in a new file. Given problems with the configuration, this enables you to return to a functioning configuration quickly.

Perform the following steps:

1. In the main menu, navigate to System > Settings > Configuration.
 2. Select an existing configuration file.
 3. Click "Load" to confirm.
 - ▶ The device configuration returns to the saved state.
- ✓ **Load the old configuration.**

10.7 Finishing maintenance

Perform the following steps:

1. Make a note of the date and scope of the maintenance performed.
2. In the "Service" menu, navigate to the "Service entry" tab. Enter your company name and notes about the maintenance. Activate the reminder function and enter a date for the next service. Confirm with the "Save" button.
 - ▶ Your service action has been saved in the logfiles.
3. To restart the system, proceed in accordance with the instructions in section 8 "Commissioning" on page 18.

- ✓ **Maintenance completed.**

11 Troubleshooting

See below for information about how to rectify faults on the device or the system. If you cannot eliminate the fault, please consult with the manufacturer on further measures or return the device for repair.

Fault	Possible cause	Remedy
The device loses all settings after it has been disconnected from the network and then reconnected.	The battery is empty.	<ul style="list-style-type: none"> ■ Check that the battery is really empty. To do so, navigate to the menu System > Information > System values. You can view the battery voltage under "Battery". If the voltage is under 3 V, change the battery. ■ Replace the battery.
The device is off.	The power supply has been interrupted.	Restore the power supply.
	The device fuse is defective.	Replace the fuse.
The sensor error is displayed as an alarm.	The sensor has not been installed correctly.	Ensure that the sensor has been installed correctly. See section 7.5.
	The sensor is not held in the sensor bracket correctly.	Ensure that the sensor has been installed in the sensor bracket correctly.
	The signal cable to the sensor has a break.	Replace the sensor bracket.

Table 16: Troubleshooting

12 Modbus addresses

With a DOUBLE-WORD, the HIGH-WORD is transferred first! Hexadecimal display is shown by a leading “0x”.

Address	Read	Write	Description	Meaning
Data that are not channel-related.				
4	x		Device type + version	0x0550 + (number of channels - 1) A single-channel gas warning device thus has the identification: 0x0550
6 to 8	x		Software Version:	Transfer: ASCII sign e.g. 102 is the software version V1.02
10 and 11	x		Operating hours	
13	x		Hardware version	
2000 - 2002	x		Serial number	The information consists of a ASCII sign in HIGH-BYTE and one in LOW-BYTE Serial number: 123456 will thus be transferred as Address 2000: 0x3132 Address 2001: 0x3334 Address 2002: 0x3536
2003	x		Status of the digital inputs	Shows the logic of the clamps! (Not the configured software function) The individual bits are assigned directly to the input clamps. Example: 0x01 means that the first digital inputs (clamps 21 + 22) are actuated.
2004	x		Status digital outputs	The individual bits of the output modules. Example: 0x03 means that the upper relay or the upper optocoupler of the second output module (from the top) is active.
2008 - 2017	x	x	Name of the gas warning device	Max. 20 characters Caution! The evaluation must stop at the first zero (string end). The individual letters are located in the HIGH-BYTE and LOW-BYTE of every address. “GW” thus produces: Address 2008 = 0x4757 Address 2009 = 0x00 The question marks are undefined. In this case, all other addresses send undefined values.

Table 17: Modbus addresses

Address	Read	Write	Description	Meaning
Channel-related data. 20 addresses are reserved for every channel. Start at 2020, 2040, 2060 and 2080.				
2020	x		Medium	<ul style="list-style-type: none"> ■ 3) Chlorine gas ■ 5) Chlorine dioxide ■ 9) Ozone ■ 15) Temperature ■ 16) Neutral (0 - 100%) ■ 254) Free entry ■ 255) No type
2021	x		Value (HIGH-WORD)	Two positions after decimal point (215 => 2.15)
2022	x		Value (LOW-WORD)	Two positions after decimal point (215 => 2.15)
2024	x		Temperature value	One position after the decimal point (215 => 21.5)
2025	x		Temperature unit	0 = °C 1 = °F
2026	x	x	Limit value 1 (HIGH-WORD)	Two positions after decimal point (215 => 2.15)
2027	x	x	Limit value 1 (LOW-WORD)	Two positions after decimal point (215 => 2.15)
2028	x	x	Limit value 2 (HIGH-WORD)	Two positions after decimal point (215 => 2.15)
2029	x	x	Limit value 2 (LOW-WORD)	Two positions after decimal point (215 => 2.15)

Table 17: Modbus addresses

13 EU Declaration of Conformity



(DE) EU-Konformitätserklärung

Hiermit erklären wir, dass das nachfolgend bezeichnete Gerät aufgrund seiner Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der aufgeführten EU-Richtlinien entspricht. Bei einer nicht mit uns abgestimmten Änderung am Gerät verliert diese Erklärung ihre Gültigkeit.

(EN) EU Declaration of Conformity

We hereby certify that the device described in the following complies with the relevant fundamental safety and sanitary requirements and the listed EU regulations due to the concept and design of the version sold by us.

If the device is modified without our consent, this declaration loses its validity.

(FR) Déclaration de conformité UE

Nous déclarons sous notre propre responsabilité que le produit ci-dessous mentionné répond aux exigences essentielles de sécurité et de santé des directives UE énumérées aussi bien sur le plan de sa conception et de son type de construction que du modèle que nous avons mis en circulation.

Cette déclaration perdra sa validité en cas d'une modification effectuée sur le produit sans notre accord explicite.

(ES) Declaración de conformidad UE

Por la presente declaramos que, dados la concepción y los aspectos constructivos del modelo puesto por nosotros en circulación, el aparato mencionado a continuación cumple con los requisitos sanitarios y de seguridad vigentes de las directivas de la U.E. citadas a continuación.

Esta declaración será invalidada por cambios en el aparato realizados sin nuestro consentimiento.

(PT) Declaração de conformidade UE

Declaramos pelo presente documento que o equipamento a seguir descrito, devido à sua concepção e ao tipo de construção daí resultante, bem como a versão por nós lançada no mercado, cumpre as exigências básicas aplicáveis de segurança e de saúde das directivas CE indicadas.

A presente declaração perde a sua validade em caso de alteração ao equipamento não autorizada por nós.

Bezeichnung des Gerätes:

Gaswarngerät

Description of the unit:

Gas warning device

Désignation du matériel:

Détecteur de fuite de gaz

Descripción de la mercancía:

Detector de gas

Designação do aparelho:

Aparelho de alerta de gás

Typ:

EASYCON GW

Type:

EU-Richtlinien:

2014/30/EU

EU directives:

2014/35/EU

Die Schutzziele der Niederspannungsrichtlinie 2014/35/EU wurden gemäß Anhang I, Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EG eingehalten.

The protective aims of the Low Voltage Directive 2014/35/EU were adhered to in accordance with Annex I, No. 1.5.1 of the Machinery Directive 2006/42/EC.

Harmonisierte Normen:

Harmonized standards:

DIN EN ISO 12100:2011-03
 DIN EN 61000-4-2:2009-12
 DIN EN 61000-4-3:2006 + A1:2008 + A2:2010
 DIN EN 61000-4-4:2012
 DIN EN 61000-4-5:2014
 DIN EN 61000-4-6:2014-08
 DIN EN 61000-4-11:2005-02
 DIN EN 61000-6-2:2016-05
 DIN EN 61000-6-3:2011-09
 DIN EN 55016-2-3:2010 + A1:2010

Dokumentationsbevollmächtigter:

Lutz-Jesco GmbH

Authorized person for documentation:

Heinz Lutz
 Geschäftsführer / Chief Executive Officer
 Lutz-Jesco GmbH
 Wedemark, 01.05.2018

Lutz-Jesco GmbH
 Am Bostelberge 19
 30900 Wedemark
 Germany

14 Warranty claim

Warranty claim

Please copy and send it back with the unit!

If the device breaks down within the period of warranty, please return it in a cleaned condition with the complete warranty claim.

Sender

Company: Phone: Date:

Address:

Contact person:

Manufacturer order no.: Date of delivery:

Device type: Serial number:

Nominal capacity / nominal pressure:

Description of fault:.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Service conditions of the device

Point of use / system designation:.....

.....

Accessories used (suction line etc.):.....

.....

.....

.....

.....

.....

Commissioning (date):

Duty period (approx. operating hours):

Please describe the specific installation and enclose a simple drawing or picture of the chemical feed system, showing materials of construction, diameters, lengths and heights of suction and discharge lines.

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