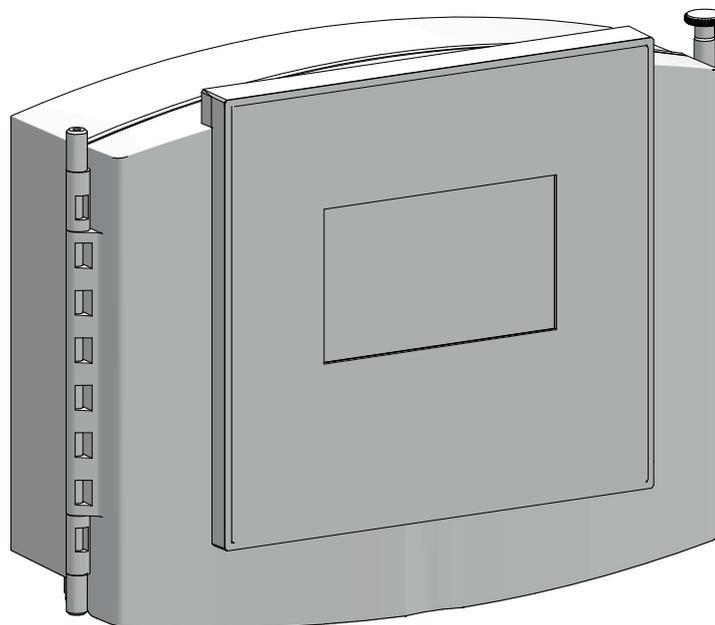


Gas warning device
EASYCON GW
Operating instructions



Read the operating manual!

The user is responsible for installation and operation related mistakes!

Table of Contents

1	Notes for the Reader	4	10	Maintenance	25
1.1	General non-discrimination	4	10.1	Maintenance intervals.....	25
1.2	Explanation of the signal words	4	10.2	Renewing the sensor	25
1.3	Explanation of the warning signs	4	10.3	Keeping logfiles	26
1.4	Identification of warnings	4	10.4	Updating software.....	26
1.5	Identification of action instructions	4	10.5	Battery	26
			10.6	Replacing the fuse	27
			10.7	Resetting the settings	27
			10.8	Finishing maintenance	27
2	Safety	5	11	Troubleshooting	28
2.1	General warnings.....	5	12	Modbus addresses	29
2.2	Hazards due to non-compliance with the safety instructions	5	13	EU Declaration of Conformity	31
2.3	Working in a safety-conscious manner	5	14	Index	32
2.4	Personnel qualification	5			
3	Intended use	7			
3.1	Notes on product warranty	7			
3.2	Intended purpose	7			
3.3	Foreseeable misuse	7			
4	Product description	8			
4.1	Scope of delivery	8			
4.2	Design and function	8			
4.3	Rating plate	9			
5	Technical data	10			
5.1	EASYCON GW.....	10			
5.2	Sensors	10			
6	Dimensions	11			
6.1	Outside dimensions	11			
6.2	Drillhole dimensions	11			
7	Installation	12			
7.1	Principles	12			
7.2	Installation on the wall	12			
7.3	Electrical installation	12			
7.4	Terminal connection.....	13			
7.5	Connecting the sensor	14			
7.6	Connecting the signal technology	15			
7.7	Digital inputs	17			
7.8	RC protection for relay.....	17			
7.9	Connecting Ethernet	17			
8	Commissioning	19			
8.1	First steps.....	19			
8.2	Configuration	19			
8.3	Password protection	21			
8.4	Network settings.....	21			
9	Operation	23			
9.1	Confirming a message	23			
9.2	Logbook	23			
9.3	Viewing the trend display	24			
9.4	Access via network	24			

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

This operating manual uses only the masculine gender in cases in which the rules of grammar would allow for gender allocation. This approach serves the purpose of legibility. Men and women are always addressed equally.

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>PLEASE NOTE</i>	Refers to a danger which, if ignored, may lead to risk to the machine and its function.

Tab. 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

Tab. 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 cause injuries.	
<ul style="list-style-type: none"> ⇒ 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.	
<ul style="list-style-type: none"> ⇒ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications. ⇒ Prevent access to the system for unauthorised persons. 	

	PLEASE NOTE
Do not dispose of the device in the domestic waste!	
Do not dispose of electric devices via the domestic waste.	
<ul style="list-style-type: none"> ⇒ 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 should 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

Tab. 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

- Additional circuit boards fitted
- Connection of the mains voltage without a protective earthing conductor / removing the protective earthing conductor
- 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

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
- 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
- Using 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
- Assembly kit
- Operating instructions
- Inspection report
- Test log
- Mounting set
- USB flash drive

4.2 Design and function

4.2.1 Installation example

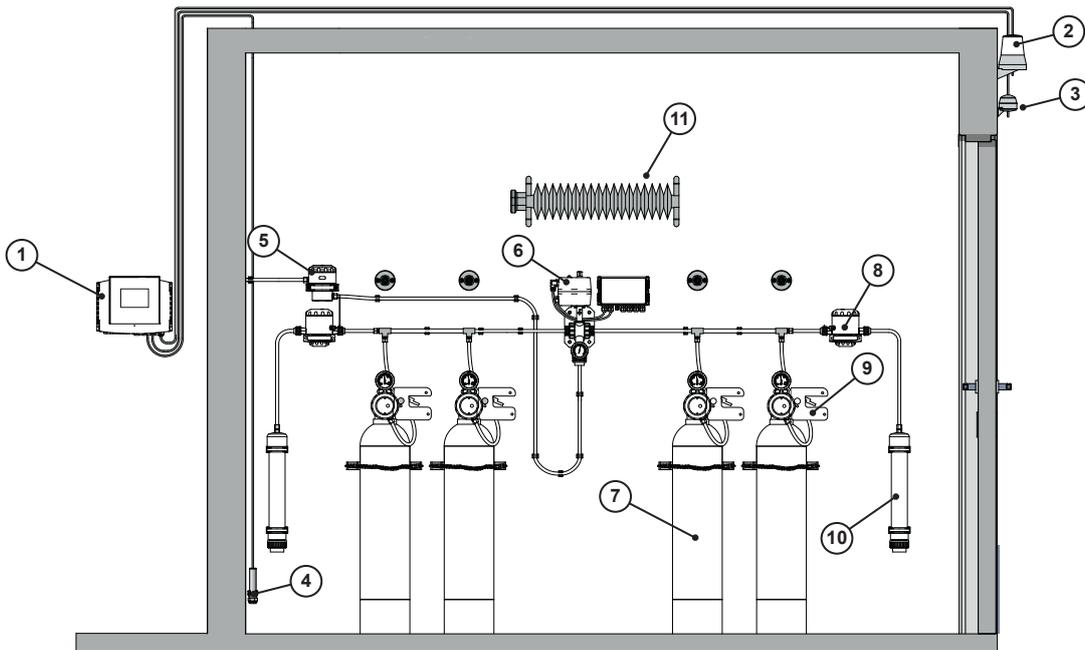


Fig. 1: Simple example installation of a chlorine gas room

Position	Description
1	EASYCON GW gas warning device
2	Signal lamp
3	Alarm horn
4	Gas sensor with sensor bracket
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

Tab. 4: Position numbers "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.

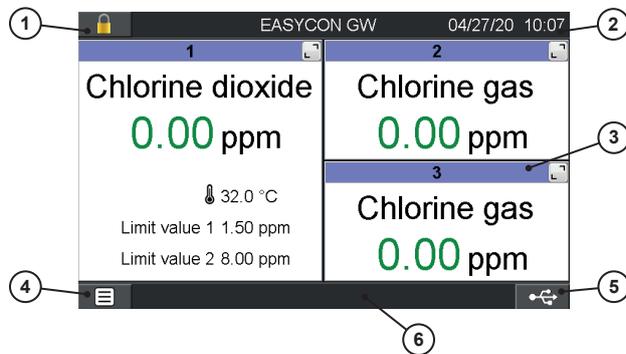


Fig. 2: Main view with two sensors

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

Tab. 5: Position numbers main view with two sensors

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.

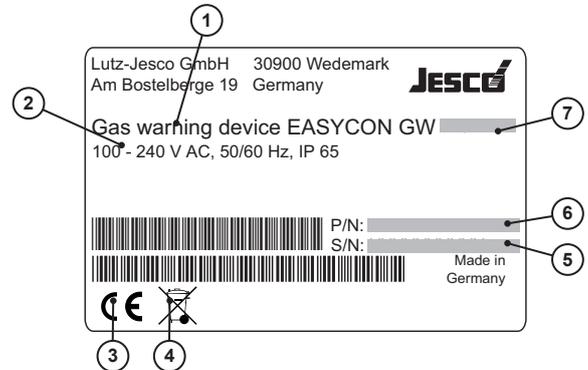


Fig. 3: Rating plate EASYCON GW

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

Tab. 6: Position numbers rating plate EASYCON GW

5 Technical data

5.1 EASYCON GW

Specification and Unit		Value
Voltage supply		100 – 240 V AC, 50/60 Hz
Power consumption	W	max. 20
Housing dimensions	mm	302 x 240 x 107
Temperature sensor	°C	-10 to +100
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)
Load capacity of the relay high current		230 V AC, 8 A (ohmic resistive load)
analog outputs		4 x 0/4 – 20 mA, max. 500 Ω
Interfaces		Ethernet Modbus TCP/IP
Protection class		IP65
Battery		CR1220, Ø12,5 mm, 3 V, 35 mAh
Ambient temperature	°C	-5 to +45
Air humidity	%	max. 95, non condensing

Tab. 7: Technical data EASYCON GW

5.2 Sensors

Specification and Unit		Value		
		Chlorine (Cl ₂)	Chlorine dioxide (ClO ₂)	Ozone (O ₃)
Measuring range	ppm	0 – 20	0 – 5	0 – 5
Reaction time	s	30 approx.		
Dimensions	mm	135 x Ø 33		
Housing material		PVC		
Protection class		IP54		
Weight	kg	0.2 approx.		
Ambient temperature	°C	-10 to +40		
Air humidity	%	max. 90, non condensing		
Service life		max. 2 years, depending on the operating conditions		

Tab. 8: Technical data

6 Dimensions

All dimensions in mm

6.1 Outside dimensions

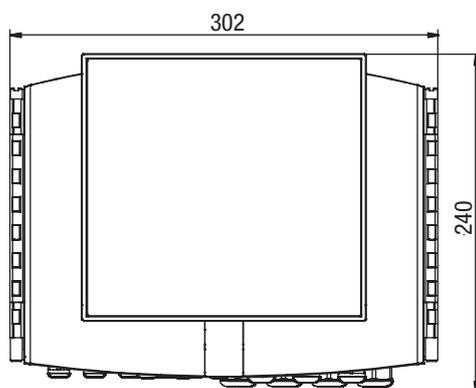


Fig. 4: Outside dimensions

6.2 Drillhole dimensions

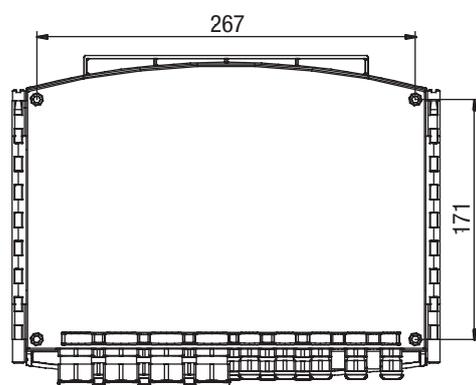


Fig. 5: Drillhole dimensions

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 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, green-yellow*), neutral conductor (N, blue*) and the phase (L, brown*) on the circuit board.

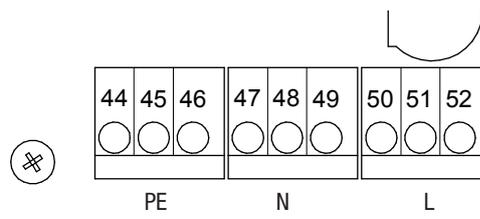


Fig. 6: Connecting the voltage supply

* Applies to cable colours of the manufacturer's cables. No liability is accepted for cables from other manufacturers.

- ✓ **Electrically installed.**

 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. 4A.

7.4 Terminal connection

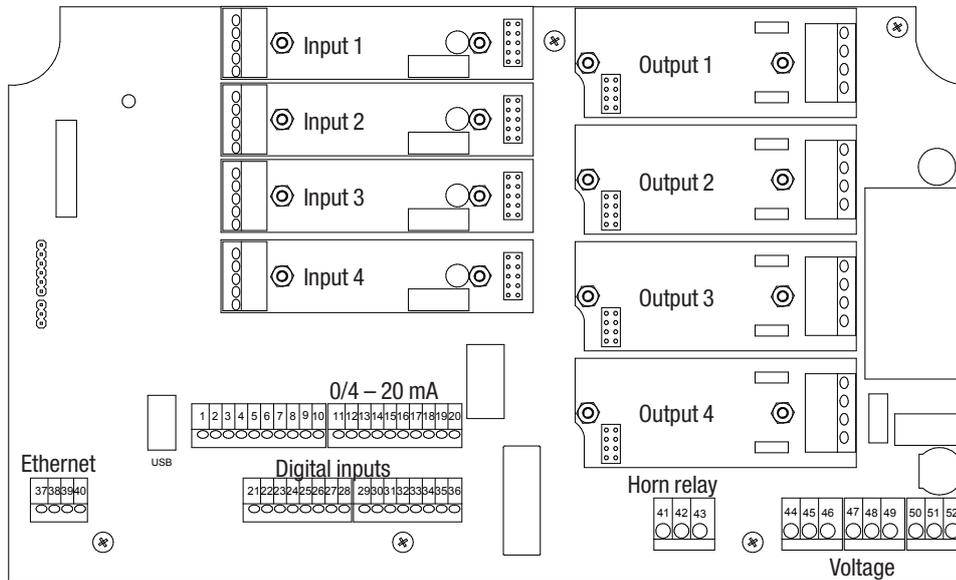


Fig. 7: Overview of the connection clamps.

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

Tab. 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 Pt100 temperature sensor to every input circuit board to monitor the room temperature.

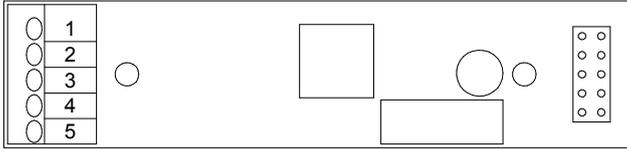


Fig. 8: Input circuit board

Terminal	Function	Description
1	Temperature input	Pt100, depending on fitting if necessary YE (yellow) GY (grey)
2	Temperature input	
3	Measuring electrode	GN (green)
4	Counter electrode	WH (white)
5	Reference electrode	BN (brown)

Tab. 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.

PLEASE 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 or five coloured wires onto the input circuit board clamp block. Comply with Tab. 10 “Clamp connection of the input circuit board” on page 14.

i 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 isolate it.

✓ **Sensor connected.**

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 including section 7.5 “Connecting the sensor” on page 14.
- ✓ The device is activated.

Perform the following steps:

1. In Menu 2, navigate to the “Sensors” tab under Inputs.
2. Select “Sensor 1” and press the “Test” button.
 - ▶ The device checks whether the selected sensor has been connected correctly and if not, issues an error message. In the case of an error message, check the sensor connecting cable and whether the sensor has been inserted in the sensor bracket completely.
3. Repeat step 2 for all sensors.
4. Check the configuration of the sensors using section 8.2.1.1 “Sensors” on page 19.
5. 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.**

7.5.1 Current module input circuit board

A number of sensors require an operating voltage for their measurement. These sensors are connected to the current module and supplied with 24 V.

A maximum of 2 current modules can be used per EASYCON GW gas warning device.

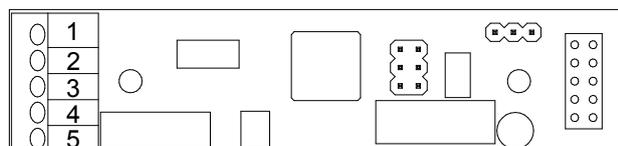


Fig. 9: Current module input circuit board

Terminal	Function
1	Temperature input for Pt100
2	
3	0 V
4	Measuring input
5	+ 24 V DC output

Tab. 11: Terminal connection of the current module input circuit board

The 4 - 20 mA sensors of the GW601 can be connected.

7.6 Connecting the signal technology

Depending on the equipment of the device, you have up to four 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 horn relay, the relay output circuit board, the optocoupler output circuit board and the output circuit board with relay high current.

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.

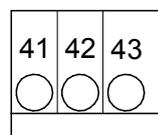


Fig. 10: Horn relay

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

Tab. 12: Bugle relay clamp connection

Perform the following steps:

1. Fit the signal bugle.
2. Lead the connecting cable through one of the cable screw connections to the underside of the device.

3. Connect the signal technology used either to clamps 41 and 42 (normal closed) or 42 and 43 (normal opened).

- ▶ 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 20.

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

7.6.2 Output circuit board (relay and relay high current)

You can control signal technology (e.g. horns or signal lamps) with the relay output circuit boards and the relay high current 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 19 informs you how to set the limit values individually.

PLEASE NOTE

Damage to the device!

The mains supply terminals at the input (terminals 44 – 52) may be operated with a maximum continual load of 6 A.

⇒ With higher electrical loads, the relays on the output circuit board must be connected with a separate cable and provided with fuse protection!

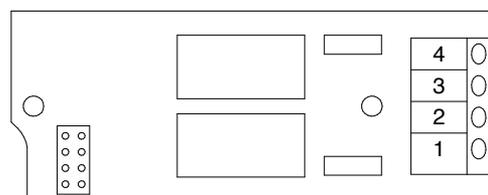


Fig. 11: Output circuit board (relay)

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

Tab. 13: 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.

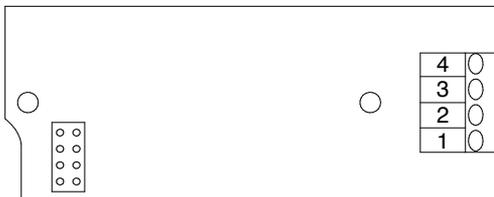


Fig. 12: Output circuit board (optocoupler)

Terminal	Function	Description
1	+	Opto X.2
2	-	
3	+	Opto X.1
4	-	

Tab. 14: Clamp connection output circuit board (optocoupler)

7.6.4 Digital universal output module

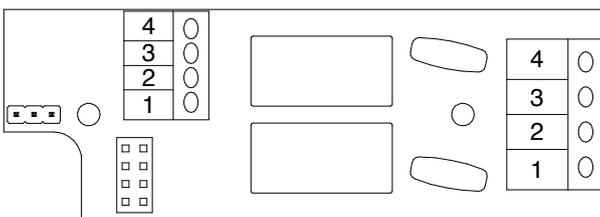


Fig. 13: Digital universal output module

The output module digital universal can be operated either as 2x optocoupler or as 2x relay. The selection is made via the jumper.

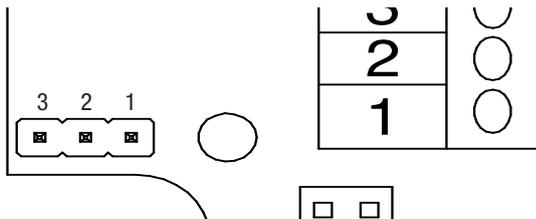


Fig. 14: Jumper

Jumper	Function	Clamps
1	Relay outputs	small
2		
3*	Optocoupler outputs	big

Tab. 15: Terminal connection

* Pin 3 is not available on all boards. If only pins 1 and 2 are present, the relay is active when the jumper is set to 1-2. The optocoupler outputs are always active.

i To ensure safety, the universal modules are always set to relay output on the factory side. If the optocouplers are required, the module must be adapted accordingly.

Optocoupler output function (jumper 1/2)

Terminal	Function	Description
1 small, left	Optocoupler x 2	Second digital output
2 small, left		
3 small, left	Optocoupler x 1	First digital output
4 small, left		

Tab. 16: Optocoupler output function (jumper 1/2)

Actors	Configuration
MAGDOS dosing pumps	Pulse frequency
MEMDOS dosing pumps	
MEMDOS SMART dosing pumps	

Tab. 17: Actors and configuration optocoupler output

Relay output function (jumper 2/3)

Terminal	Function	Description
1 big, right	Relay X.2	Second digital output
2 big, right		
3 big, right	Relay X.1	First digital output
4 big, right		

Tab. 18: Relay output function (jumper 2/3)

PLEASE NOTE

Damage to the device!

The mains supply terminals at the input (terminals 44 – 52) may be operated with a maximum continual load of 6 A.

⇒ With higher electrical loads, the relays on the output circuit board must be connected with a separate cable and provided with fuse protection!

7.6.5 Testing the signal technology

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

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.

Perform the following steps:

1. In Menu 2, navigate to > 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 20.

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.

Perform the following steps:

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. The manufacturer 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 Ω or above.

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

Tab. 19: Ethernet connection socket

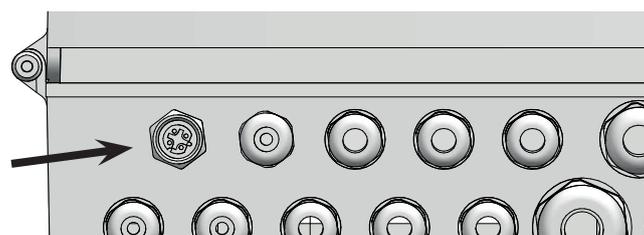


Fig. 15: Ethernet socket

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. Language: Set the preferred language and press on the arrow.
2. Sensors: Set up the connected sensors and press the right-hand arrow. Further information is available in section 8.2.1.1.
3. Horn: Set up the bugle and press the right-hand arrow. Further information is available in section 8.2.2.1 “Bugle” on page 20.
4. Limit values: 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 2 > Settings > Configuration and pressing on “Configuration wizard”.

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 Menu 2, navigate to the “Sensors” tab under Inputs.
2. In the “Sensors” tab, configure every connected sensor and state the following information.
3. Measurement: 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 Menu 2, navigate to the “Temperature” tab under Inputs.
2. In the “Temperature” tab, configure every connected temperature sensor and state the following information.
3. Measurement: Chose between “On” and “Off”.
4. Min-alarm: Activate or deactivate the “Minimum alarm” and specify a temperature below which the alarm will be triggered.
5. Max-alarm: Activate or deactivate the maximum alarm and specify 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.

Example: You can connect a door contact switch with the device, document the message pertaining to the switching of the contact in the log-book and then have the device output this as a message.

Perform the following steps:

1. In Menu 2, navigate to the "Digital" tab under Inputs.
2. In the "Digital" tab, configure the inputs and state the following information.
3. Type: Select an individual name.
4. 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:

1. In Menu 2, navigate to the "Horn" tab under Outputs.
2. In the "Horn" tab, configure the output and state the following information.
3. In the event of an alarm: Select between "Relay on" or "Relay off".
4. 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.
5. Output triggers upon: Choose 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 19.
6. 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:

1. In Menu 2, navigate to the "Limit value" tab under Outputs.
2. Working in the "Limit value" tab, configure the action of the various output circuit boards and the connected signal technology.

3. Action: Choose between "normal opened" (N.O., make contact) or "normal closed" (N.C., break contact).
4. 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.
5. 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:

1. In Menu 2, navigate to the "Digital" tab under Outputs.
2. In the "Digital" tab, configure the output and state the following information.
3. Function: Enter a name (e.g. ChlorStop or sprinkler installation).
4. Action: Choose between "normal opened" (N.O., make contact) or "normal closed" (N.C., break contact).
5. 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.
6. Output triggers upon: Select which message (e.g. limit value, switch of a digital input, service message) of the output should be triggered.
7. 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:

1. In Menu 2, navigate to the "Analogue" tab under Outputs.
2. In the "Analogue" tab, configure the output and state the following information.
3. 20 mA type: Configure the signal. The configuration required depends on the device connected.
4. Output: Select the sensor for which the values are to be outputted.
5. Minimum: Establish the sensor value at which the signal should be at its lowest.
6. 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.

7. 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 Menu 2, navigate to the “Alarm colour” tab under Settings.
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 chose 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 Menu 2, navigate to the “Configuration” tab under Settings.
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 9.4 “Access via network” on page 24.

Perform the following steps:

1. In Menu 2, navigate to the “Network” tab under Service.
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. Gateway: Enter the gateway.
 6. DNS server: Enter the DNS server.
 7. 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 now stored in the history and marked with a green tick.
- ✓ **Message confirmed.**

History

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

➔ In Menu 1, press "Messages" and the tab "History".

9.2 Logbook

The messages and service entries are saved in the device on a USB flash drive. You can display the files on the device or connect the USB flash drive to an external device.

The USB flash drive in the device contains the following logbook files:

Log	Format	Description
REPORTS	CSV	Messages
TREND	DAT	Trend data
SERVICE	CSV	Service entries
CHANGES	CSV	Changes to the configuration
SETUP	SET	Configuration
ADJUSTMENT	CSV	Calibration
LANG	LAA	Language files
System Volume Information	DAT	Settings

Tab. 20: Logbook



You can open and analyse CSV files with a suitable programme (e. g. MS Excel). You can also view all CSV files on the device.

9.2.1 Display the files

You can display the logbook files on the device.

Perform the following steps:

1. Press the USB icon in the status row (below right).
 - ▶ The files saved on the USB flash drive will be displayed in a file browser.
 2. Open one of the file folders.
 3. Select the desired file and press "Open file".
- ✓ **File opened.**

9.2.2 Exporting files

You can open the logbook files on an external device once you have removed the USB flash drive.

DANGER

Mortal danger from electric shock!

An the housing of the device is open, you are risk of getting an electric shock from contact with live parts.

- ⇒ Ensure that the machine has been disconnected from the voltage supply and is not live when conducting work with an open housing.
- ⇒ Secure the voltage supply against reactivation.

Precondition for action:

- ✓ The voltage supply is deactivated before the start and secured against reactivation.

Perform the following steps:

1. Open the housing.
 2. Remove the USB flash drive.
 3. Connect the USB flash drive with an external device and open it.
 - ▶ You can now access the logbook files.
- ✓ **Files exported.**

9.3 Viewing the trend display

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

Perform the following work steps:

1. In Menu 1, 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.**

9.4 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 21.



If connection problems are experienced during access via network, check the configuration of your security software.

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 can be found under Menu 2 > 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 29.

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 can be found under Menu 2 > Service > Network.

10 Maintenance

	DANGER
Mortal danger from electric shock!	
An the housing of the device is open, you are risk of getting an electric shock from contact with live parts.	
⇒ Ensure that the machine has been disconnected from the voltage supply and is not live when conducting work with an open housing.	
⇒ Secure the voltage supply against reactivation.	

The product is manufactured to the highest quality standards. 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"> ■ Replacement of the sensors ■ Sensor test under Inputs > Sensors > Test ■ Function test of the sensors with test gas ■ Check the charge level of the battery and replace at <2.9V.

Tab. 21: Maintenance intervals

	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.
- ✓ The slope of the sensor was measured in a laboratory beforehand.

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 shorting jumper which protects the sensor element against ageing during transport and storage.
5. Remove the shorting jumper. To do so, pull on the gold pins e.g. with long nose pliers (Fig. 16 “Remove the shorting jumper from the sensor” on page 25).
 - ▶ The plug contacts are now visible.

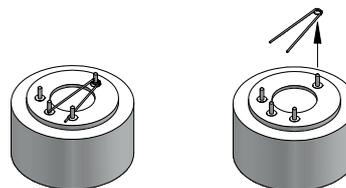


Fig. 16: Remove the shorting jumper from the sensor

6. Press the gold pins together with light pressure. At the same time, turn the sensor element until the plastic parts fit in each other.
7. Tighten the union nut by hand.
8. Connect the device to the voltage supply.
 - ▶ The device starts. Wait until it has booted.
9. Configure the new sensor as described in section 8.2.1.1 “Sensors” on page 19.
 - ▶ When replacing the sensor, you usually only need to specify the slope of the new sensor.
10. Perform the instructions in section “Testing the sensor functionality” on page 14.



Fig. 17: Arrangement plan - chlorine gas sensor

- ✓ **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 Menu 2, navigate to Service > Service entry.
2. Select whether this is a general service entry or whether the entry should refer to a specific sensor.
3. Enter the serial number and the manufacturing company of the sensor.
4. Activate the reminder function and enter a date for the next sensor change.
5. Confirm your entry with the "Save" key.

✓ **Logfiles maintained.**

10.4 Updating software

i You can find the current firmware version on our homepage 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 Menu 2, navigate to 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 Battery

The device is fitted with a button cell. Check the button cell within the scope of the annual maintenance. The lifetime of the button cell is determined by the device usage and can vary considerably.

You will need to replace the battery more often with devices which are switched off often or over a long period (e.g. over winter).



Fig. 18: CR1220 button cell

10.5.1 Checking the charge

You can check the battery charge easily using the device. Replace the battery if the charge amounts to less than 2.9 V.

➔ In Menu 2, navigate to > Information > System values and read off the current charging state of the battery.

10.5.2 Replace the battery

You must remove the two input circuit boards to be able to replace the battery (see Fig. 18).

Precondition for action:

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

Resources required:

- ✂ Socket wrench 5.5 mm (M3)
- ✂ New battery: CR1220, Ø12,5 mm, 3 V, 35 mAh

Perform the following steps:

1. Pull all cable connections from the input circuit boards which you need to dismantle.
 2. Using the socket wrench, unscrew the retaining nuts from the white protective plate and remove the plate.
 3. Using the socket wrench, unscrew the two nuts from the input circuit boards which you need to remove.
 4. Working carefully, slide the input circuit boards from their brackets.
 - ▶ The battery is now easily accessible.
 5. Lever the battery out of its holder without damaging the contact bow.
 6. Slide a new battery in the holder.
- ✓ **The battery has been changed.**

10.6 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.

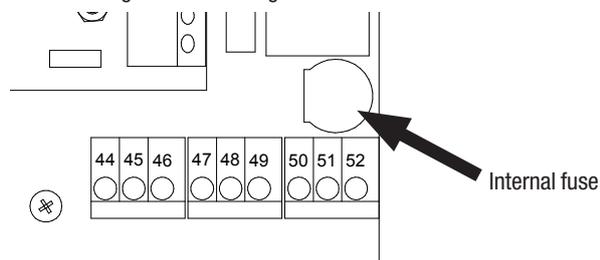


Fig. 19: Position of the fuse

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.**

10.7 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 device configuration. 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 work steps:

1. In Menu 2, navigate to 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 work steps:

1. In Menu 2, navigate to 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.**

10.8 Finishing maintenance

Perform the following work 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.
3. 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.
4. To restart the system, proceed in accordance with the instructions in section 8.1 "First steps" on page 19.

✓ **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.	See section 10.5 "Battery" on page 26.
Device is off	The power supply has been interrupted.	Re-establish 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.

Tab. 22: 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 – 8	x		Software Version:	Transfer: ASCII sign e.g. 102 is the software version V1.02
10 + 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 transferred
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. of 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.
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)

Tab. 23: Modbus addresses

Address	Read	Write	Description	Meaning																																																																																																			
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)																																																																																																			
Further non channel-related data.																																																																																																							
2220 – 2223	x		Analogue outputs 1 – 4	421 = 4.21 mA																																																																																																			
2225	x		Alarm status 1	Bit 0 ... 15 The bits are logically transferred: "15, 14 ... 1, 0"																																																																																																			
2226	x		Alarm status 2	Bit 16 ... 31 The bits are logically transferred: "31, 30 ... 17, 16"																																																																																																			
				<table border="0"> <tr><td>Sensor 1 (limit value 1)</td><td>Bit:</td><td>0</td></tr> <tr><td>Sensor 2 (limit value 1)</td><td>Bit:</td><td>1</td></tr> <tr><td>Sensor 3 (limit value 1)</td><td>Bit:</td><td>2</td></tr> <tr><td>Sensor 4 (limit value 1)</td><td>Bit:</td><td>3</td></tr> <tr><td>Sensor 1 (limit value 2)</td><td>Bit:</td><td>4</td></tr> <tr><td>Sensor 2 (limit value 2)</td><td>Bit:</td><td>5</td></tr> <tr><td>Sensor 3 (limit value 2)</td><td>Bit:</td><td>6</td></tr> <tr><td>Sensor 4 (limit value 2)</td><td>Bit:</td><td>7</td></tr> <tr><td>Sensor 1 (sensor error)</td><td>Bit:</td><td>8</td></tr> <tr><td>Sensor 2 (sensor error)</td><td>Bit:</td><td>9</td></tr> <tr><td>Sensor 3 (sensor error)</td><td>Bit:</td><td>10</td></tr> <tr><td>Sensor 4 (sensor error)</td><td>Bit:</td><td>11</td></tr> <tr><td>Sensor 1 (temperature max)</td><td>Bit:</td><td>12</td></tr> <tr><td>Sensor 2 (temperature max)</td><td>Bit:</td><td>13</td></tr> <tr><td>Sensor 3 (temperature max)</td><td>Bit:</td><td>14</td></tr> <tr><td>Sensor 4 (temperature max)</td><td>Bit:</td><td>15</td></tr> <tr><td>Sensor 1 (temperature min)</td><td>Bit:</td><td>16</td></tr> <tr><td>Sensor 2 (temperature min)</td><td>Bit:</td><td>17</td></tr> <tr><td>Sensor 3 (temperature min)</td><td>Bit:</td><td>18</td></tr> <tr><td>Sensor 4 (temperature min)</td><td>Bit:</td><td>19</td></tr> <tr><td>Digital input 1</td><td>Bit:</td><td>20</td></tr> <tr><td>Digital input 2</td><td>Bit:</td><td>21</td></tr> <tr><td>Digital input 3</td><td>Bit:</td><td>22</td></tr> <tr><td>Digital input 4</td><td>Bit:</td><td>23</td></tr> <tr><td>Digital input 5</td><td>Bit:</td><td>24</td></tr> <tr><td>Digital input 6</td><td>Bit:</td><td>25</td></tr> <tr><td>Digital input 7</td><td>Bit:</td><td>26</td></tr> <tr><td>Digital input 8</td><td>Bit:</td><td>27</td></tr> <tr><td>Sensor change sensor 1 due</td><td>Bit:</td><td>28</td></tr> <tr><td>Sensor change sensor 2 due</td><td>Bit:</td><td>29</td></tr> <tr><td>Sensor change sensor 3 due</td><td>Bit:</td><td>30</td></tr> <tr><td>Sensor change sensor 4 due</td><td>Bit:</td><td>31</td></tr> <tr><td>Next service due</td><td>Bit:</td><td>32</td></tr> </table>	Sensor 1 (limit value 1)	Bit:	0	Sensor 2 (limit value 1)	Bit:	1	Sensor 3 (limit value 1)	Bit:	2	Sensor 4 (limit value 1)	Bit:	3	Sensor 1 (limit value 2)	Bit:	4	Sensor 2 (limit value 2)	Bit:	5	Sensor 3 (limit value 2)	Bit:	6	Sensor 4 (limit value 2)	Bit:	7	Sensor 1 (sensor error)	Bit:	8	Sensor 2 (sensor error)	Bit:	9	Sensor 3 (sensor error)	Bit:	10	Sensor 4 (sensor error)	Bit:	11	Sensor 1 (temperature max)	Bit:	12	Sensor 2 (temperature max)	Bit:	13	Sensor 3 (temperature max)	Bit:	14	Sensor 4 (temperature max)	Bit:	15	Sensor 1 (temperature min)	Bit:	16	Sensor 2 (temperature min)	Bit:	17	Sensor 3 (temperature min)	Bit:	18	Sensor 4 (temperature min)	Bit:	19	Digital input 1	Bit:	20	Digital input 2	Bit:	21	Digital input 3	Bit:	22	Digital input 4	Bit:	23	Digital input 5	Bit:	24	Digital input 6	Bit:	25	Digital input 7	Bit:	26	Digital input 8	Bit:	27	Sensor change sensor 1 due	Bit:	28	Sensor change sensor 2 due	Bit:	29	Sensor change sensor 3 due	Bit:	30	Sensor change sensor 4 due	Bit:	31	Next service due	Bit:	32
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Tab. 23: 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
	2011/65/EU
	2015/86/EU
Harmonisierte Normen:	EN 60204-1:2006
Harmonized standards:	DIN EN 61000-6-2:2005
	DIN EN 61000-6-3:2007

Dokumentationsbevollmächtigter:	Lutz-Jesco GmbH
Authorized person for documentation:	



Heinz Lutz	Lutz-Jesco GmbH
Geschäftsführer / Chief Executive Officer	Am Bostelberge 19
Lutz-Jesco GmbH	30900 Wedemark
Wedemark, 12.03.2020	Germany

14 Index**B**

Battery26

C

Commissioning19

Configuration19

D

Design8

Dimensioned drawings11

Dimensions11

Drillhole dimensions11

Outside dimensions11

E

Electrical installation12

Ethernet17

EU Declaration of Conformity31

F

First steps19

Foreseeable misuse7

G

General warnings5

H

Handling instructions

Marking4

Hazards due to non-compliance with the safety instructions5

Horn15

I

Inductive load17

Installation

Connecting the sensor14

Connecting the signal technology15

Installation example8

Installation on the wall12

Intended purpose7

Intended use7

Internal fuse27

L

Latching20

M

Maintenance intervals25

N

Network

Ethernet17

Modbus addresses29

Network settings21

Notes for the Reader4

O

Operation23

Optocoupler16

P

Personnel qualification5

Personnel tasks6

Product description8

Product warranty7

R

Rating plate9

Relays15

S

Safety5

Scope of delivery8

Sensor error28

Sensors

configuring19

Connecting14

maintain25

test14

Specialist staff5

T

Technical data10

Terminal connection13

Trained electricians5

Trained persons6

Trend display24

Troubleshooting28

U

Update26

W

Warnings

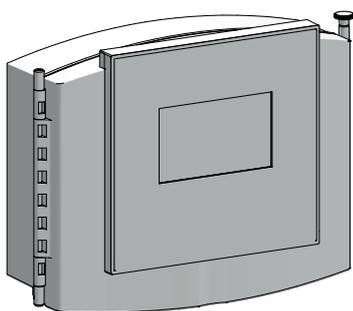
General warnings5

Marking4

Warning sign

Explanation4

Working in a safety-conscious manner5



Lutz-Jesco GmbH

Am Bostelberge 19
D-30900 Wedemark

Phone: +49 5130 5802-0
info@lutz-jesco.com
www.lutz-jesco.com

Operating instructions
Gas warning device **EASYCON GW**