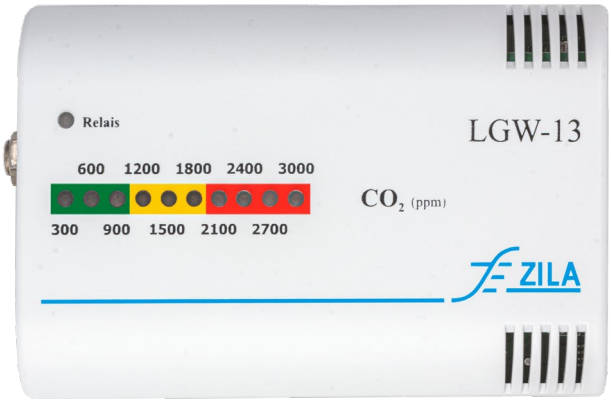
Mounting and operating instructions

Indoor Air Quality Guard

LGW-13L | LGW-13S

CO_2 Detector



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1) Scope of Delivery

- Indoor Air Quality Guard LGW-13L or LGW-13S
- Material for wall-mounting
- 24V power supply (optional)

2) Product description

The LGW-13 is a universally applicable CO_2 detector. The device has an optical (LED) and an acoustic warning signal output (horn). Furthermore, a switching function for common 24 V actuators is integrated for use in industrial and domestic applications. The CO_2 sensor is integrated in a compact housing, made of white polycarbonate (IP 20), and based on the optical measuring principle "NDIR" (non-dispersive infrared absorption measurement). The device is available in various measuring ranges from 0...1 vol%. The LGW-13 has an integrated function monitoring and is maintenance-free.

3) Product features

3.1 Measuring range

The device measures the CO_2 concentration in the ambient air in the standard range of 0...3000ppm. Other measuring ranges up to 1.0 vol% are available upon request.

3.2 Functionalities

- Can be used as a CO_2 sensor with a 0-10V and 4-20mA signal output (only supported by the LGW-13L)
- Suitable as a tabletop unit with a power supply or for wall and surface mounting
- Air quality traffic light with 10 LEDs
- Automatic control and switching function for 24 V devices, depending on the CO_2 limit
- Integrated alarm horn with 2 volume levels

3.3 Technical data

Dimensions: (LxWxH): 120x80x35mm

Further technical specifications can be found on the product-specific data sheet on our website www.zila.de.

3.4 Operating- and ambient conditions

- Operating temperature: -10...+50 °C
- Storage temperature: -40...+100 °C
- Relative humidity: 0..95 % (non-condensing)
- Air pressure: 900...1100 hPa

3.5 LED bar graph display

3.5.1 Internal LED

The LED in the top ventilation slots indicates the status of the device and the internal monitoring function. The monitoring function operates as soon as the device is supplied with power. If the LED lights up red, the device is on and works properly. If an error occurs, the LED is off.

3.5.2 10-digit LED CO_2 display

In the standard version, the 10-digit display shows the CO_2 concentration in the range of 0...3000ppm in 10 individual steps with 300ppm each. With increasing CO_2 concentration, more LEDs permanently turn on from left to right. When

reducing the CO_2 concentration in accordance with the above steps, the corresponding LEDs turn off as well.

3.5.3 Relay LED

The LED on the left side above the 10-digit display indicates the switching state, when the actuators are connected properly. If the CO_2 limit is exceeded and the switching relay is triggered, the LED lights up yellow.

3.6 Standards and Guidelines

The Indoor Air Quality Guard LGW-13 complies with the following European standards and guidelines:

- 2014/30/EU (EMC Directive)
- DIN EN 61000-3-3:2014-03
- DIN EN 61000-3-2:2015-03

4) General safety instructions

- Read the safety instructions carefully and store the mounting and operating instructions well.
- Mounting, commissioning and electrical connection of the LGW-13 without power supply may only be done by experts.
- Repair may only be done by experts.
- The mentioned protection classes only apply if the device is mounted correctly and the wires are connected properly.
- Only operate the device at the given voltage.
- Modifications and backfitting to the device are prohibited and release us, ZILA GmbH, of any guarantee and liability.

5) Mounting and Commissioning

5.1 Fitting position

For an optimal indoor air quality, we recommend a mounting height "at eye level", depending on the application. This means that the seat height of people in offices with sedentary activities is crucial for the mounting height.

The proper mounting position is horizontally.

5.2 Mounting options

5.2.1 Wall and surface mounting

You can mount the device on a wall or a surface in a few steps.

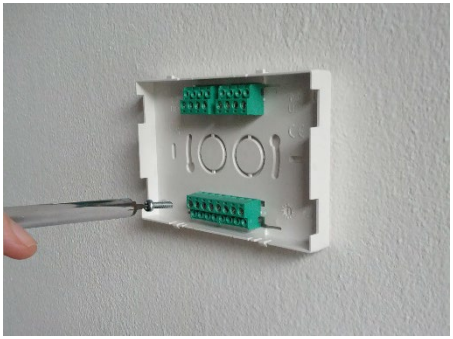
***Note**: The following pictures were provided by the manufacturer of the housing and is to illustrate the mounting of the housing only. Even though the actual device deviates from this image, the procedure does not change during mounting.*

Step 1: Loosen bottom side of the housing from the cover by opening the holder.

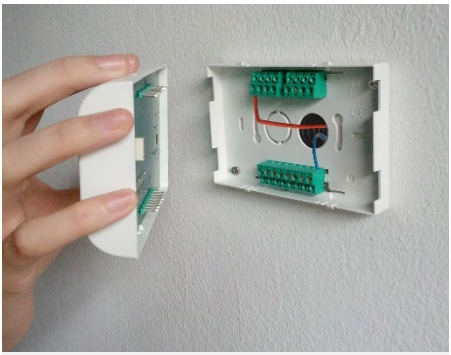
Step 2: Place the bottom side as straight as possible on the wall in order to obtain a drilling template. Then drill the holes.

Step 3: Mount the bottom cover with the supplied material on the wall.

Caution: When mounting on a surface or a wall, the electrical wires must be fitted through the hole in the middle of the bottom case before firmly mounting the base plate on the wall. Connect the electric wires according to the circuit diagrams.



Step 4: Take the upper part of device and put it into the holder of the wall-mounted base plate. Close the device by pushing the top part. The LGW-13 is completely assembled when it snaps into the holder.



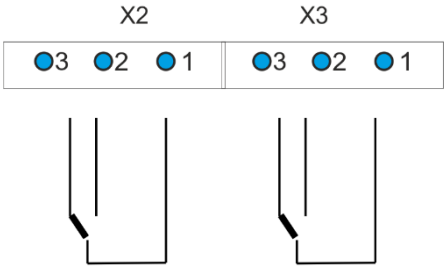
Caution: Electrical connection exemplary! For detailed information, please refer to the sections 'Commissioning' or 'Actuator connection.'

5.3 Tabletop unit with power supply

In case a power supply is included in the scope of your delivery, connect it with the device by using the AC adapter jack on the left side wall of the upper housing cover.

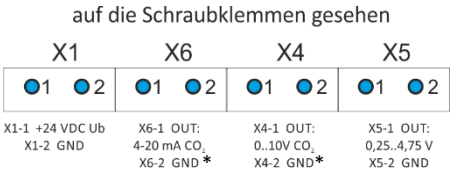
6) Electrical connection

The upper section of the circuit board is provided for the electrical connection of additional devices, such as 24-volt fans. Ventilation elements can be connected via the terminals shown below.



Looking at the pins

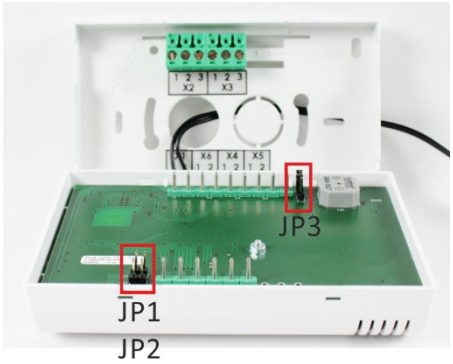
As shown in the picture below, the different signal outputs of the sensor can be tapped via the terminals X4, X5, X6. The terminal X1 is the current supply, unless the device is operated by the power supply.



* only supported by the LGW-13L

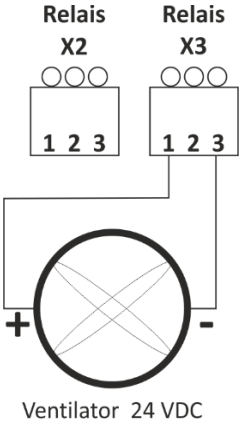
Looking at the pins

The jumpers are located on the circuit board next to the PINs, which are inserted into the terminals on the base plate when closing the housing.



7) Actuator connection (examples)

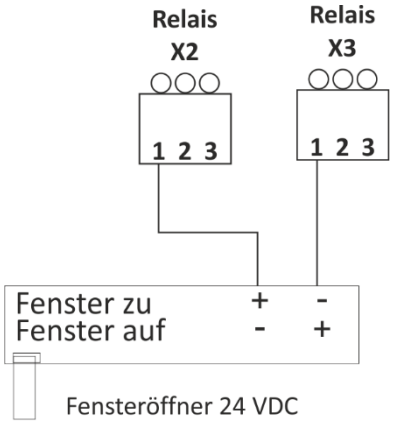
7.1 24VDC ventilation devices



Configuration of ventilation devices:
JP1 and JP2 closed
Ventilator-Connect on X3-1 and X3-3

7.2 24VDC electric window opener

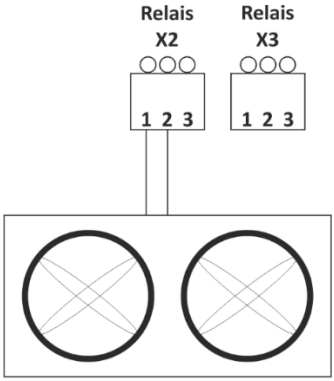
The relay of the LGW-13 switches the applied supply voltage (+ 24VDC) of JP1 and the ground GND of JP2 alternately to the voltage input of the window opener.



Window opener configuration:
JP1 and JP2 closed
FOE-Connect on X2-1 and X3-1

7.3 Fans with heat recovery

The relay of the LGW-13 switches as a potential-free contact with a ventilation device with heat recovery. It normally consists of a supply and an exhaust fan, as well as an own control for the ventilation stages. Optionally, these fans have a connection for an external CO_2 switch. In this way, the ventilation unit is connected with the Indoor Air Quality Guard LGW-13.



Fans with heat recovery

Configuration for heat recovery devices:
JP1 and JP2 open
WRG-Connect on X2-1 and X2-2

8) Maintenance

The Indoor Air Quality Guard LGW-13 is maintenance-free, thanks to the NDIR technology.

Depending on the application, we recommend a regular calibration of the device.

9. Support

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