ZILA

Mounting- and Operating Instructions

ZMF-100-IR

CO$_2$ Sensor

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CE

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2. Product description

The ZMF-100-IR is a carbon dioxide CO2 sensor, designed solely for measuring the carbon dioxide concentration in the ambient air, under the operating conditions mentioned below. The device is available in different measuring ranges and has an internal error monitoring. The measurement of the carbon dioxide CO2 concentration takes place via the optical measuring principle NDIR (non-dispersive infrared absorption measurement). With the integrated 0...10V or 4...20mA output signal, the measurement signals can be evaluated by a downstream device.

The sensor unit is located in an aluminum housing and is mounted on a diffusion opening. The cable entry is realized via cable glands. The device is powered via 24 V DC and can be mounted on the wall.

3. Product features

3.1. Measurement principle

The CO2 sensor ZMF-100-IR measures the absolute CO2 concentration in the ambient air quickly and accurately with a dual-beam infrared photometer (NDIR). The measuring range is linear.

3.2. Measurement ranges

The sensor measures the CO2 concentration in the ambient air in the range of 0...3000ppm. Other measuring ranges up 5,0vol% (50.000ppm) are available on request:

0…3000ppm	0,3vol%, Standard
0…5000ppm	0,5vol%
0…6000ppm	0,6vol%
0…10000ppm	1,0vol%
0…20000ppm	2,0vol%
0…30000ppm	3,0vol%
0…50000ppm	5,0vol%

3.3. Functions

- usable as a CO2 sensor with 0…10V or 4…20mA signal output

3.4. Technical specifications

Dimensions (LxWxH): 90x85x65 mm

Further technical specifications are given in the product specific data sheet on our website www.zila.de.

3.5. Operational- and environmental conditions

- operating temperature range: -10...+50 °C
- storage temperature range: -40...+100 °C
- relative humidity: 15 to 95% (non-condensing)
- air pressure: 900...1100 hPa

3.6. Standard and guidance

The CO2 sensor ZMF-100-IR is consistent with the requirements of the following European standards:

- 2014/30/EU (EMC Directive)
- DIN EN 61000-6-2
- DIN EN 61000-6-4

The declaration of conformity to the ZMF-100-IR can be found on our website www.zila.de.

4. General instructions

CAUTION: *Poisoning with carbon dioxide (CO2) is life threatening!*	
CAUTION: *Under certain circumstances, the CO2 sensor ZMF-100-WE cannot measure the CO2 concentration in the ambient air (power failure). Users and operators of plants are in charge of personnel safety and security according to applicable laws.*	
CAUTION: *The ZMF-100-IR must not be used in areas where explosive or flammable gas mixtures may occur!*	

- Read the instructions carefully
- Keep the instructions
- Mounting, commissioning and electrical connection allowed for experts only
- Repairing is only allowed for experts only
- The mentioned international protection marking is only guaranteed when the device is built-in correctly and the electrical cables are proper connected
- Only operate the device with the correct power supply
- Modification of the device is forbidden and releases the ZILA GmbH of any guarantee and liability

5. Mounting and Commissioning

5.1. Mounting

The ZMF-100-IR has to be mounted on a solid, flat and dry wall. The ambient conditions must be adhered.

When mounting outside, a protection against direct weather influences is necessary.

The device must be installed protected against splash water and condensate.

Installation in damp areas and hazardous areas is prohibited.

Carbon dioxide CO2 is heavier than air and sinks to the ground. When using the ZMF-100-IR for personal protection, mounting at ground level is recommended.

5.2. Electrical connection

seen on the screw
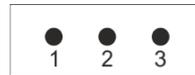
1 0V
2 4-20mA or 0-10V
3 +24V

connecting cable: Shielded cable with 3x1,5mm² Cu; maximum load 450 Ohm (at 4-20mA)

5.3. Commissioning

Since the CO2 sensor ZMF-100-IR is a sensitive measuring device, an appropriately cautious handling of the device is recommended.

Ensure prior to installation and commissioning, that the environmental conditions are suitable for the use of the device.

Remove the sensor protective cap before operation.

Make sure that the CO2 sensor is connected correctly and that the power supply is switched on.

6. Calibration

A calibration of the device is not necessary with standard applications. An expert may perform a calibration if required.

7. Maintenance

Thanks to the NDIR technology, the CO2 sensor ZMF-100-IR is maintenance free.

Depending on the application, a regular calibration of the device is advised.

8. Support

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