PDS 37.037 | en Product Data Sheet | EGQ212, 222

EGQ212, 222: NDIR CO_2 and temperature sensor

How energy efficiency is improved

Enables the demand-led control of ventilation systems and reduces energy consumption; the EGQ222F002 and EGQ212F002 has a dual-beam reference measuring method, which is both non-drifting and long-term stable, thereby providing accurate measurement.

Areas of application

Selective measurement of dioxide concentration and room air temperature in rooms

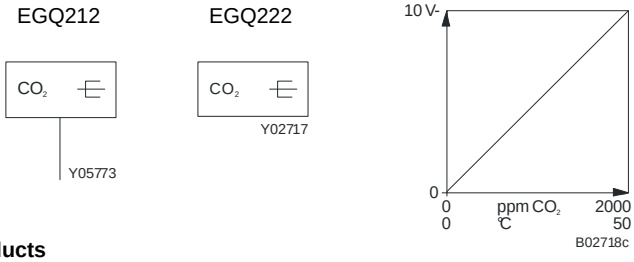
Features

- Active device for measured value acquisition
- Versions for room air and ducting
- With temperature compensation and 12-point calibration
- EGQ222: NDIR CO_2 sensor with dual-beam technology is suitable for fitting directly to walls
- EGQ212: NDIR CO_2 sensor with dual-beam technology; supplied with fixing bracket and seal for duct mounting

Technical description

- These sensors meet the requirements of the following standards: DIN EN 13779, DIN EN 15751, VDI 6038 and 6040
- EGQ212: 30 mm ø sensor tube made of black, glass fibre-reinforced thermoplastic
- EGQ212: immersion depth 140…156 mm
- EGQ222: housing made of pure white, fire-retardant thermoplastic (RAL 9010), 76 × 76 mm
- Screw terminals for wires max. 1.5 mm²

Schemas and diagrams



Products

Type	Description
EGQ212F002	NDIR CO_2 and temperature sensor fitted in duct
EGQ222F002	NDIR CO_2 sensor fitted in room, accessory (external temperature sensor set)

Technical data

Electrical supply

Power supply EGQ212	24 V~/= ± 20%
Power supply EGQ222	24 V~/= ± 20%
Power consumption	< 3 W
Ready for operation	within 2 min

Version

Range	
CO_2	0…2000 ppm
Temperature	0…50 ℃
Accuracy of measurement	
CO_2 (T = constant) 1)	± 50 ppm 2)
Temperature 3)	± 0.5 ℃
Output signal	
CO_2 (0…2000 ppm)	0…10 V, load > 2 kΩ
Temperature (0…50 ℃)	0…10 V, load > 2 k Ω
Measurement cycle EGQ212	<1,4 s
Measurement cycle EGQ222	<1,4 s

Permitted ambient conditions

Operating temperature	0…50 ℃
Humidity	0…95% rh
	no condensation

Installation

Weight (kg)	0.3

Standards, guidelines and directives

Protection type EGQ212 (head)	IP 54 (EN 60529)
Protection type EGQ222	IP 30
CE conformity as per	
EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-3

Additional information

Fitting instructions EGQ212	MV 505877
Fitting instructions EGQ222	MV 505878
Dimension drawing EGQ212	M04347
Dimension drawing EGQ222	M07634
Wiring diagram EGQ212	A05842
Wiring diagram EGQ222	A04674

1) For variable temperature 0...50 ℃: tolerance eq uates to ±5% of the indicated value and min. ±50 ppm (test medium: reference gas 1000 ppm ±2%). If there is high-frequency interference, the measuring accuracy may be impaired

2) If subject to high-frequency interference, the measuring accuracy may be impaired.

3) As per EN 15500 article A.3.2.2.2

Accessories

Type	Description
0303124000*	Recessed junction box
0313347001*	Intermediate cover plate for 76 × 76 for EGQ222
0370560011	Cable screw fitting (Pg 11), of plastic, for cable of Ø 9…11 mm for EGQ212
0370421000	External temperature sensor set for EGQ222F002 CO_2 sensor

*) Dimension drawing or wiring diagram are available under the same number

Operation

The CO_2 measuring principle is based on infra-red spectroscopy. The greater the CO_2 content in the room air, the lower the penetration of infra-red light. The electronic evaluation unit calculates the CO_2 concentration from this.

Engineering and fitting notes

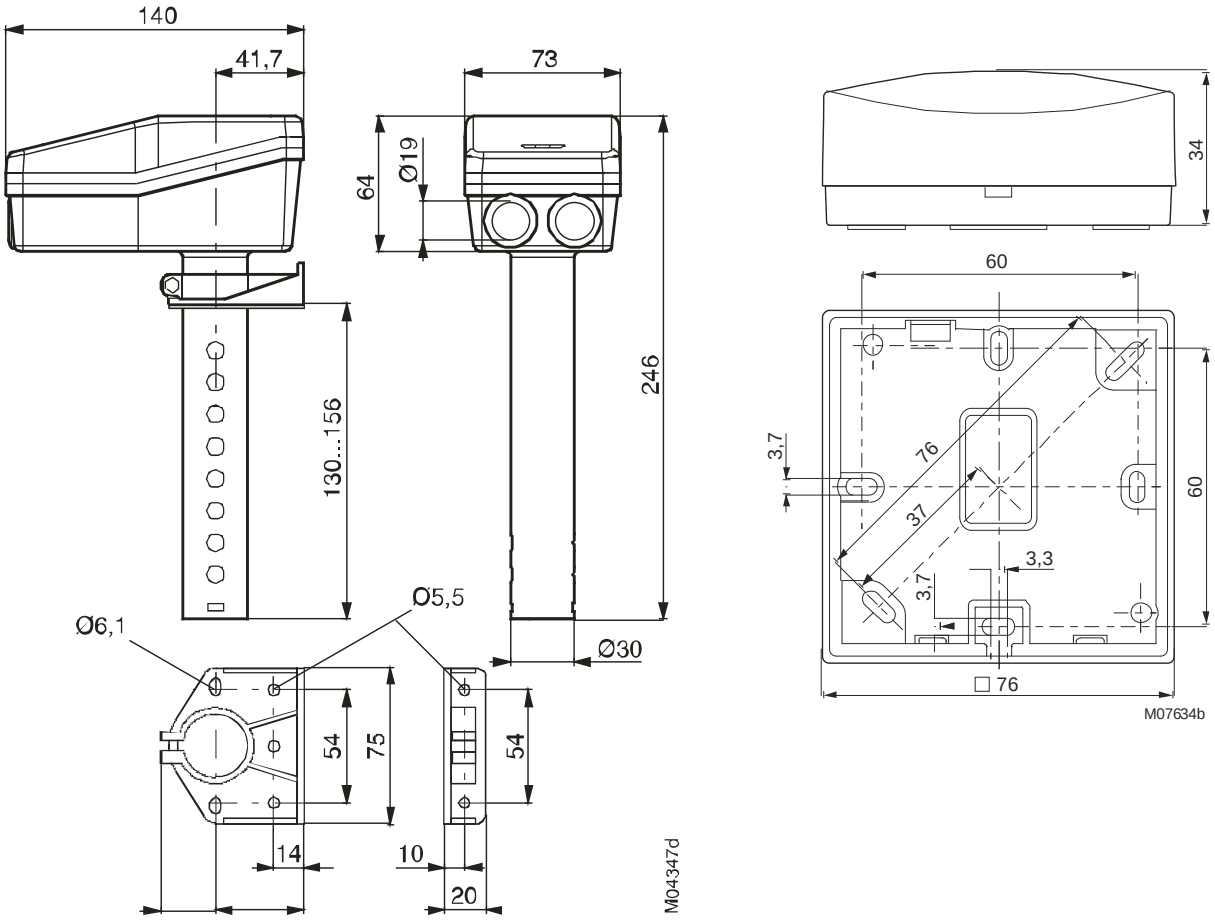
Local safety regulations must be observed. The CO_2 sensor must not be used for measuring safety levels of gas.
The sensor should be fitted in a place that is representative of CO_2 levels normally, i. e. 1.5 to 2 m above floor level when fitted in a room. The sensor should be located where it has a good throughflow of air, as is the case with temperature sensors, for instance.
In any case, it should not be located nearer than about one metre to the room occupants, because of the high CO_2 content of exhaled air.
To prevent the exchange of gas between the surrounding air and the duct air, the duct housing should be well sealed.

Note
In general, all CO_2 sensors are sensitive to knocks and dust, because they are based on an optical measuring principle (NDIR non-dispersive infra-red). The drift compensation facility for the CO_2 sensors works only under normal levels of atmospheric pollution, such as occur in offices, schools and the home.

Definition of outputs in the event of a malfunction (only EGQ222)

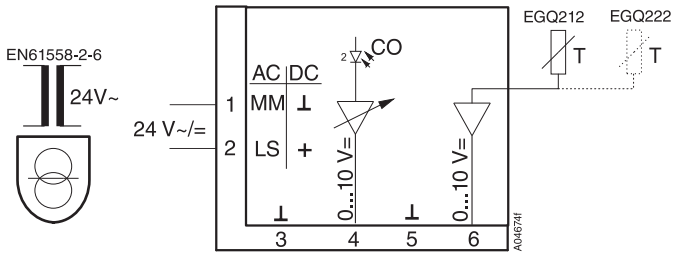
- Error CO_2 measurement: output CO_2 alternating min/max (approx. 1 Hz)
- Error temperature measurement: output temperature alternating min/max (approx. 1 Hz)
- System error (power supply etc.): both outputs alternating min/max (approx. 1 Hz)
- Under normal conditions, min and max are 0 V or approx. 10.2 V

Dimension drawing



Wiring diagram

EGQ222F002/EGQ212F002



Accessories

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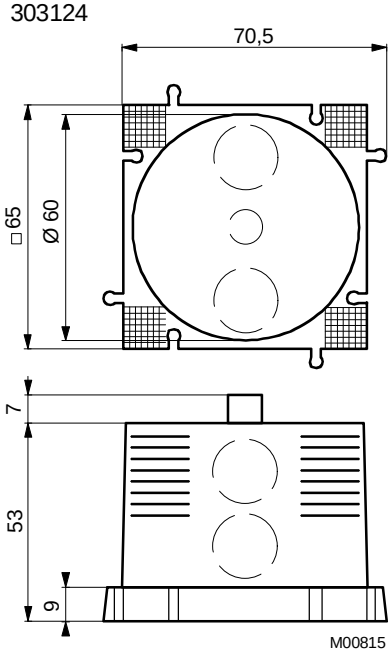

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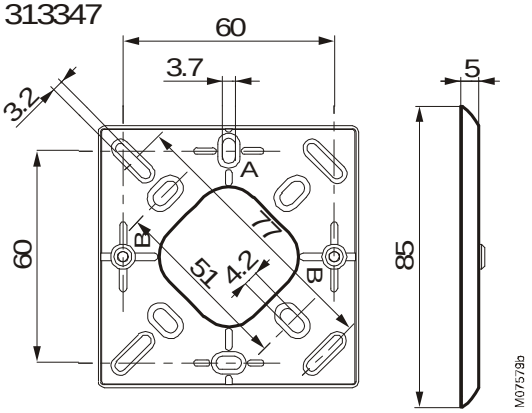

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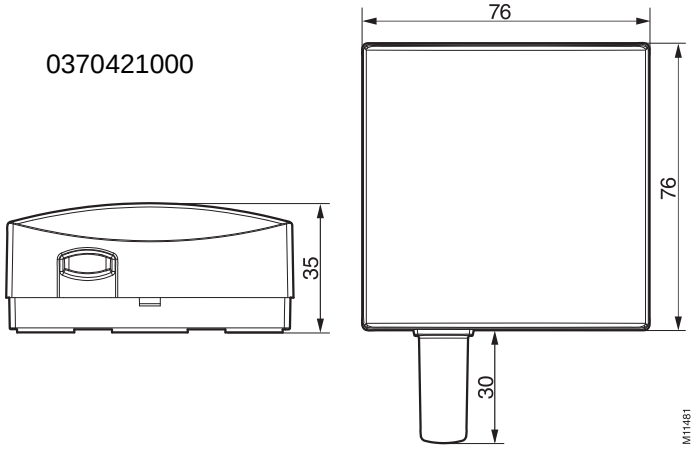

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