

## AQ-Transmit Datasheet (Air Quality Transmitter)



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## 1. Properties

The AQ-Transmit determines with the help of a specific two-beam infrared photometer, the concentration of carbon dioxide in the air mixture at an ambient temperature of -10 to +50° C (measuring range 0-3,000 ppm). It is compact, robust, easy to handle, in normal applications maintenance-free and therefore in particular suitable for monitoring air quality in interior rooms (for e.g. conference rooms, low-energy houses). The attractive housing is made of plastic and can be mounted on the wall or directly on in-wall connectors.

The AQ-Transmit infrared measuring system detects the concentration of carbon dioxide faster, more accurately and at less cost than conventional infrared systems because;

- The measured signals are evaluated and processed according to a new digital algorithm and,
- The material and construction of the sample cell are novel

The infrared measuring system determines the absolute CO<sub>2</sub> content of the surrounding air, monitors itself continuously and signals malfunctions of the hardware and software. The whole measuring range is linear. Power supply occurs via 24 V DC.

Basic processing and output of the measured values (linear output, either 4-20 mA or 0-10 V) are integrated into the measuring system. Evaluation and further processing of the measured values occur in a downstream device according to the users specifications (for e.g. ventilation system, limit monitor, display, programmable logic controller). For connection to Ethernet, a special module is available which supplies the net with the measured values.

In normal applications calibration is not necessary, however, if required, calibration can be carried out by an expert.

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## 2. Design of the gas measuring system

The two-beam infrared sensor is mounted in a plastic housing on a sensor holder above the diffusion opening. In addition, a transmitter containing a signal amplifier and an output of 4-20 mA or 0-10 V is arranged in the housing. The transmitter based on the three-wire system processes and transmits the measured signals (see Fig. 1).



**Fig. 1:** Gas measuring system AQ-Transmit.

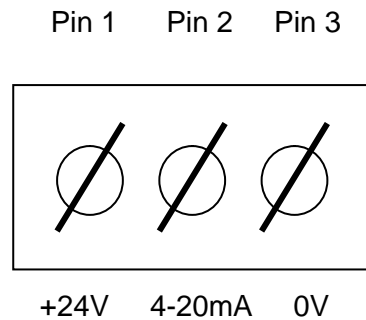
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## 3. Technical data

Transmitter		
Power supply		Screw terminals
	Electric current	about 100 mA
Connections	Pin 1	24 V DC $\pm$ 5%
	Pin 2	4-20 mA or 0-10 V
	Pin 3	0 V
Ambient temperature	-10° C to +50° C	
Air pressure	900 hPa to 1100 hPa	
Permissible humidity	15-95% relative humidity	non-condensing
Output	4-20 mA	max. load 450 $\Omega$
	or 0-10 V	min. 1 K $\Omega$
Housing	Plastic	white
Type of protection (housing)	IP 30	
Weight of housing	about 150 g	
Size of housing	about L78 x W78 x H35 mm	
Connecting cable	3x1.5 <sup>2</sup> Cu	shielded cable
Sensor		
Gas contact	via diffusion	
Measuring range	0-3,000 ppm CO <sub>2</sub>	
Heating-up time	5 min	
Accuracy	$\pm$ 2% at 25°C	FS (full scale)
Reproducibility	$\pm$ 1%	
Reaction time	about 30 s	

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## 4. Connection of AQ-Transmit



**Fig. 2:** Connection of AQ-Transmit. Pin 2 optionally 0-10 V.

The gas measuring system has to be connected to the downstream unit by means of a three-core shielded cable (see Fig. 2). Connection to circuit occurs via Pin 1 and Pin 3, reading of the measured values via Pin 2 (either 4-20 mA or 0-10 V).

## 5. Calibration of the gas measuring system

The device is in normal applications maintenance-free, calibration therefore usually not necessary. If required, calibration can be carried out by a specialist.

## 6. Other

The user should test whether the gas measuring system AQ-Transmit is suitable for his application under the given conditions. Special attention has to be paid to compatibility of materials: For e.g. the sample cell must not corrode under any circumstances and the filters must not become opaque.

<p><b>WARNING</b>  <b>Personal Injury</b>          DO NOT USE these products as safety or Emergency Stop devices or in any other application where failure of the product could result in personal injury.  <b>Failure to comply with these instructions could result in death or serious injury.</b></p>	<p><b>CAUTION</b>          Do not exceed maximum ratings  <b>Failure to comply with these instructions may result in product damage.</b></p> <p><b>It is the customer's responsibility to ensure that this product is suitable for use in their application.</b></p>
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