



AQ-Alert Datasheet (Air quality monitor)



1. Properties

The AQ-Alert AirQuality monitor has been designed for the surveillance of air quality in interior rooms. The gas measuring system quickly and precisely determines the concentration of carbon dioxide in the air at an ambient temperature of -10 to +50° C. It contains a novel infrared measuring system which principally functions like a common two-beam-photometer. The measured signals are evaluated and processed using a new digital algorithm. AQ-Alert is compact, light-weight, maintenance-free and offers long-term stability, while remaining an affordable system.

The device is plugged in a mains socket-outlet and can be mounted to the wall or simply placed on a shelf. A traffic light system on the front of the device displays the carbon dioxide content of the air and so is a measure of air quality:

- A green light corresponds to a CO₂ concentration of less than 1500 ppm: air quality is o.k.
- A yellow light indicates 1500 to 2500 ppm CO₂, and a short beep sounds: air is of low quality and ventilation is recommended.
- A red light corresponds to a CO₂ concentration of more than 2500 ppm. A short beep sounds twice: air quality is bad and ventilation is therefore necessary.
- When the device beeps five times and the red LED blinks, the CO₂ concentration has risen above 3000 ppm.

The infrared measuring system determines the absolute CO₂ content of the surrounding air, monitors itself continuously and signals malfunctions of the hardware and software.

The whole measuring range is linear. Power is delivered via the attached plug-in power supply.

There is no need for installation by an expert. The device is mobile, i.e. it can be put into operation simply by plugging the power supply unit into any mains socket outlet.

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

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, the housing contains a transmitter that processes and evaluates the measured signals, as well as a buzzer for the acoustic signalling of the measured value and three LEDs (green, yellow, red) for optical display (see Fig. 1).



Fig. 1: Gas measuring system AQ-Alert

3. Technical Data

Transmitter		
External power supply	Power supply unit	230 V
	Electric current	350 mA; output 24 V
Ambient temperature	-10° C to +50° C	
Air pressure	900 mbar to 1100 mbar	
Permissible humidity	15-95% relative humidity	
Housing	Plastic	White
Type of protection housing	IP 30	
Weight of product	Approx. 150 g	
Size of housing	Approx. L78 x B78 x H35 mm	
Optical display of the measured value	Green LED	[CO ₂] < 1,500 ppm
	Yellow LED	1,500 ppm < [CO ₂] < 2,500 ppm
	Red LED	[CO ₂] > 2,500 ppm
	Flashing red LED	[CO ₂] > 3,000 ppm
Acoustic display of the measured value	Buzzer 1x	[CO ₂] > 1,500 ppm
	Buzzer 2x	[CO ₂] > 2,500 ppm
	Buzzer 5x	[CO ₂] > 3,000 ppm
Malfunction	Hardware and software	Flashing yellow LED
Sensor		
Gas contact	via diffusion	
Measuring range	0-3.000 ppm CO ₂	
Heating-up time	5 min	
Accuracy	± 2%	F.S. (full scale)
Reproducibility	± 1%	
Reaction time	Approx. 30 s	

4. Connection

The AQ-Alert is connected to the mains with an attached plug-in power supply unit.

5. Calibration of the gas measuring system

In normal applications, the device is maintenance-free. Calibration is therefore usually not necessary. If required, re-calibration can be carried out by a specialist.

6. Other

The AQ-Alert has been designed in particular to monitor air quality in interior rooms. In other fields of application the user should test whether the gas measuring system is suitable under the given conditions. Special attention has to be paid to compatibility of materials: for example the sample cell must not corrode under any circumstances and the filters must not become blocked.

<p>WARNING Personal Injury 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. Failure to comply with these instructions could result in death or serious injury.</p>	<p>CAUTION Do not exceed maximum ratings Failure to comply with these instructions may result in product damage.</p> <p>It is the customer's responsibility to ensure that this product is suitable for use in their application.</p>
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