

## EGQ 110: Duct transducer, air quality (VOC)

### How energy efficiency is improved

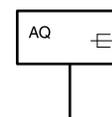
Allows demand-controlled regulation of ventilation systems and reduces energy consumption

### Features

- Measures the relative mixed gas concentration (organic components in the room air), such as tobacco smoke, kitchen vapours or human body odours
- Demand-based ventilation control in buildings such as restaurants and offices
- For measuring air quality in air ducts
- Automatic self-calibration through software algorithm
- Calibrated ex works and ready to use immediately
- The sensors have been developed according to the DIN EN 13779, DIN EN 15251, VDI 6038 and 6040 directives
- Mounting flange supplied



EGQ110F031



### Technical data

Power supply		
Power supply		15...24 V= (±10%) or 24 V~ (±10%)
Power consumption		Max. 1.5 W (24 V=)   2.9 VA (24 V~)
Peak inrush current		10 A < 2 ms
Outputs		
Output signal		0...10 V Min. load: 10 kΩ
Parameters		
Flow speed		Min. 3 m/s Max. 10 m/s
Readiness for operation		< 2 minutes (operational), 15 minutes (max. precision)
Time characteristic		
In moving air (3 m/s)		5 minutes
Measuring range		0...100%
Serviceable life		Typically 10 years
Sensor		VOC sensor, heated tin dioxide semi-conductor
Ambient conditions		
Ambient temperature		0...50 °C
Ambient humidity		Max. 85% rh non-condensing
Construction		
Connection terminals		Clamp connector 1.5 mm <sup>2</sup>
Cable inlet		M20 for cable Ø min. 5 mm, max. 8 mm
Housing		Yellow/black
Housing material		Polyamide 6
Filter unit material		Stainless steel, wire mesh
Sensor tube diameter		19.5 mm
Sensor tube length		180 mm
Weight		350 g
Standards and directives		
Type of protection		Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1. Mode of operation 1. Residential premises
	RoHS Directive 2011/65/EU	EN 50581

### Overview of types

Type	Properties
EGQ110F031	Duct transducer; VOC; 0-10 V



### Description of operation

The duct transducer measures the air quality. The output signal of the sensor (0...10 V) increases as the air quality worsens.

The conductivity of a heated tin oxide semiconductor sensor changes proportionately to the number of oxidisable gas molecules. Accordingly, the associated output voltage of the measuring element is increased by 0...10 V. It can detect traces of cigarette smoke, hydrogen, carbon monoxide, ethanol and ammonia.

As opposed to CO<sub>2</sub> sensors that selectively measure the concentration of a specific type of gas, mixed gas sensors measure over a broader range, i.e. the sensor signal does not provide information on the specific type of gas or its concentration in ppm. Due to the complex and constantly changing composition of the room air, it is, in fact, preferable that the sensor measures the room air quality over a wide range.

This product is not suitable for safety applications.

Other than this, the following restrictions apply:

- There may not be any dust in the ventilation duct.
- The duct transducer may not be used to measure corrosive gases.
- The product may not be mounted outdoors.

### Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product regulations must also be adhered to. Changing or converting the product is not admissible.

### Engineering and fitting notes



#### CAUTION!

Damage to device!

► Electrical devices may only be installed and fitted by a qualified electrician!

### Fitting

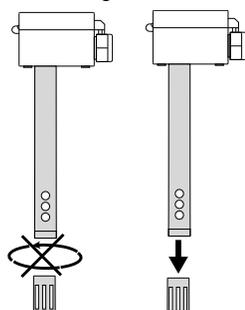
The sensor can be fastened using the mounting flange (recommended) or directly on the ventilation duct.

During installation, make sure the openings in the sensor tube are fitted in the direction of flow. The maximum ventilation speed is 10 m/s.

Make sure the sealing is good, so that there can be no exchange of gas between the duct air and the air outside.

### Notes for users

Air circulation may lead to particles of dirt and dust settling on the sintered filter that protects the measuring elements, which in turn may prevent the sensor from functioning properly.



After the filter has been dismantled, it can be cleaned by blowing it out using oil-free, filtered, compressed air, ultra-pure air, nitrogen or by rinsing it with purified water. Very heavily soiled filters should be replaced.

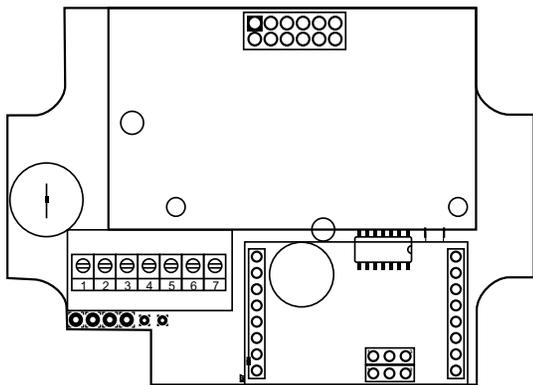
In normal ambient conditions, we recommend a maintenance interval of 1 year in order to be able to ascertain the specified level of precision.

### Disposal

When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

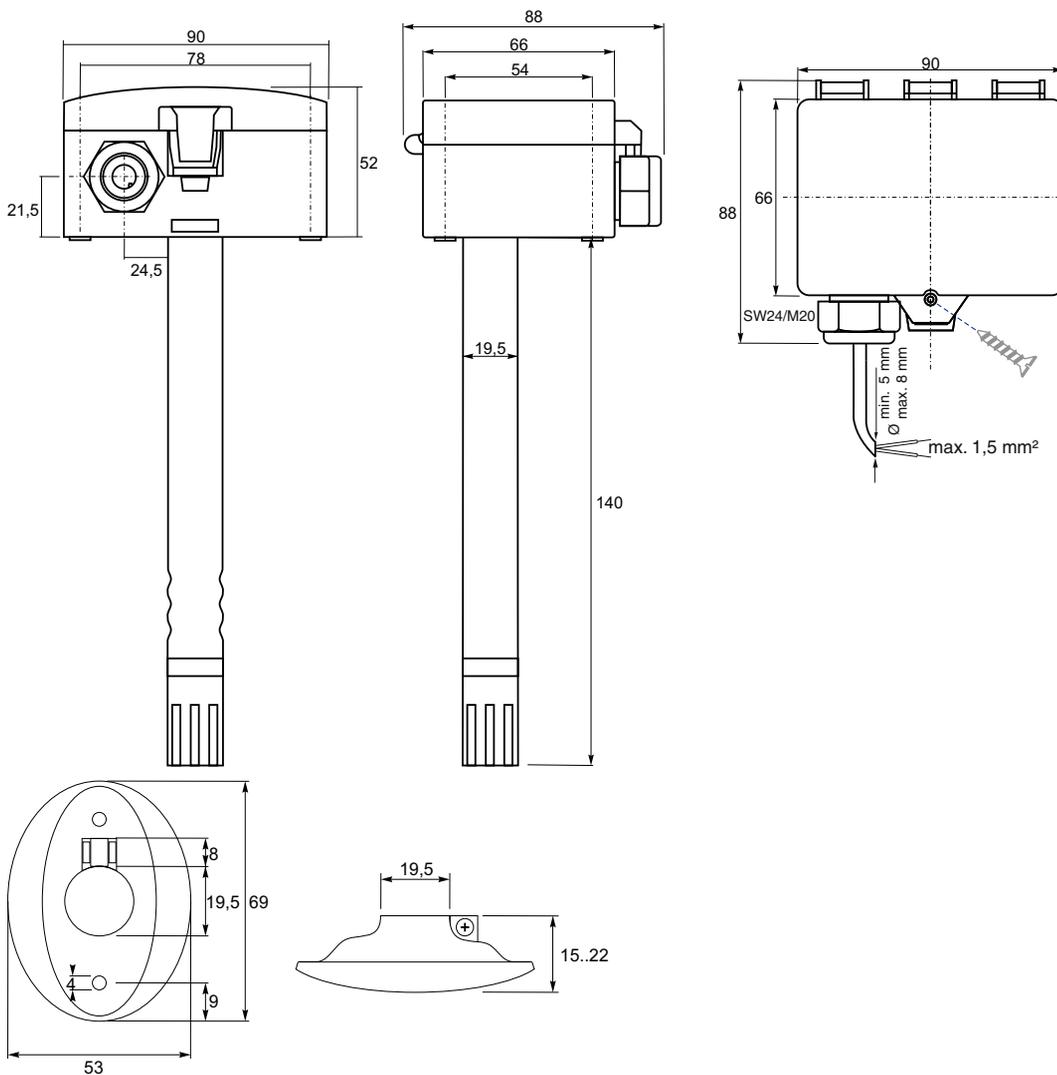
Connection diagram



Terminal #	Function
1	24 V
2	GND
3	Not used
4	Not used
5	Not used
6	Not used
7	VOC output 0...10 V (without offset adjustment)

Dimension drawing

[mm]



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