

VOC sensor



VTH-6202 / VTH-6242

- Air quality sensor
- Modbus
- With or without cable
- Simple installation

VOC air quality sensor

The VTH-62xx sensor is used to measure the air quality in ventilation ducts when the air handling system is to be demand controlled.

Air quality is measured on the basis of its content of volatile organic compounds, which are given off by people, furnishings, cleaning agents, building materials, etc.

VTH-6202 is a compact sensor with OJ QuickPlug™ Modbus connection, facilitating installation.

VTH-6242 is the same product as VTH-6202 but with a connection box instead of the fixed cable. This is especially relevant when the sensor is mounted far away from the controller.

The sensor builds on OJ Electronics' many years of experience within HVAC applications and is designed to provide optimum and reliable performance.



Air quality

Volatile organic compounds (VOC) comprise alcohols, aldehydes, ketones, esters, terpenes, aromatics and alkenes (methane). The VOC concentration is converted into a CO₂ equivalent.

High performance with a minimum of maintenance

The sensor has high resolution and is self calibrating. It utilises an advanced technology which has been used in the automotive industry for many years.

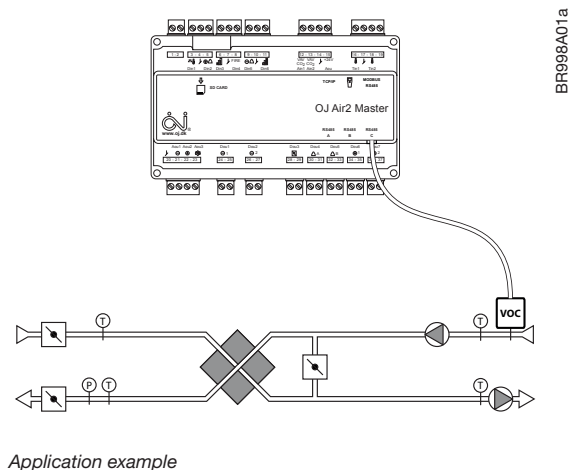
Simple and easy installation

- A version with a connector box for easy mounting in cases where longer cables length is needed.
- Pre-fitted 7m cable and connector, facilitating quick and safe installation. OJ QuickPlug™.
- Modbus compatibility with permanently configured protocol settings that prevent configuration errors.
- Compatibility with OJ AIR2 and OJ GreenZone™ systems.

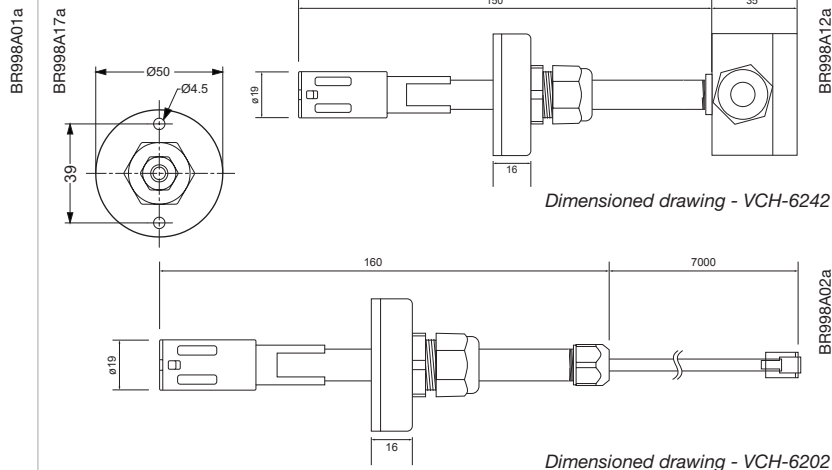
Applications

The sensor can be used to great advantage in applications such as:

- Demand-controlled ventilation in air handling systems.
- Demand-controlled ventilation in decentralised HVAC systems.



Application example



Description

For decades, the air quality in homes has been controlled on the basis of air temperature, humidity and CO₂ content. The air, however, contains many other substances which affect air quality.

Such substances are produced by people, fruit, building materials, furniture, cleaning agents and anything else that gives off odours – in other words anything that people can smell and which affects our comfort and health.

Now, thanks to modern sensor technology, it is possible to include such odours and substances in ventilation control using a VOC sensor. This improves the individual perception and effectiveness of ventilation.

Installation

The VOC sensor is installed in the ventilation duct using the accompanying bracket, which must be attached to a firm, level surface by means of two screws. The 18-30 V DC supply voltage (24 V DC nominal voltage) is provided via the Modbus connection.

The sensor should be positioned in such a way that the air flow in the duct is led unhindered through the measuring hole at the tip of the sensor. Although the VOC sensor is not affected by the position in which it is installed, it is advisable not to install the sensor in an upright position with the cable downwards as this may cause moisture to accumulate in the sensor.

PRODUCT PROGRAMME

TYPE	PRODUCT
VTH-6202	VOC sensor with 7000 mm cable
VTH-6242	VOC sensor with connection box (without cable)

TECHNICAL DATA

Supply voltage	18-30 V DC, nominal 24 V DC, via Modbus
Modbus	RS-485, 24 V DC, RJ12 connector (6P6C)
Modbus protocol	38.4 kBd, 1 start bit, 8 data bits, 2 stop bit, no parity
Modbus address, HTH-6202	Hex=6E / Dec=110
Modbus connection	1 x RJ12 6/6 connector
Cable length, pre-fitted	7000 mm (VCH-6202)
Connection box	Box with gland for cables ø5,5-12mm
Max. cable length	50 m (in low EMC environment)
Measuring range	450-2000 ppm CO ₂ -ækvivalent
Measuring accuracy	Typical ±150ppm, Max ±300ppm
Ambient temperature, operation	0/+50°C
Ambient temperature, storage	-25/+50°C
Ambient humidity	5-95 % RH
Flow rate	>0 m/s
Startup time	5 min
Response time	<5 min
Enclosure rating	IP32 / IP54
Dimensions	(see dimensioned drawing above)
Weight	35 g (without cable)

CE marking

VTH-62xx meets the requirements contained in the following standards:

EMC directive
 EN 61000-6-2:2005
 EN 61000-6-3:2007