Air Quality (VOC) Transmitters for Duct Mounting

QDT

Features

- **Low cost air quality measurement**
- **Used to determine the air quality, based on a mixed gas sensor (VOC sensor)**
- **To measure the air quality in offices, hotels, meeting rooms, convention centres, schools, airports, apartments, stores, restaurants etc.**
- **0-10 Vdc or 4-20 mA output (jumper selectable)**
- **As option also switch output**

Technical data

Sensor	VOC sensor (metal oxide)
Measuring range	0-100% air quality referred to calibration gas
Measuring accuracy	+/- 20% EW of final value (referred to calibration gas)
Power supply	24 Vac/dc
Current consumption	ca. 70 mA at 24V
Output(s)	0-10 Vdc 0 = clean air, 10 Vdc = polluted air or 4-20 mA (jumper selectable)
Switch output (optional)	potential free switch output 230 Vac 0.5A switch point adjustable from 0-100% of the output signal.
Ambient temp. range	-10 to +40°C
Detection of gases	not selective
Long-term stability	< 10% per year
Warm-up period	1 hour
Respone time	< 60 sec.
Probe length	190 mm
Mounting	With supplied (attached) flange
Housing material	Plastic
Housing dms	72x64x39 mm excluding cable entry gland
Protection	IP 65

Detectable gases

- Cigarette smoke
- Automobile exhaust
- Breath air
- Carbon dioxide (CO_2)
- Carbon monoxide (CO)
- Solvent fumes
- Alcohol fumes
- Acetone
- Acrylonitrile
- Ammonia
- Benzene
- Chlorine
- Dimethyl amine
- Ethane
- Ethylene
- Ethylene oxide
- Formaldehyde
- Hydrogen
- Hydrogen sulfide
- Isobutane
- Methane
- Methanol
- Methyl chloride
- Methylene chloride
- Methy ether
- Methyl acetate
- Methyl ethyl ketone
- n-Hexane 2
- n-Petane
- Propane
- R-11
- R-12
- R-502
- R-123
- Sulfur dioxide
- Vinyl chloride

Ordering

Type no.	Description
Air quality transmitter for duct mounting	
QDT	Output 0-10 Vdc or 4-20 mA (jumper selectable)
QDT S	Same as QDT and with switch output (normally open)

Air Quality (VOC) Transmitters for Duct Mounting

Application/Description

The QDT duct air quality transmitter is used to determine the air quality, based on a mixed gas sensor (VOC sensor).

The sensor is used

To measure the air quality in offices, hotels, meeting rooms, convention centres, apartments, stores, restaurants etc..

For a quantitative assessment of room air pollution with contaminating gases (cigarette smoke, body odour, exhaled breathing air, solvent vapours,emissions from building members and detergents).

To adjust the sensitivity regarding the maximum air contamination to be expected.

For ventilation of rooms on an as-needed basis, enabling energy conservation with air exchanges only taking place when the air is polluted.

Room air quality is to be understood as a subjective air quality, felt by human beings with their sense organs, preferably their olfactory organs. As perception varies from person to person and therefore, air quality is estimated differently, a general definition of criteria for room air quality is not possible.

The choice of the operating temperature allows within limits to influence the dynamic behaviour as well as the sensitivity against certain gases. The sensor‘s non-linearity is corrected by subsequent electronic signal processing.

The air quality sensor achieves a small amount of drift against humidity in the air as well as good stability.

The air quality sensor does not trace concentration of an individual gas, but assesses the mixed gas, i.e. measuring gas concentrations is not done selective and individually. Therefore, it is not feasible to specify gas concentrations in the unit ppm. Because of our ambient air‘s diverse composition consisting of most different gas and fragrance mixtures, a broadband VOC sensor is used to depict these to the optimum.

Detectable gases

Mixed gas, vapours of alkanoles, cigarette smoke, automobile exhaust gases, exhaled breathing air, combustion smoke (from wood, paper, plastics).

Other gases can be tested upon request and the correlation with the output signal can be specified.

Guidlines

This transmitter may only be used in an atmosphere of non-condensing, non-flammable, uncontaminated gas.

The power output is proof against short-circuiting. If overvoltage is applied at the power output, the apparatus will be destroyed.

If the apparatus is operated outside the ranges given in the specification, all claims under guarantee will be null and void.

Air Quality (VOC) Transmitters for Duct Mounting

Electrical connections

QDT

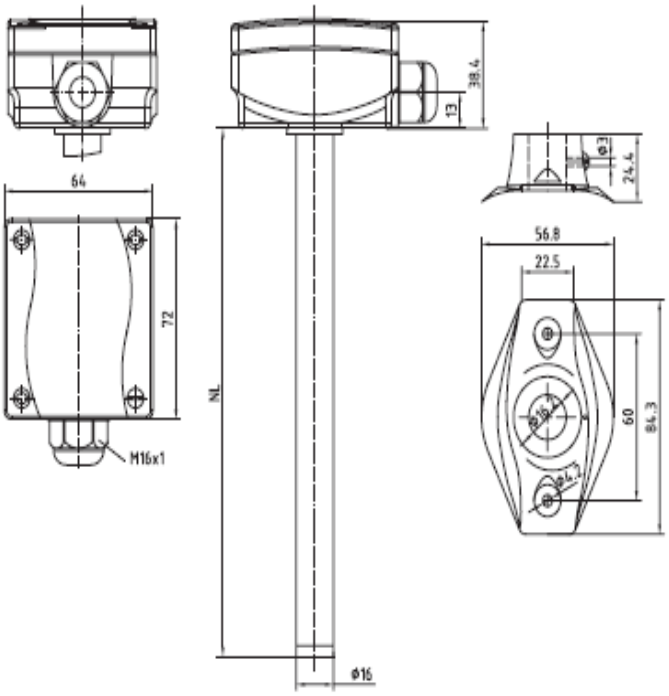
1 - GND
2 + Power supply 24 Vac/dc
3 GND
4 Output 0-10 Vdc or 4-20 mA

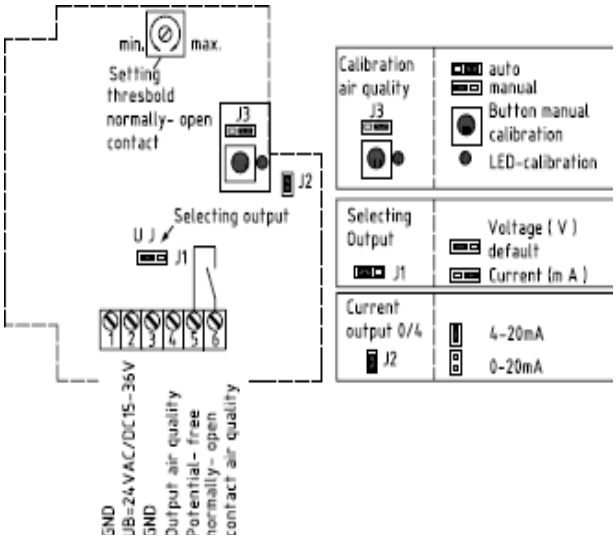
QDT S

1 - GND
2 + Power supply 24 Vac/dc
3 GND
4 Output 0-10 Vdc or 4-20 mA
5 Potential free
6 Normally-Open contact air quality

GND terminals 1 and 3 are PCB connected.

Dimensions (mm)





Note:
This air quality sensor must not be used as a safety-relevant device.

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