

KLQ-CO2

Duct air quality and CO₂ sensor



Summary

The sensor measures concentration of mixed gas (VOC) and CO₂ in the duct air. The CO₂ content is measured by a NDIR sensor in three ranges. Output signal is analogue signal 2x 0...10 V DC.

Applications

- Indication of air pollution in HVAC units for residential and conference rooms.
- For demand controlled ventilation in rooms with variable load (cinemas, meeting rooms etc.).

Function

The CO₂ contents in the air is measured by a NDIR sensor. The sensor is auto-calibrated every 7 days. To ensure correct execution of the calibration process, the sensor must be exposed to fresh air (300...400 ppm CO₂) at least once a week. The CO₂ sensor sensitivity is set by DIP switches in 3 ranges: 0...2000, 0...5000, and 0...10 000 ppm.

The VOC sensor has 3 sensitivity ranges (LOW, MEDIUM and HIGH – use LOW sensitivity for rooms with high load).

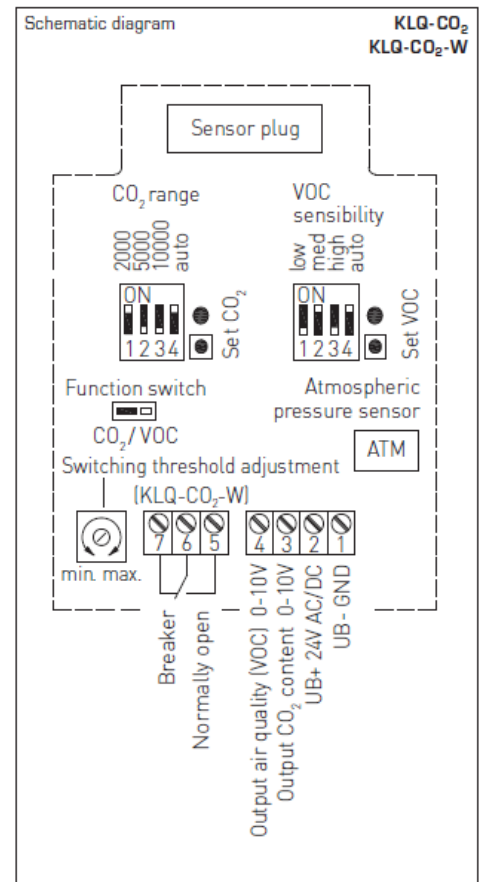
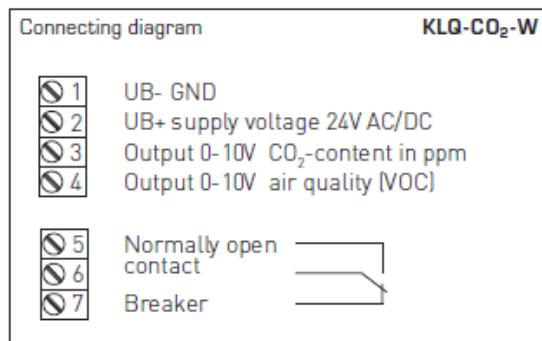
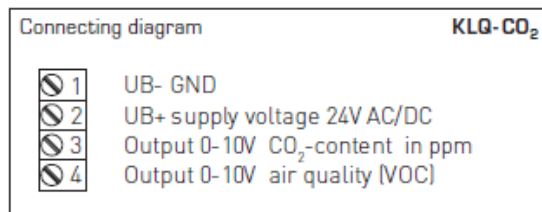
The sensor must not be used as safety or protective device!

Technical data

Power supply	24 V AC/DC
CO₂ sensor	optical (NDIR) – non-dispersive infrared technology
Measuring range	multi-range, 0...2000, 0...5000, and 0...10 000 ppm CO ₂
Output signal	0...10V DC or potential-free changeover contact
Measuring accuracy	+/- 70 ppm + 5 % of measured value
Pressure dependence	+/- 0.5 % of measured value / kPa (related to normal pressure)
Temperature dependence	< 5 ppm/K (referred to 20 °C)
Long-term stability	+/- 1% of max. value per year
Gas exchange	diffusive
VOC sensor	metal oxide with auto calibration
Measuring range	0...100% air quality referred to calibrating gas multi-range switching (LOW – MED – HIGH)
Output signal	0...10V DC (0 V – clean air, 10 V – polluted air) or with potential-free changeover contact (KLQ-CO2-W)

Measuring accuracy	+/- 20 % of final value, referred to the calibrating gas
Service life	> 5 years under normal conditions
Terminals	screw terminals for wires 0,14 – 1,5 mm ²
Dimensions	see below
Enclosure	polyamide, 30% fiber glass reinforced, white (similar to RAL9010)
Protection sheath	metal tube, Ø 20 mm, NL= 190 mm
Installation	with attached plastic flange optional galvanised steel
Protection class	III (according to EN 60730)
Protection degree	IP65 (according to EN 60529)

Terminals



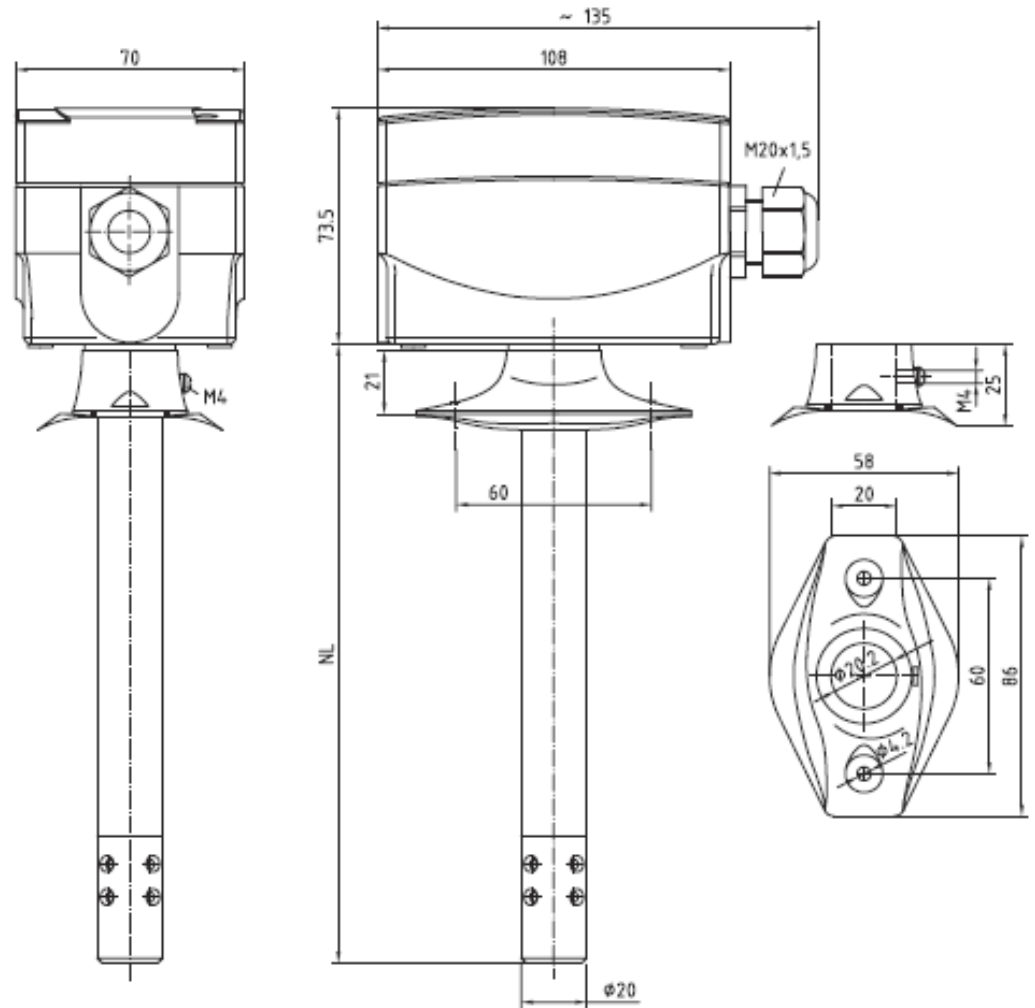
The calibration procedure is described in the installation manual which is attached to the product.

Switches

VOC (sensitivity adjustable)	DIP 1	DIP 2	DIP 3
VOC LOW	ON	OFF	OFF
VOC MEDIUM (default)	OFF	ON	OFF
VOC HIGH	OFF	OFF	ON
VOC calibration mode			DIP 4
Automatic self calibration			ON
Manual calibration			OFF

CO ₂ content (measuring range selectable)	DIP 1	DIP 2	DIP 3
0 ... 2000 ppm (default)	ON	OFF	OFF
0 ... 5000 ppm	OFF	ON	OFF
0 ... 10000 ppm	OFF	OFF	ON
CO ₂ calibration mode			DIP 4
Automatic self-calibration			ON
Manual calibration			OFF

Dimensions



NL = 190 mm