Duct air quality sensors/controllers (VOC), including mounting flange, self-calibrating, with multi-range switching and active/switching output

S+S REGELTECHNIK

The self-calibrating microprocessor-controlled duct air quality sensor AERASGARD® KLQ is used to determine the air quality on basis of a mixed gas sensor/VOC sensor (VOC = volatile organic compounds).

It is used:
- For air quality measurement in offices, hotels, meeting rooms and convention centres, apartments, stores, and restaurants, etc.
- For quantitative evaluation of room air pollution with contaminating gases (cigarette smoke, body perspiration, exhaled breathing air, solvent vapours, emissions from building members and cleaning agents)
- For adjustable sensitivity regarding the maximum air contamination to be expected
- For room ventilation as-needed, enabled by air changes only taking place when air is polluted while conserving energy at the same time.

The sensor's service life is depending on the type of burden and gas concentration and is more than 60 months under normal load conditions. The new design implies the alternative to choose between three sensibility ranges by means of DIP switches, comparable to three measuring ranges: LOW for low, MEDIUM (default, equivalent to the hitherto existing type of this device) for medium, and HIGH for high VOC sensibility.

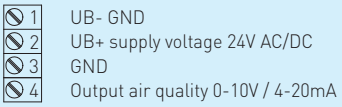
VOC is the abbreviation for volatile organic compounds. According to the definition by the World Health Organization WHO, VOC are organic substances with a boiling range from 60 to 250 °C. Ranking among VOC are for example compounds of the substance groups alkanes/alkenes, aromatic compounds, terpenes, halogenated hydrocarbons, esters, aldehydes, and ketones. There is a large number of native VOC, which in part are released into the atmosphere also in substantial quantities, e.g. terpenes and isoprene from forests.
For more information please refer to beginning of this chapter.

TECHNICAL DATA:

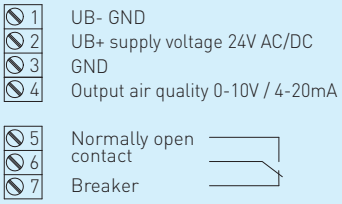
Power supply: ..... 24 V AC/DC, current consumption ca. 70 mA at 24 V
Sensor: ..... VOC sensor (metal oxide), **with automatic self-calibration**
Sensor protection: ..... sinter filter, exchangeable, screwed, easy to clean
Measuring range: ..... 0 ...100 % air quality; referred to calibrating gas;
multi-range switching (selectable via DIP switches)
VOC sensibility low, medium, high
Output: ..... 0 - 10 V (0 V = clean air, 10 V = polluted air) or
4 ... 20 mA (selectable via jumper) or
with potential-free changeover contact (24 V),
switchpoint adjustable from 0...100 % of output signal
Measuring accuracy: ..... ± 20 % of final value (referred to calibrating gas)
Ambient temperature: ..... 0 ...+ 50 °C
Detection of gases: ..... not selective
Electrical connection: ..... 0.14 - 1.5 mm² via terminals on circuit board
Long-term stability: ..... <10 % per year
Warm-up time: ..... 1 hour
Response time: ..... <60 s
Enclosure: ..... plastic, material polyamide, 30 % glass-globe-reinforced,
with quick-locking screws, colour pure white (similar RAL 9010)
Dimensions: ..... 72 x 64 x 39.4 mm (KLQ without display)
108 x 73.5 x 70 mm (KLQ-Display)
Protective tube: ..... metal, Ø 16 mm, nominal length NL = 190 mm,
Process connection: ..... by mounting flange, plastic (included in the scope of delivery),
galvanised steel optional
Protection class: ..... III (according to EN 60730)
Protection type: ..... IP 65 (according to EN 60529)
Standards: ..... CE-conformity, electromagnetic compatibility
according to EN 61326 + A1 + A2, EMC directive 2004/108/EC
Optional: ..... 8-digit display, cutout 36 x 14 mm (W x H),
for displaying actual air quality

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			**OFF**
Manual calibration			**ON**
Selection output (I)			**DIP 5**
Output 0 ... 20 mA			**OFF**
Output 4 ... 20 mA			**ON**

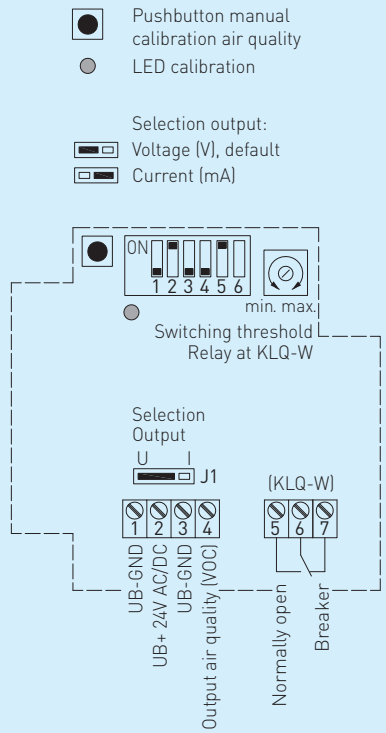
Connecting diagram **KLQ**



Connecting diagram **KLQ-W**



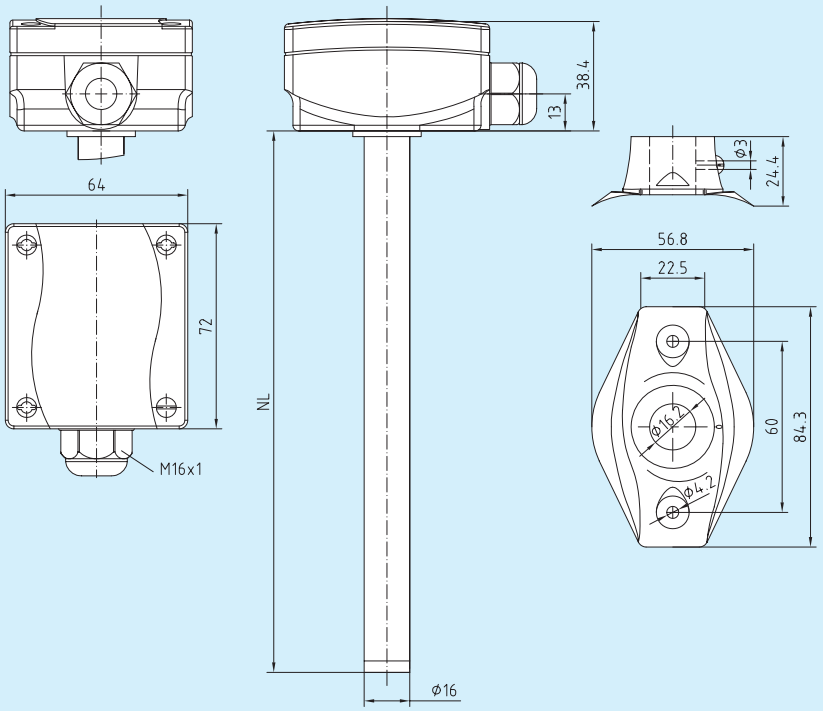
Schematic diagram **KLQ** **KLQ-W**



GND terminals (1) and (3) are connected on the circuit board.
DIP switch (6) is not assigned!

Dimensional drawing

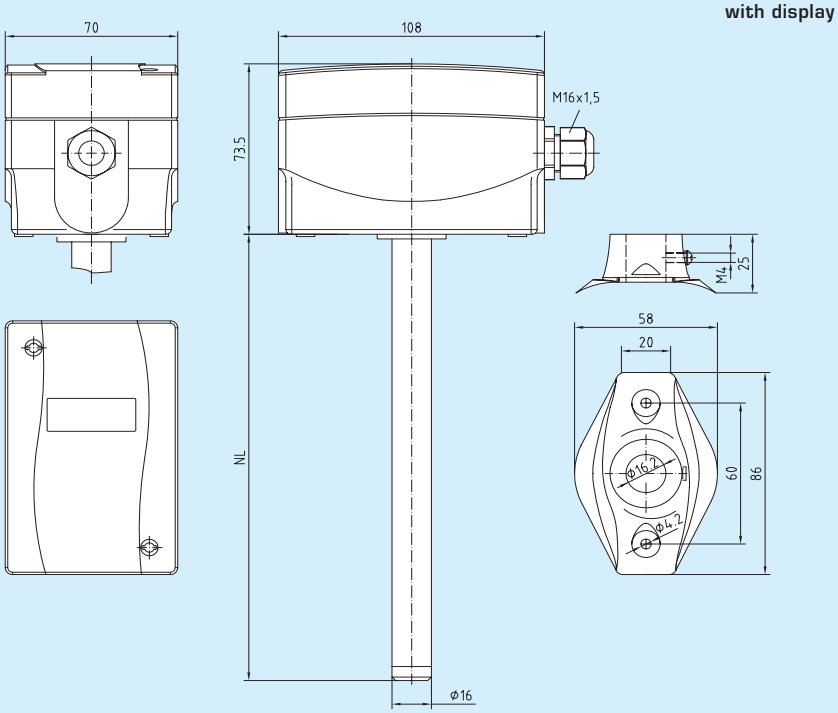
KLQ



KLQ

Dimensional drawing

KLQ
with display



KLQ
with display

AERASGARD® **KLQ**, including mounting flange

Type / WG1	**Measuring Range** VOC	**Output** VOC	**Features**
KLQ	0...100%	0-10V / 4...20mA	
KLQ-W	0...100%	0-10V / 4...20mA	Changeover contact
KLQ-xx-Display			
Note:	This unit **must not** be used as safety-relevant device!		