

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

**Patented quality product (patent no. DE 10 2014 010 719.1)**

Maintenance-free duct sensor **AERASGARD® KLQ-SD** with active output, automatic calibration, in a compact plastic housing with quick-locking screws, for determining the air quality (0...100% VOC). The measuring transducer converts the measured values into a standard signal of 0-10V.

Maintenance-free duct sensor **AERASGARD® KLQ-W** with active/switching output, automatic calibration, in a compact plastic housing with quick-locking screws, for determining the air quality (0...100% VOC). The measuring transducer converts the measured values into a standard signal of 0-10V or 4...20mA (switchable).

The sensor is used in offices, hotels, convention centres, apartments, shops, etc. for the purpose of evaluating the indoor climate. This enables energy-saving room ventilation on an as-needed basis, thereby reducing operating costs and improving well-being.

The air quality is detected by a **VOC sensor** (mixed gas sensor for volatile organic substances). This sensor determines the loading of the room air due to contaminated gases such as cigarette smoke, body perspiration, exhaled breathing air, solvent vapours, emissions etc. With regard to the expected air contamination, low, medium or high VOC sensitivity can be selected. As an alternative, use IAQ categories (from excellent to unhealthy) following the guidelines of the German Federal Environmental Agency to assess the room air.

For more information, see the start of the chapter.



**TECHNICAL DATA**

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	< 1.5 W / 24 V DC typical; < 2.9 VA / 24 V AC typical
Sensor:	<b>VOC sensor</b> (metal oxide) (VOC = volatile organic compounds), with manual calibration (via zero button), with automatic calibration (permanently active)
Measuring range:	0...100% air quality; referred to calibrating gas; <b>multi-range switching</b> (selectable via DIP switches) VOC sensitivities (low/medium/high) or IAQ category (Indoor Air Quality)
Output:	(0V = clean air, 10V = polluted air) <b>KLQ-SD</b> 0-10V (fixed) <b>KLQ-W</b> 0-10V or 4...20mA, working resistance < 800 Ω (selectable via DIP switches), with offset potentiometer (± 10 % of the measuring range)
Relay output:	<b>KLQ-SD</b> without changeover contact <b>KLQ-W</b> with potential-free <b>changeover contact</b> (24V/1A), switchpoint adjustable
Measuring accuracy:	typically ± 20 % of final value (referred to calibrating gas)
Service life:	> 60 months (under normal load conditions), depending on the type of loading and gas concentration
Gas exchange:	by diffusion
Warm-up time:	approx. 1 hour
Response time:	approx. 1 minute, minimum flow rate 0.3m/s (air)
Ambient temperature:	-10...+60 °C
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> , via terminals
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display)
Cable connection:	<b>cable gland</b> , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or <b>M12 connector</b> according to DIN EN 61076-2-101 (optional on request)
Protective tube:	<b>PLEUROFORM™</b> , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 202.5 mm (optionally 100 mm), v <sub>max</sub> = 30 m/s (air)
Process connection:	by mounting flange, plastic (included in the scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	<b>IP65</b> (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state (permeable PLEUROFORM: IP30)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU
<b>ACCESSORIES</b>	see last chapter

**MFT-20-K**  
Mounting flange,  
plastic





S+S REGELTECHNIK

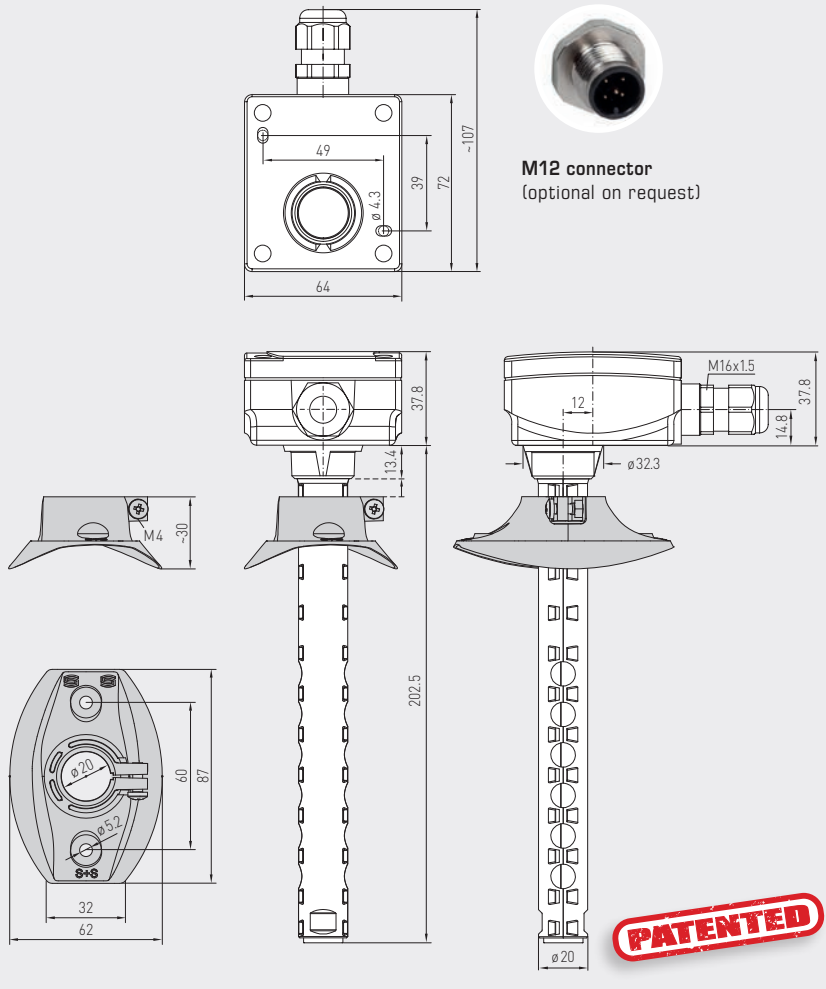
AERASGARD® KLQ-W  
AERASGARD® KLQ-SD

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Dimensional drawing  
(mm)

KLQ-W  
KLQ-SD

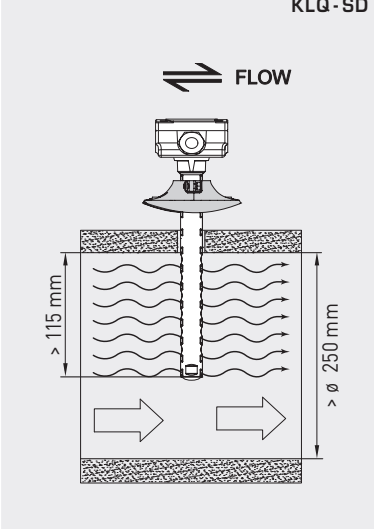


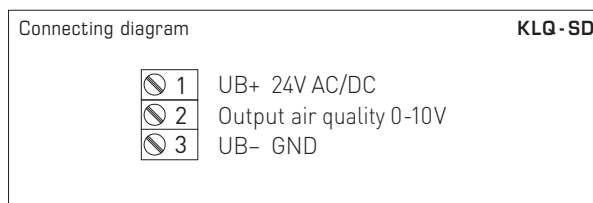
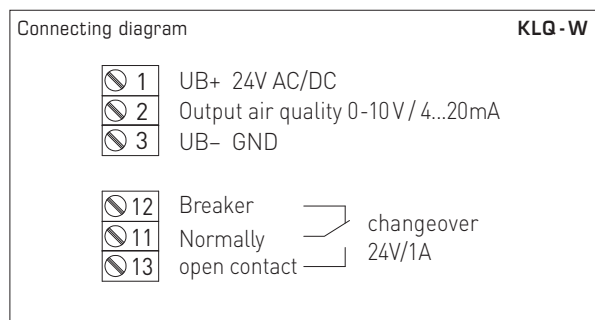
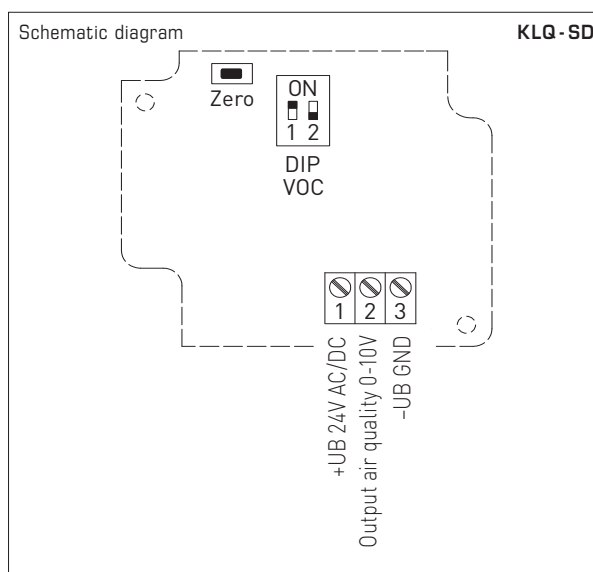
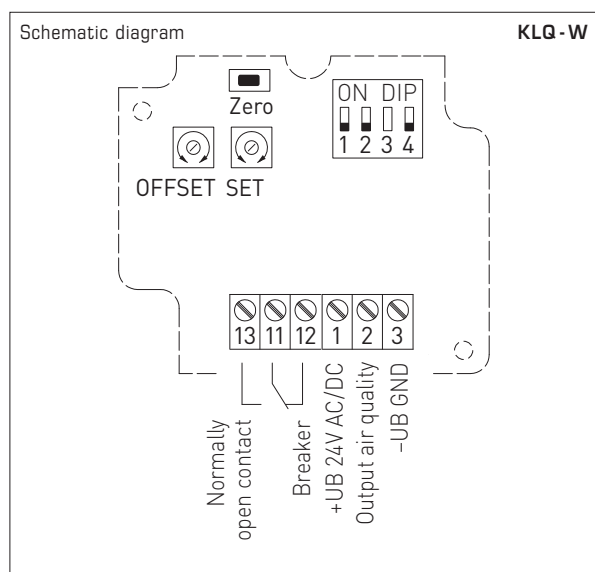
KLQ-W  
KLQ-SD  
with quick-locking  
screws (IP65)



Mounting diagram

KLQ-W  
KLQ-SD





DIP switches KLQ-W		
VOC sensitivity	DIP 1	DIP 2
LOW	OFF	OFF
MEDIUM (default)	ON	OFF
HIGH	OFF	ON
<b>IAQ (Indoor Air Quality)</b>	<b>ON</b>	<b>ON</b>
Output	DIP 4	
Voltage 0-10V (default)	OFF	
Current 4...20mA	ON	

Note: **DIP 3** is not assigned!

DIP switches KLQ-SD		
VOC sensitivity	DIP 1	DIP 2
LOW	OFF	OFF
MEDIUM (default)	ON	OFF
HIGH	OFF	ON
<b>IAQ (Indoor Air Quality)</b>	<b>ON</b>	<b>ON</b>

Level	IAQ (Indoor Air Quality)	VOC
1	<b>excellent</b> no action required	0...19%
2	<b>good</b> prompt airing recommended	20...39%
3	<b>moderate</b> airing recommended	40...59%
4	<b>poor</b> increased airing required	60...79%
5	<b>unhealthy</b> intense airing necessary	80...100%

Table according to TVOC guidelines of the German Federal Environmental Agency to assess indoor air contamination (Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz 2007, 50: 990–1005)



S+S REGELTECHNIK

AERASGARD® KLQ-W  
AERASGARD® KLQ-SD

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KLQ-W  
Circuit board



AERASGARD® KLQ-SD Duct air quality sensor and measuring transducer, *Standard*  
AERASGARD® KLQ-W Duct air quality sensor and measuring transducer, *Premium*

Type / WG02	Measuring Range VOC	Output VOC	Equipment	Item No.	Price
KLQ-SD		(fixed)		IP 65	
KLQ-SD-U	0...100%	0-10V	-	1501-3170-1001-500	212,51 €
KLQ-W		(switchable)		IP 65	
KLQ-W	0...100%	0-10V / 4...20mA	changeover contact	1501-3150-7301-500	221,83 €
Optional:	Cable connection with <b>M12 connector</b> according to DIN EN 61076-2-101 shortened protective tube <b>PLEUROFORM™</b> , NL = 100 mm			on request on request	
Note:	This unit <b>must not</b> be used as safety-relevant device!				

