AERASGARD® KCO_2 / KLQ - CO_2 - Modbus
AERASGARD® KFTM - (LQ) - CO_2 - Modbus

Multifunctional duct sensors and measuring transducers incl. mounting flange, for humidity, temperature, CO_2 content and air quality (VOC), calibratable, with Modbus connection

NEW

S+S REGELTECHNIK

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

The maintenance-free, microprocessor-controlled **AER**ASGARD® **AFTM - LQ - CO_2 - Modbus** and **KCO_2 / KLQ - CO_2 / KFTM - CO_2 - Modbus** with Modbus connection, with / without optional display, is designed for duct installation and is used to monitor all measurands of relevance to the climate inside a room. These are the measurands air humidity, temperature, CO_2 concentration as well as air quality (VOC). By using a single device to monitor all four measurands, it is possible to effectively monitor and regulate the entire room climate. It measures CO_2 in the range of 0...5000 ppm, VOC at one of three selectable sensitivity levels LOW / MEDIUM / HIGH, temperatures in the range of –35...+80 °C, as well as relative air humidity from 0...100 % r.H.

The relative humidity (% r.H.) quotient of water vapour partial pressure divided by the saturation vapour pressure at the respective gas temperature. A digital, long-term stable sensor used as measuring element for relative air humidity and temperature guarantees exact measurement results.

The CO_2 content of the air is measured using an optical NDIR sensor (non-dispersive infra-red technology). The detection range of the sensors is calibrated for standard applications such as monitoring residential rooms and conference rooms. Room ventilation on an as-needed basis, improved well-being and customer benefit, increased comfort as well as reduced operating costs through energy conservation are just some of the benefits of employing the AERASGARD® CO_2 sensor.

The explanations above demonstrate that there are applications for CO_2 measurements, for VOC measurements, but from our perspective, above all, for a combination of both measurands. The crucial factor in this respect is that both of these measurands are not convertible into each other and derivations to or from one another cannot be made. An NDIR CO_2 measuring instrument measures selectively and cannot detect any VOC; a VOC mixed gas sensor cannot recognize CO_2 molecules.

SF-K
Plastic sinter filter (standard)

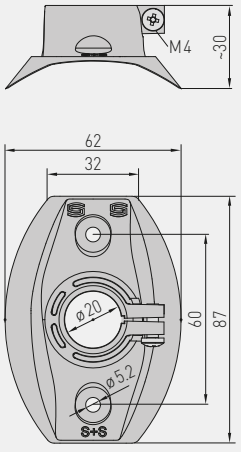
SF-M
Metal sinter filter (optional)

MFT-20-K
Mounting flange, plastic

TECHNICAL DATA

Voltage supply:	24 V AC / DC (± 10 %)
Power consumption:	< 4.8 W / 24 V DC typical; < 6.8 VA / 24 V AC typical; peak current 200 mA
Data points:	temperature, relative humidity, air quality (VOC), carbon dioxide (CO_2), atmospheric pressure
HUMIDITY	
Sensors:	digital humidity sensor with integrated temperature sensor, low hysteresis, high long-term stability
Sensor protection:	**plastic** sinter filter, Ø 16 mm, L = 35 mm, exchangeable (optional **metal** sinter filter, Ø 16 mm, L = 32 mm)
Measuring range, humidity:	0...100 % r. H.
Operating range, humidity:	0...95 % r. H. (without dew formation)
Deviation of humidity:	**± 3 % r.H.** (20...80 %) at +20 °C, otherwise ± 5 % r. H.
TEMPERATURE	
Measuring range, temperature:	–35...+80 °C
Operating range, temperature:	–10...+60 °C
Temperature deviation:	± 0.2 K at 25 °C
AIR QUALITY (VOC)	
Sensor, VOC:	VOC sensor (metal oxide) **with automatic calibration** (VOC = volatile organic compounds)
Measuring range, VOC:	0...100 % air quality; referred to calibrating gas; **multi-range switching** VOC sensitivity low, medium, high
Measuring accuracy, VOC:	± 20 % of final value (referred to calibrating gas)
Service life:	> 60 months (under normal load conditions)
CARBON DIOXIDE (CO_2)	
Sensor, CO_2:	optical NDIR sensor (non-dispersive infra-red technology) including atmospheric pressure compensation (up to 1100 mbar) **with automatic and manual calibration**
Measuring range, CO_2:	0...5000 ppm
Measuring accuracy, CO_2:	± 30 ppm ± 3 % of measured value
Temperature dependence, CO_2:	± 5 ppm / °C or ± 0.5 % of measured value / °C (whichever is higher)
Pressure dependence:	± 0.13 % / mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion (continued on next page!)

Dimensional drawing **MFT-20-K**



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NEW

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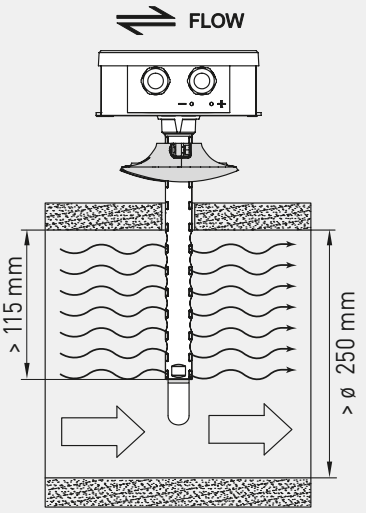
Mounting diagram

KCO_2 - Modbus
KLQ - CO_2 - Modbus
KFTM - CO_2 - Modbus
KFTM - LQ - CO_2 - Modbus



PATENTED

KFTM - CO_2 - Modbus
KFTM - LQ - CO_2 - Modbus
with plastic sinter filter (standard)

KFTM - CO_2 - Modbus
KFTM - LQ - CO_2 - Modbus
with display and plastic sinter filter (standard)

TECHNICAL DATA (continued)

Bus protocol:	Modbus (RTU mode), address range 0...**247** selectable
Signal filtering:	4 s / 32 s
Ambient temperature:	–10...+60 °C
Response time:	< 2 minutes
Electrical connection:	0.2 - 1.5 mm², ia push-in terminal
Enclosure:	plastic, polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover for display is transparent!
Enclosure dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable gland:	2x M 16 x 1.5; including strain relief, exchangeable
Protective tube:	**PLEUROFORM**™, material polyamide (PA6), with torsion protection, Ø 20 mm, v_{max} = 30 m/s (air) without filter: NL = 202.5 mm / with plastic filter: NL = 235 mm (optional with metal filter: NL = 227 mm)
Process connection:	via flange made of plastic (included in scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529) enclosure only! (PLEUROFORM IP 30)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU
Optional:	three-line **display with illumination,** cutout approx. 70 x 40 mm (W x H), for displaying actual humidity, actual temperature, air quality and / or the actual CO_2 content

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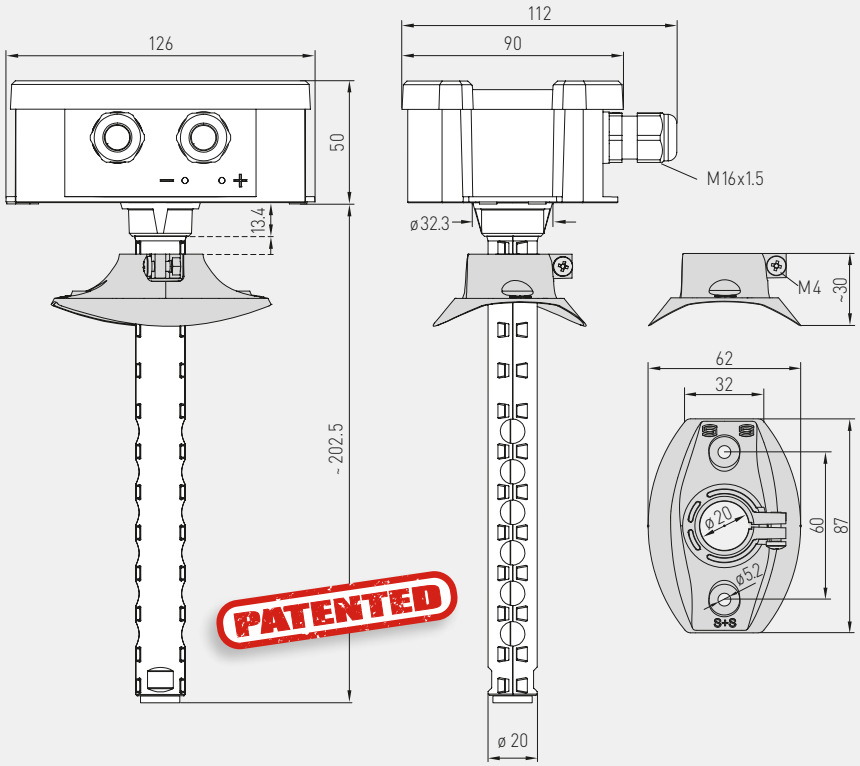
NEW

S+S REGELTECHNIK

Dimensional drawing

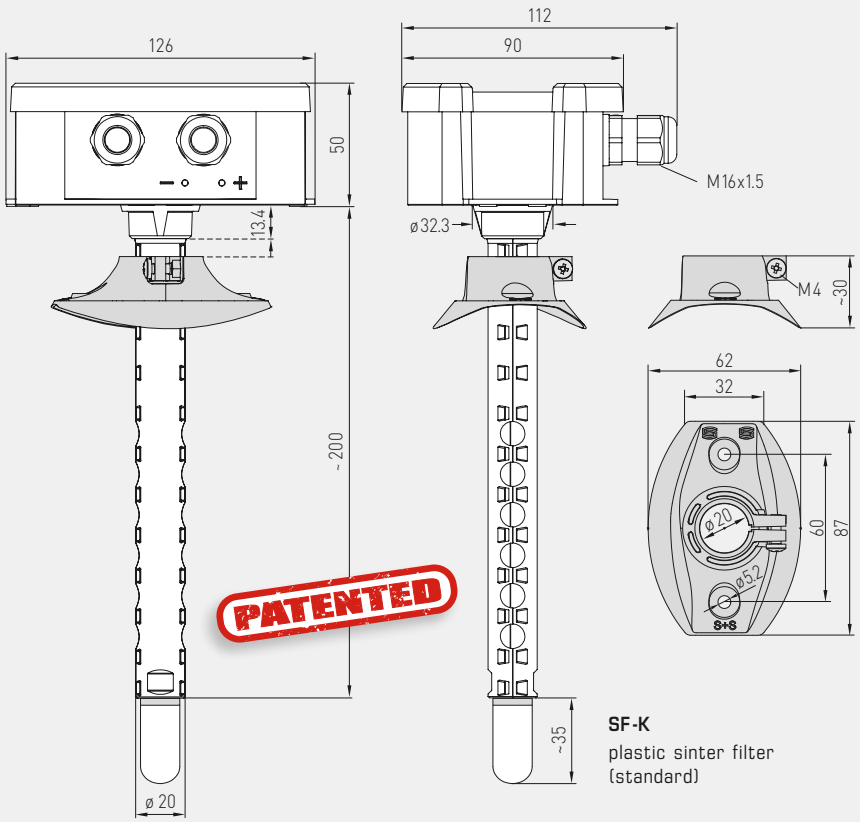
KCO_2-Modbus
KLQ - CO_2-Modbus



KCO_2-Modbus
KLQ - CO_2-Modbus

Dimensional drawing

KFTM - CO_2 - Modbus
KFTM - LQ - CO_2 - Modbus



SF-K
plastic sinter filter
(standard)

KFTM - CO_2 - Modbus
KFTM - LQ - CO_2 - Modbus

SF-M
metal sinter filter
(optional)

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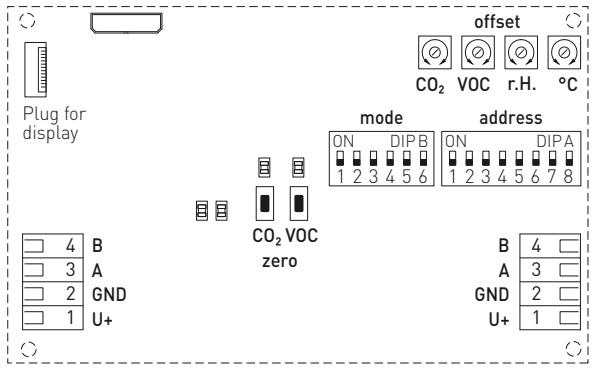
Schematic diagram — **KFTM-LQ-CO_2-Modbus**



DIP A: Bus address
DIP B: Bus parameters (Baud rate, parity ...)
Telegram indicator Reception (LED green) Error (LED red)
Offset correction
LED (internal status)
Reset button

KFTM-LQ-CO_2-Modbus
with display

AERASGARD® KCO_2-Modbus	Duct sensor for CO_2 content, *Deluxe*
AERASGARD® KLQ-CO_2-Modbus	Duct sensor for air quality (VOC) and CO_2 content, *Deluxe*
AERASGARD® KFTM-CO_2-Modbus	Multifunctional duct sensor for humidity, temperature and CO_2 content, *Deluxe*
AERASGARD® KFTM-LQ-CO_2-Modbus	Multifunctional duct sensor for humidity, temperature, air quality (VOC) and CO_2 content, *Deluxe*

Type / WG02	Measuring Range Humidity	Temperature	CO_2	VOC	Display	Item No.	Price
KCO_2-Modbus							
KCO2 MODBUS	–	–	5000 ppm	–		1501-8110-6001-200	**326,40 €**
KCO2 MODBUS DISPLAY	–	–	5000 ppm	–	■	1501-8110-6071-200	**377,20 €**
KLQ-CO_2-Modbus							
KLQ-CO2 MODBUS	–	–	5000 ppm	0...100 %		1501-8111-6001-200	**367,20 €**
KLQ-CO2 MODBUS DISPLAY	–	–	5000 ppm	0...100 %	■	1501-8111-6071-200	**427,38 €**
KFTM-CO_2-Modbus							
KFTM-CO2 MODBUS	0...100 % r.H.	–35...+80 °C	5000 ppm	–		1501-8116-6001-200	**334,56 €**
KFTM-CO2 MODBUS DISPLAY	0...100 % r.H.	–35...+80 °C	5000 ppm	–	■	1501-8116-6071-200	**405,96 €**
KFTM-LQ-CO_2-Modbus							
KFTM-LQ-CO2 MODBUS	0...100 % r.H.	–35...+80 °C	5000 ppm	0...100 %		1501-8118-6001-200	**434,52 €**
KFTM-LQ-CO2 MODBUS DISPLAY	0...100 % r.H.	–35...+80 °C	5000 ppm	0...100 %	■	1501-8118-6071-200	**508,98 €**
Note:	This unit **must not** be used as safety-relevant device!						

Accessories			
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable, stainless steel **V4A** (1.4404)	7000-0050-2200-100	**35,70 €**
MFT-20-K	**Mounting flange,** plastic (included in the scope of delivery)	7000-0031-0000-000	**8,06 €**
	For further information, see last chapter Accessories!		