

Duct CO<sub>2</sub> sensors and measuring transducers,  
incl. mounting flange, self-calibrating, with multi-range switching  
and active / switching output

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

The maintenance-free microprocessor-controlled duct sensor **AERASGARD® KCO<sub>2</sub>-SD** with automatic calibration (fixed), enclosure with snap-on lid, without display, is used for detecting the CO<sub>2</sub> content of the air within a range of 0...2000 ppm or 0...5000 ppm. The measurement value is converted into standard signal of 0-10V.

The maintenance-free microprocessor-controlled duct sensor **AERASGARD® KCO<sub>2</sub>-W** with automatic calibration (can be deactivated via DIP switches), enclosure with quick-locking screws, optionally with / without display, is used for detecting the CO<sub>2</sub> content of the air within a range of 0...2000 ppm or 0...5000 ppm. The measurement value is converted into standard signal of 0-10V or 4...20mA.

The CO<sub>2</sub> content of the air is measured using an optical NDIR sensor (non-dispersive infra-red technology). The detection range of the CO<sub>2</sub> sensor 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 AERASGARD® CO<sub>2</sub> sensors.

A measuring system based on NDIR (non-dispersive infra-red technology) for CO<sub>2</sub> measurement consists of a light source and a receptor. A certain range of wavelengths of light radiated by the source is damped and absorbed by CO<sub>2</sub> molecules in the measured section. This damping is detected by the receptor. 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; Peak current 200 mA
Sensor:	optical NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), <b>KCO<sub>2</sub>-SD</b> with automatic calibration (fixed) <b>KCO<sub>2</sub>-W</b> with automatic calibration (can be deactivated via DIP switches)
Measuring range:	<b>Multi-range switching</b> (selectable via DIP switches) 0...2000 ppm; 0...5000 ppm
Output:	<b>KCO<sub>2</sub>-SD</b> 0-10 V (fixed) <b>KCO<sub>2</sub>-W</b> 0-10 V or 4...20 mA, working resistance < 800 Ω (selectable via DIP switches), with offset potentiometer (± 10 % of the measuring range)
Relay output:	<b>KCO<sub>2</sub>-SD</b> without changeover contact <b>KCO<sub>2</sub>-W</b> with potential-free <b>changeover contact</b> (24 V / 1 A), switchpoint adjustable
Measuring accuracy:	typically ± 30 ppm ± 3 % of measured value
Temperature dependence:	± 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
Warm up time:	approx. 1 hour
Ambient temperature:	-10...+60 °C
Response time:	approx. 1 minute, minimum flow rate 0.3 m/s (air)
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> , via screw terminals
Enclosure:	plastic, UV-stabilised, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016), enclosure cover for display is transparent! <b>KCO<sub>2</sub>-SD</b> with snap-on lid, <b>KCO<sub>2</sub>-W</b> with quick-locking screws (slotted / Phillips head combination)
Enclosure dimensions:	72 x 64 x 37.8 mm (Tyr 1/Tyr 01 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable gland:	M 16 x 1.5; including strain relief, exchangeable, max. inner diameter 10.4 mm
Protective tube:	<b>PLEUROFORM™</b> , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 202.5 mm, v <sub>max</sub> = 30 m/s (air)
Process connection:	via flange made of plastic (included in scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	<b>KCO<sub>2</sub>-SD IP 43</b> (as per EN 60 529) enclosure only! <b>KCO<sub>2</sub>-W IP 65</b> (as per EN 60 529) enclosure only!
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU
Optional:	<b>Display with illumination</b> , two line, cutout approx. 36 x 15 mm (W x H), for displaying the <b>Actual CO<sub>2</sub> content</b> and for setting the <b>switchpoint</b>
<b>ACCESSORIES</b>	See last chapter

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





S+S REGELTECHNIK

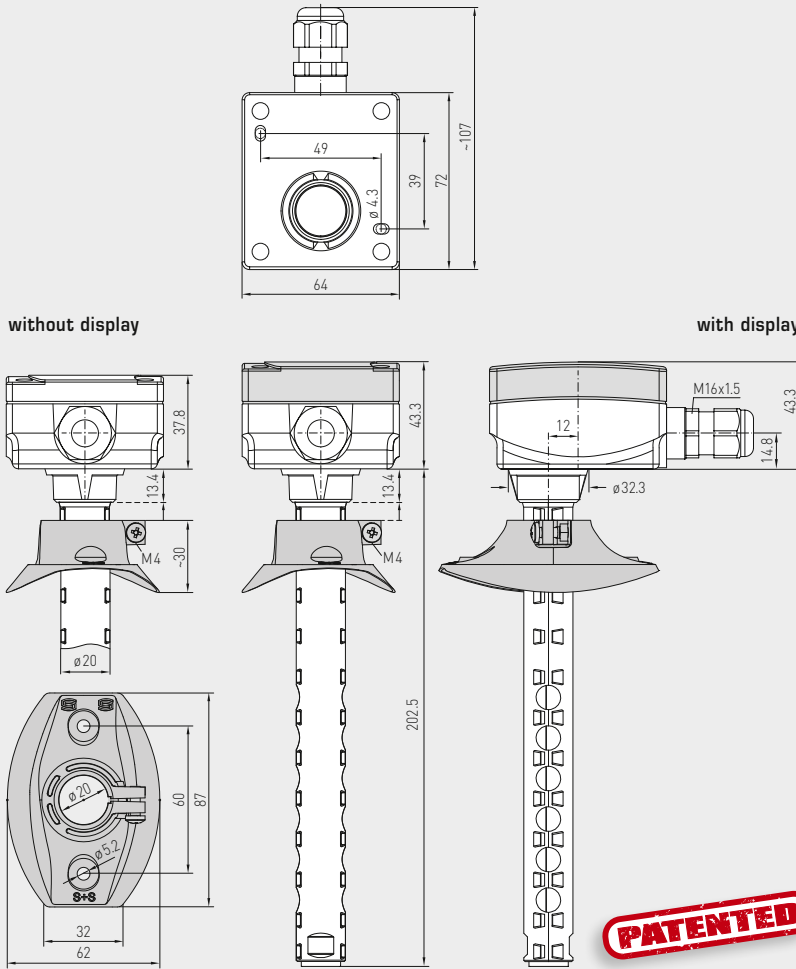
AERASGARD® KCO<sub>2</sub>-W  
AERASGARD® KCO<sub>2</sub>-SD

Duct CO<sub>2</sub> sensors and measuring transducers,  
incl. mounting flange, self-calibrating, with multi-range switching  
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Dimensional drawing

KCO<sub>2</sub>-W  
KCO<sub>2</sub>-SD



KCO<sub>2</sub>-SD  
with snap-on lid  
(IP 43)



KCO<sub>2</sub>-W  
with quick-locking  
screws (IP 65)

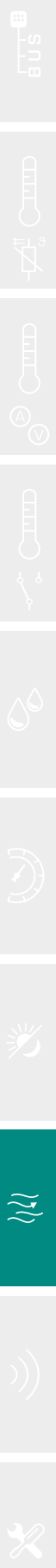
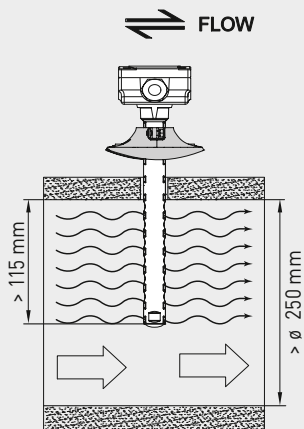


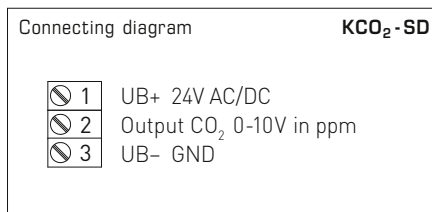
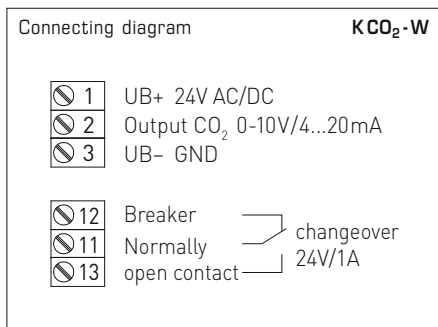
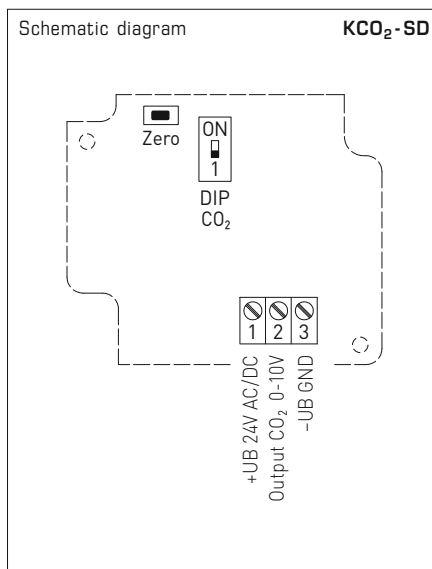
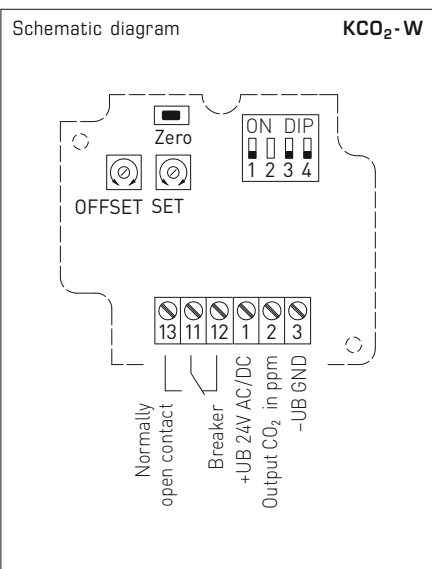
KCO<sub>2</sub>-W  
with quick-locking  
screws and display (IP 65)



Mounting diagram

KCO<sub>2</sub>-W  
KCO<sub>2</sub>-SD



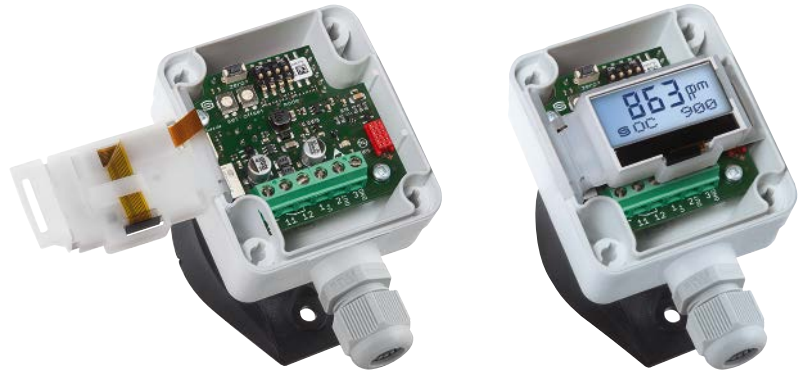


DIP switch <b>KCO<sub>2</sub>-W</b>	
<b>CO<sub>2</sub> content</b>	<b>DIP 1</b>
0...2000 ppm (default)	OFF
0...5000 ppm	<b>ON</b>
<b>CO<sub>2</sub> automatic zero point</b>	<b>DIP 3</b>
deactivated	OFF
activated (default)	<b>ON</b>
<b>Output</b>	<b>DIP 4</b>
Voltage 0-10V (default)	OFF
Current 4...20mA	<b>ON</b>
Note: <b>DIP 2</b> is not assigned!	

DIP switch <b>KCO<sub>2</sub>-SD</b>	
<b>CO<sub>2</sub> content</b>	<b>DIP 1</b>
0...2000 ppm (default)	OFF
0...5000 ppm	<b>ON</b>



KCO<sub>2</sub>-W  
with Display



AERASGARD® KCO<sub>2</sub>-SD Duct CO<sub>2</sub> sensors and measuring transducers, *Standard*  
AERASGARD® KCO<sub>2</sub>-W Duct CO<sub>2</sub> sensors and measuring transducers, *Premium*

Type / WG02	Measuring Range CO <sub>2</sub>	Output CO <sub>2</sub>	Equipment	Display	Item No.	Price
<b>KCO<sub>2</sub>-SD</b>	(switchable)	(fixed)			<b>IP 43</b>	
KCO2-SD-U	0...2000 ppm / 0...5000 ppm	0-10 V	–		1501-3160-1001-200	<b>211,60 €</b>
<b>KCO<sub>2</sub>-W</b>	(switchable)	(switchable)			<b>IP 65</b>	
KCO2-W	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	changeover contact		1501-3140-7301-200	<b>255,00 €</b>
KCO2-W DISPLAY	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	changeover contact, display	■	1501-3140-7321-200	<b>297,33 €</b>
Note:	This unit <b>must not</b> be used as safety-relevant device!					

