AERASGARD® KCO2-W
AERASGARD® KCO2-SD

Duct CO2 sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active / switching output

S+S REGELTECHNIK

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

Maintenance-free duct sensor **AER**ASGARD® **KCO2-SD** with active output, automatic calibration (fixed), in a compact plastic enclosure with snap-on lid, for determining the CO2 content of the air (0…2000 ppm/0…5000 ppm). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free duct sensor **AER**ASGARD® **KCO2-W** with active/switching output, automatic calibration (can be deactivated), in a compact plastic enclosure with quick-locking screws, optionally with/without display, for determining the CO2 content of the air (0…2000 ppm/0…5000 ppm). The measuring transducer converts the measured values into a standard signal of 0-10 V or 4…20 mA (switchable).

The CO2 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. One sensor for every 30 m² of room area is recommended.

The CO2 measurement is performed using an optical **NDIR sensor** (non-dispersive infra-red technology). The detection range is calibrated for standard applications such as monitoring residential rooms and conference rooms.

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), **KCO2-SD** with automatic calibration (fixed) **KCO2-W** with automatic calibration (can be deactivated via DIP switches)
Measuring range:	**Multi-range switching** (selectable via DIP switches) 0…2000 ppm; 0…5000 ppm
Output:	**KCO2-SD** 0-10 V (fixed) **KCO2-W** 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:	**KCO2-SD** without changeover contact **KCO2-W** with potential-free **changeover contact** (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 mm², via screw terminals
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016), housing cover for display is transparent! **KCO2-SD with snap-on lid,** **KCO2-W with quick-locking screws** (slotted / Phillips head combination)
Housing 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 connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** according to DIN EN 61076-2-101 (optional on request)
Protective tube:	**PLEUROFORM™**, material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 202.5 mm, v_{max} = 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:	**KCO2-SD IP 54** (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) **KCO2-W IP 65** (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state (permeable PLEUROFORM: IP 30)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU
Optional:	**Display with illumination,** two line, cutout approx. 36 x 15 mm (W x H), for displaying the **Actual CO2 content** and for setting the **switchpoint**
ACCESSORIES	See last chapter

MFT-20-K
Mounting flange, plastic

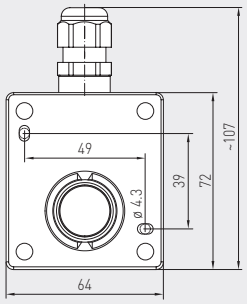
S+S REGELTECHNIK

AERASGARD® KCO2-W
AERASGARD® KCO2-SD

Duct CO2 sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active / switching output

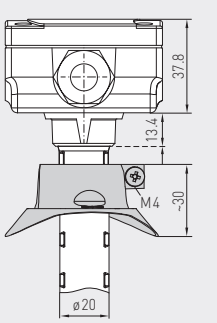
Dimensional drawing

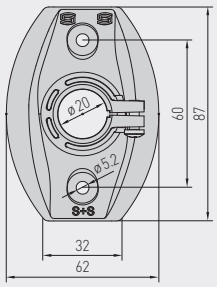
KCO2-W
KCO2-SD



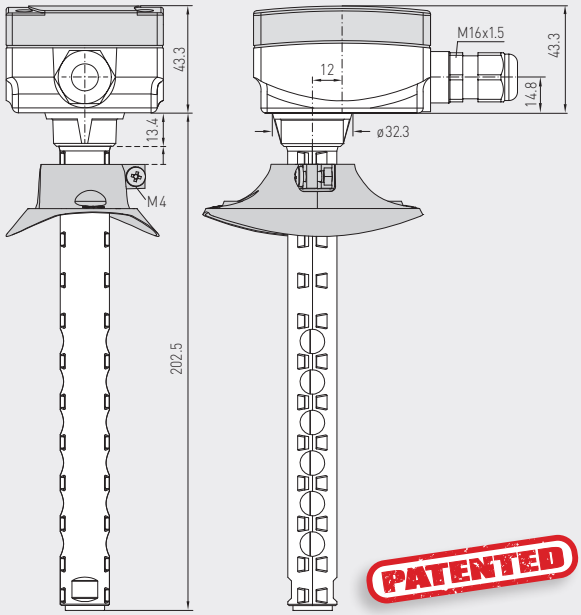
M12 connector
(optional on request)

without display





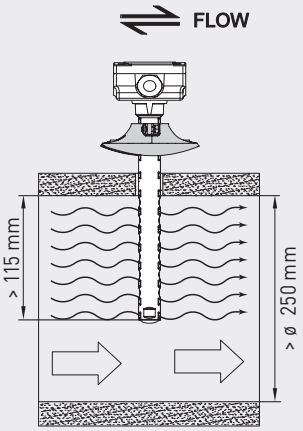
with display



PATENTED

Mounting diagram

KCO2-W
KCO2-SD



KCO_2-SD
with snap-on lid
(IP54)

KCO2-W
with quick-locking
screws (IP65)

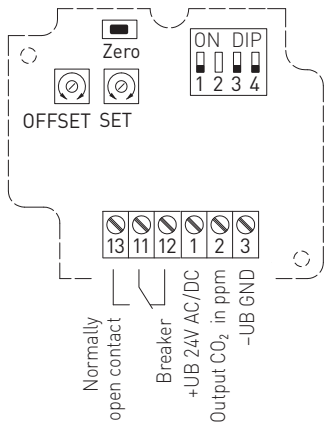
KCO2-W
with quick-locking
screws and
display (IP65)

AERASGARD® KCO2-W
AERASGARD® KCO2-SD

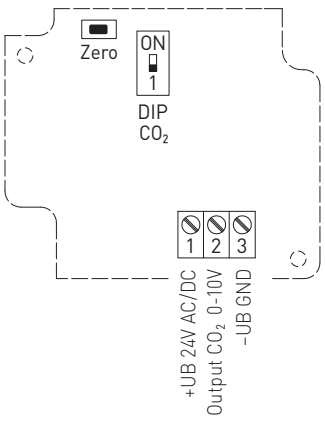
Duct CO2 sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active / switching output

S+S REGELTECHNIK

Schematic diagram **KCO2-W**



Schematic diagram **KCO2-SD**



Connecting diagram **KCO2-W**

1	UB+ 24V AC/DC
2	Output CO_2 0-10V/4...20mA
3	UB– GND

12	Breaker	changeover 24V/1A
11	Normally	
13	open contact	

Connecting diagram **KCO2-SD**

1	UB+ 24V AC/DC
2	Output CO_2 0-10V in ppm
3	UB– GND

DIP switch	KCO2-W
CO2 content	**DIP 1**
0...2000 ppm (default)	OFF
0...5000 ppm	**ON**
CO2 automatic zero point	**DIP 3**
deactivated	OFF
activated (default)	**ON**
Output	**DIP 4**
Voltage 0-10 V (default)	OFF
Current 4...20 mA	**ON**
Note: **DIP 2** is not assigned!	

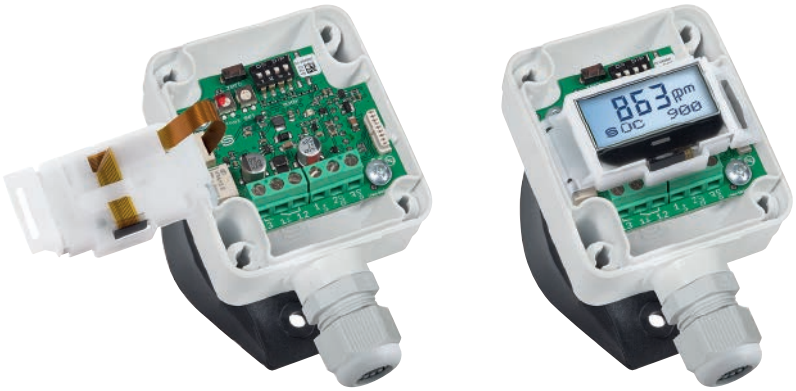
DIP switch	KCO2-SD
CO2 content	**DIP 1**
0...2000 ppm (default)	OFF
0...5000 ppm	**ON**

S+S REGELTECHNIK

AERASGARD® KCO2-W
AERASGARD® KCO2-SD

Duct CO2 sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active / switching output

KCO2-W
with Display



AERASGARD® KCO2-SD Duct CO2 sensors and measuring transducers, *Standard*
AERASGARD® KCO2-W Duct CO2 sensors and measuring transducers, *Premium*

Type / WG02	Measuring Range CO2	Output CO2	Equipment	Display	Item No.	Price
KCO2-SD	(switchable)	(fixed)			**IP 54**	
KCO2-SD-U	0...2000 ppm / 0...5000 ppm	0-10 V	–		1501-3160-1001-200	**227,91 €**
KCO2-W	(switchable)	(switchable)			**IP 65**	
KCO2-W	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	changeover contact		1501-3140-7301-200	**276,92 €**
KCO2-W **LCD**	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	changeover contact, display	■	1501-3140-7321-200	**324,71 €**
Optional:	Cable connection with **M12 connector** according to DIN EN 61076-2-101 (on request)					
Note:	This unit **must not** be used as safety-relevant device!					