

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

Patented quality product (patent no. DE 10 2014 010 719.1 (FLOW), DE 10 2015 015 941 B4 (AOS))

Maintenance-free duct sensor **AERASGARD® KC02-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, incl. mounting flange, 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 **AERASGARD® KC02-AW** with active/switching output, automatic calibration (can be deactivated), in an impact-resistant plastic housing with quick-locking screws, incl. mounting flange, optionally with/without display, for determining the CO₂ content of the air (0...2000 ppm/0...5000 ppm). The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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

The CO₂ measurement is performed using an photo-acoustic **NDIR sensor** (non-dispersive infra-red technology). The detection range is calibrated for standard applications such as monitoring residential rooms and conference rooms. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
Output:	KC02-SD 0-10 V (fixed) KC02-AW automatic 0-10 V / 4...20 mA (Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	KC02-SD without changeover contact KC02-AW potential-free changeover contact (24 V / 1 A), Switching point can be set via SET-Potentiometer, Setting range 10...95 % of set measuring range Hysteresis 1 % of set measuring range
Measurand:	CO ₂ [ppm]
Sensor:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), KC02-SD with automatic calibration (fixed) KC02-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy:	typical ± 50 ppm ± 5 % of measured value
Temperature dependence:	± 5 ppm per °C or ± 0.5 % of measured value per °C (whichever is higher)
Pressure dependence:	± 0.13 % per mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m/s (air)
Warm-up time:	approx. 1 hour
Ambient temperature:	-10...+60 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
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)
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) 72 x 64 x 43,3 mm (Tyr 1 with display)
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 200 mm / 120 mm (shortened), 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:	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 according to 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 switching point

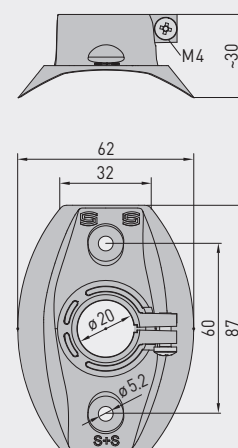
KC02-SD 120mm
KC02-AW 120mm
without display



KC02-AW 120mm
with display



Dimensional drawing [mm] **MFT-20-K**





S+S REGELTECHNIK

NEW

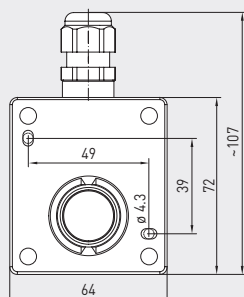
AERASGARD® KC02-SD
AERASGARD® KC02-AW

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



Dimensional drawing
[mm]

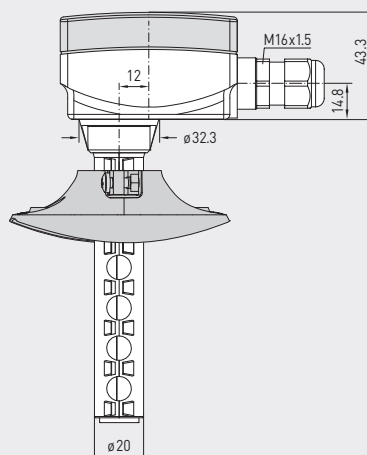
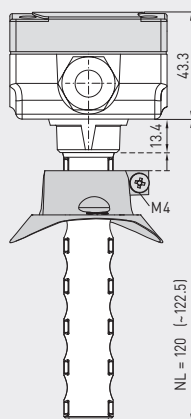
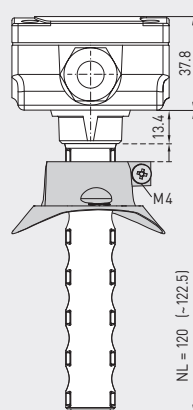
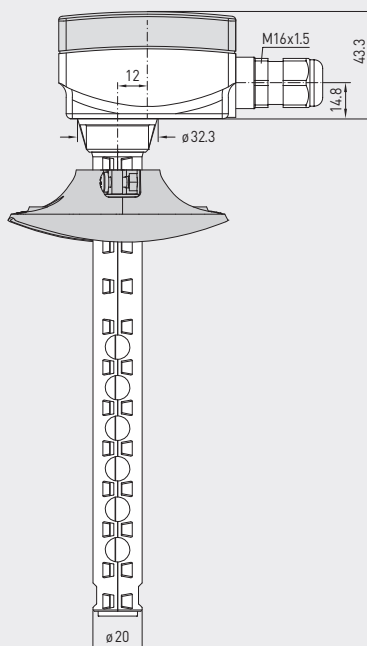
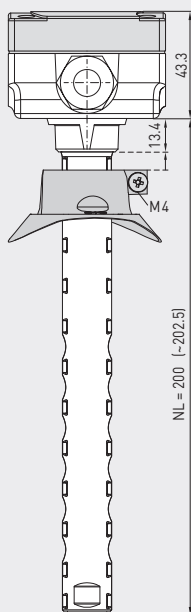
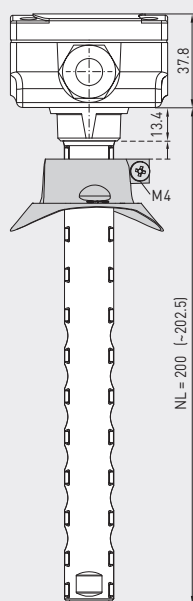
KC02 xx



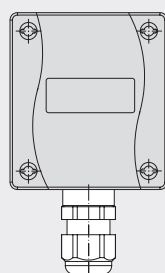
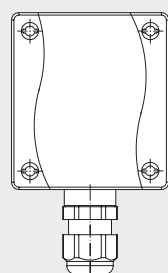
M12 connector
(optional on request)

without display

with display



KC02 xx 120mm



KC02-SD
KC02-AW
without display



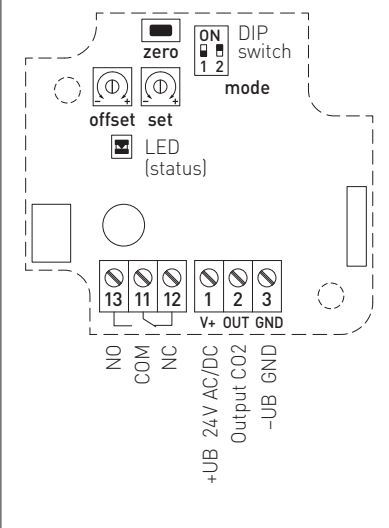
KC02-AW LCD
with display



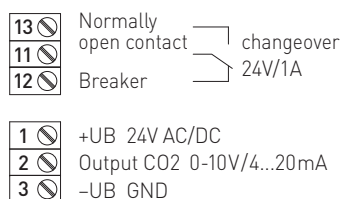
MFT-20-K
Mounting flange,
plastic



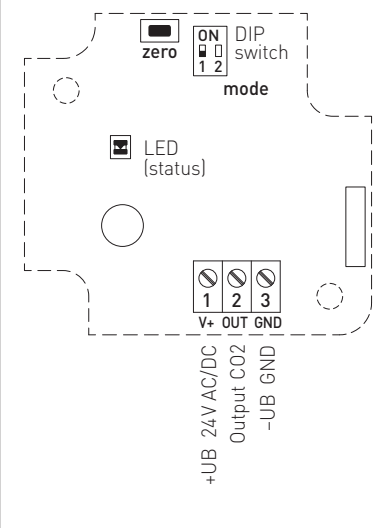
Schematic diagram **KC02-AW**
(AOS)



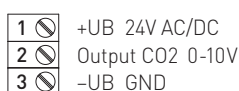
Connecting diagram **KC02-AW**
(AOS)



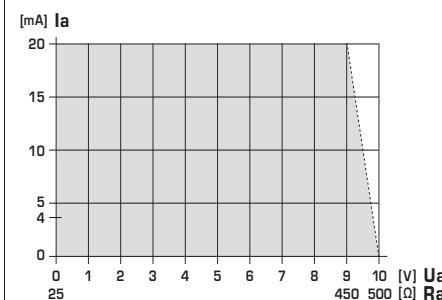
Schematic diagram **KC02-SD**
(0-10 V)



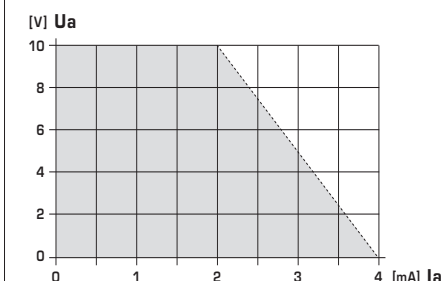
Connecting diagram **KC02-SD**
(0-10 V)



Dependence of output voltage
on output current **AOS-I**
4...20mA



Dependence of output current
on output voltage **AOS-U**
0-10 V



DIP switch	KC02-AW
CO2	
CO2 content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
CO2 automatic calibration	DIP 2
activated (default)	ON
deactivated	OFF

DIP switch	KC02-SD
CO2	
CO2 content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
DIP 2 is not assigned!	
For further technical information, see the operating instructions	

Automatic detection and switching
to standard signal 0...10V or 4...20mA

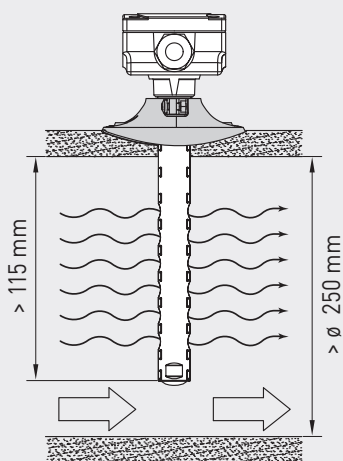
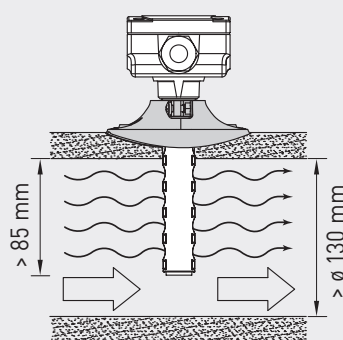
AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

**NEW**

S+S REGELTECHNIK

AERASGARD® KCO2-SD
AERASGARD® KCO2-AW

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

**PATENTED**Mounting diagram
(NL 200 mm)**PATENTED**Mounting diagram
(NL 120 mm)

AERASGARD® KCO2-SD Duct CO₂ sensors, *Standard*
AERASGARD® KCO2-AW Duct CO₂ sensors with changeover contact, *Premium*

Type / WG02	Measuring ranges CO ₂	Output CO ₂	Equipment (NL) Display	Item No.
KCO2-SD	(switchable)	(fixed)		U variant
KCO2-SD-U 120MM	0...2000 / 5000 ppm	0-10 V	120 mm	– 1501-3160-1001-601
KCO2-SD-U	0...2000 / 5000 ppm	0-10 V	200 mm	– 1501-3160-1001-600
KCO2-AW	(switchable)	(automatic)		AOS
KCO2-AW 120mm	0...2000 / 5000 ppm	0-10 V / 4...20 mA	120 mm	W 1501-3140-E301-601
KCO2-AW LCD 120mm	0...2000 / 5000 ppm	0-10 V / 4...20 mA	120 mm	W ■ 1501-3140-E321-601
KCO2-AW	0...2000 / 5000 ppm	0-10 V / 4...20 mA	200 mm	W 1501-3140-E301-600
KCO2-AW LCD	0...2000 / 5000 ppm	0-10 V / 4...20 mA	200 mm	W ■ 1501-3140-E321-600
Output / equipment:	0–10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type 'SD', 0–10 V is permanently set – no changeover contact!			
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!			