

On-wall CO₂ sensor or measuring transducer, self-calibrating, with multi-range switching and active (Automatic Output Switching) / switching output

Patented quality product (AOS patent no. DE 10 2015 015 941 B4)

Maintenance-free on-wall sensor **AERASGARD® ACO2-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, 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 0-10V.

Maintenance-free on-wall sensor **AERASGARD® ACO2-AW** with active/switching output, automatic calibration (can be deactivated), in an impact-resistant plastic housing 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 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
Measurand:	CO ₂ [ppm]
Output:	ACO2-SD 0-10 V (fixed) ACO2-AW automatic 0-10V/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:	ACO2-SD without changeover contact ACO2-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
Sensor:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), ACO2-SD with automatic calibration (fixed) ACO2-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy:	typically ± 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)
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 dimensions:	126 x 90 x 50 mm (Tyr 2)
Process connection:	by screws
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	with display (see AERASGARD® AFTM-LQ-CO2) for displaying the actual CO ₂ content
ACCESSORIES	see table

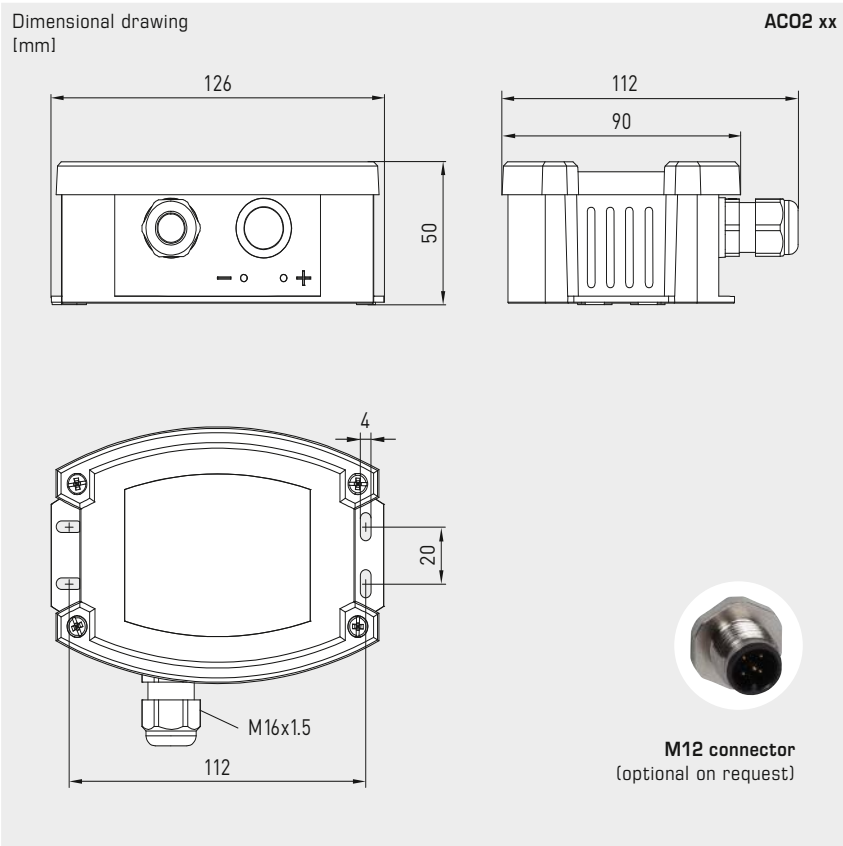


NEW

S+S REGELTECHNIK

AERASGARD® AC02-SD
AERASGARD® AC02-AW

On-wall CO₂ sensor or measuring transducer,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching output



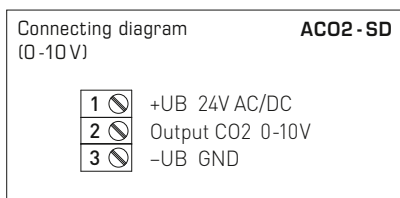
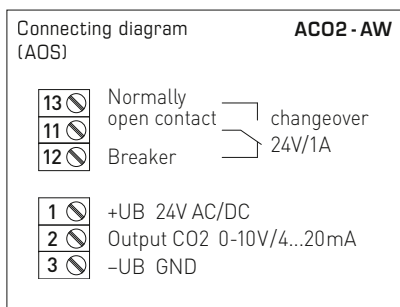
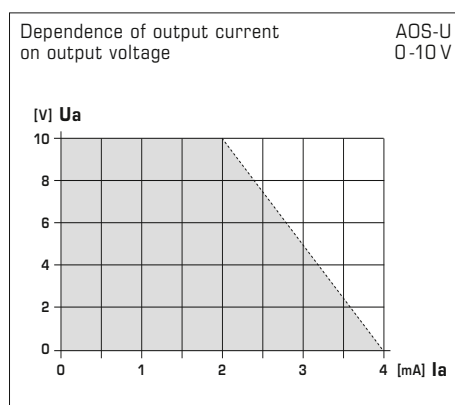
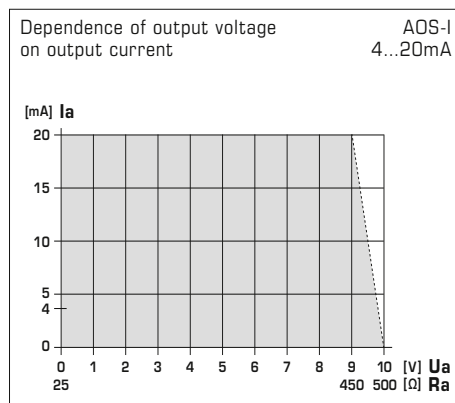
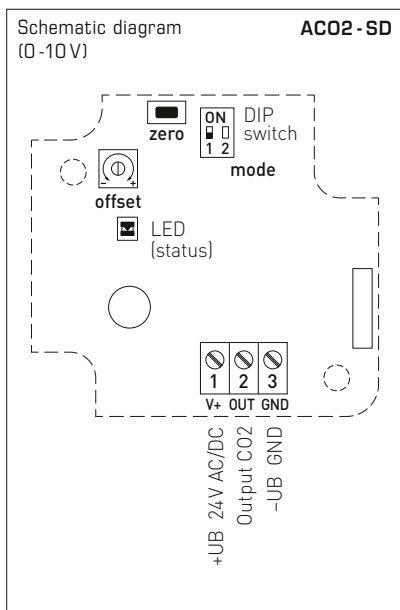
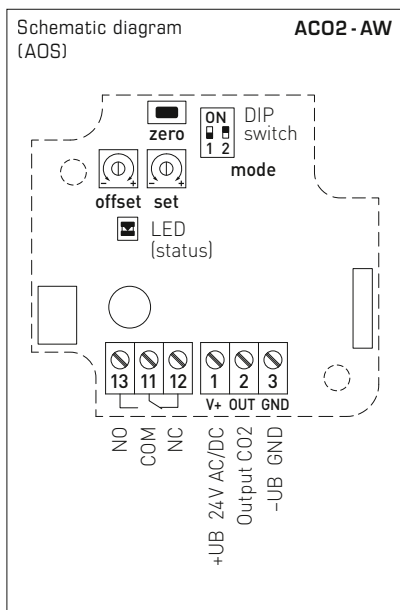
AC02-SD
AC02-AW



CO₂

MR: 0...2000 ppm / 0...5000 ppm

2000 ppm	U _A [V]	I _A [mA]	5000 ppm
0	0.0	4.0	0
100	0.5	4.8	250
200	1.0	5.6	500
300	1.5	6.4	750
400	2.0	7.2	1000
500	2.5	8.0	1250
600	3.0	8.8	1500
700	3.5	9.6	1750
800	4.0	10.4	2000
900	4.5	11.2	2250
1000	5.0	12.0	2500
1100	5.5	12.8	2750
1200	6.0	13.6	3000
1300	6.5	14.4	3250
1400	7.0	15.2	3500
1500	7.5	16.0	3750
1600	8.0	16.8	4000
1700	8.5	17.6	4250
1800	9.0	18.4	4500
1900	9.5	19.2	4750
2000	10.0	20.0	5000



DIP switch ACO2 - 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 ACO2 - 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® AC02-SD
AERASGARD® AC02-AW

On-wall CO2 sensor or measuring transducer,
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AC02-AW-LCD

see data sheet AFTM-LQ-CO2!

AC02-SD
AC02-AW



AERASGARD® AC02-SD On-wall CO2 sensor, *Standard*
AERASGARD® AC02-AW On-wall CO2 sensor with changeover contact, *Premium*

Type / WG02	Measuring range CO2	Output CO2	Equipment Display	Item No.
AC02-SD	(switchable)	(fixed)		U variant
AC02-SD-U	0...2000 / 5000 ppm	0-10 V		- 1501-7110-1001-600
AC02-AW	(switchable)	(automatic)		AOS
AC02-AW	0...2000 / 5000 ppm	0-10 V / 4...20 mA	W	1501-7110-E301-600
AC02-AW LCD	0...2000 / 5000 ppm	0-10 V / 4...20 mA	W ■	see AFTM-LQ-CO2
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! AOS units AC02-AW with display see extra data sheet 'AFTM-LQ-CO2'			
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!			

ACCESSORIES

WS-03	Weather and sun protection hood, 200 x 180 x 150 mm, stainless steel V2A (1.4301)	7100-0040-6000-000
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For further information see last chapter!