AERASGARD® RCO2 - W
AERASGARD® RCO2 - SD

Room CO2 sensor and measuring transducer, self-calibrating, with multi-range switching and active / switching output

S+S REGELTECHNIK

Maintenance-free room sensor **AER**ASGARD® **RCO2 - SD** with active output, automatic calibration (fixed), in an elegant plastic housing with snap-on lid, for determining the CO2 content of the air (0...2000 ppm). The measuring transducer converts the measured values into a standard signal of 0 -10 V.

Maintenance-free room sensor **AER**ASGARD® **RCO2 - W** with active/switching output, automatic calibration (can be deactivated), in an elegant plastic housing with snap-on lid, optional with traffic light indicator (five coloured LEDs), 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 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.

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), **RCO2 - SD** with automatic calibration (fixed) **RCO2 - W** with automatic calibration (can be deactivated via DIP switches)
Measuring range:	**RCO2 - SD** 0...2000 ppm (fixed) **RCO2 - W** 0...2000 ppm **or** 0...5000 ppm (selectable via DIP switches)
Output:	**RCO2 - SD** 0 -10 V (fixed) **RCO2 - 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:	**RCO2 - SD** without changeover contact **RCO2 - W** with potential-free **changeover contact** (24 V / 1 A)
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
Ambient temperature:	0...+ 50 °C
Warm up time:	approx. 1 hour
Response time:	< 2 minutes
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Housing:	plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016), stainless steel housing optional **V2A** (1.4301)
Dimensions:	85 x 85 x 27 mm (Baldur 1) 100 x 100 x 25 mm (stainless steel)
Installation:	wall mounting or on in-wall flush box, Ø 55 mm, base with 4-hole for mounting on vertically or horizontally installed in-wall flush boxes for cable entry from the back, with predetermined breaking point for on-wall cable entry from top / bottom in case of plain on-wall installation
Protection class:	III (according to EN 60 730)
Protection type:	**IP 30** (according to EN 60 529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, Low Voltage Directive 2014 / 35 / EU
Optional:	**with traffic light indicator** (five coloured LEDs, see table) for displaying the CO2 concentration **with display** (see **AER**ASGARD® **RFTM-LQ-CO2**) for displaying the actual CO2 content in ppm

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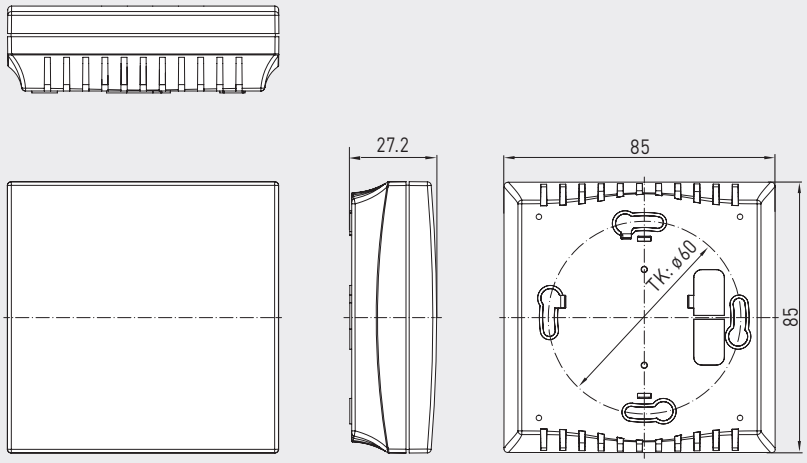
Dimensional drawing

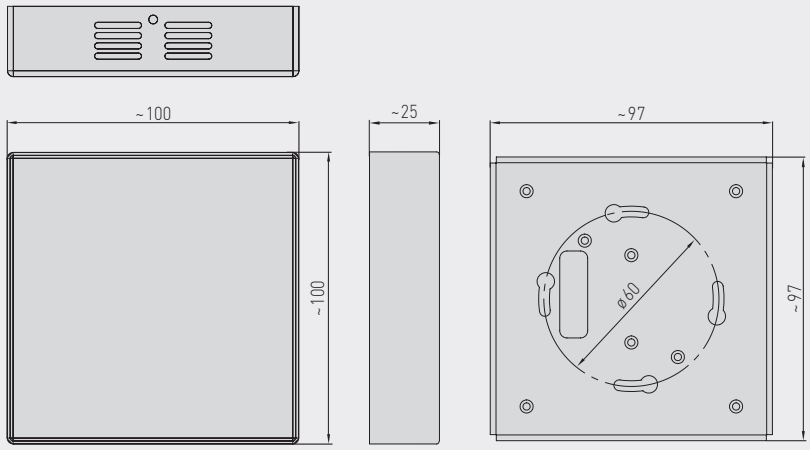
RCO2-W
RCO2-SD



RCO2-W
RCO2-SD

Dimensional drawing

RCO2-W VA



RCO2-W VA
(stainless steel housing)

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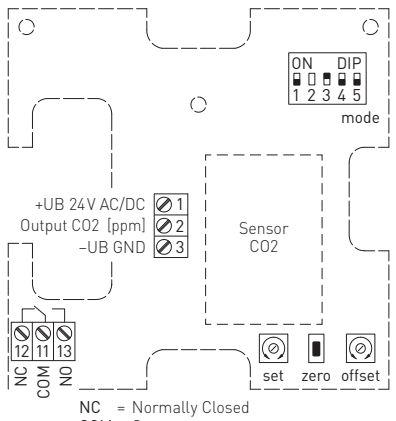
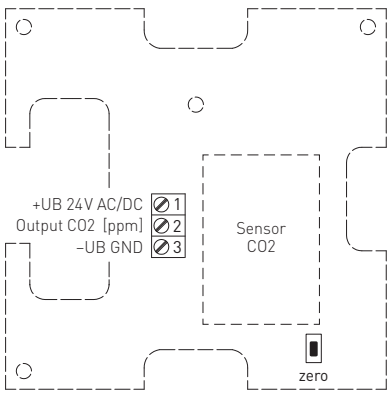
Connecting diagram **RCO2-W**

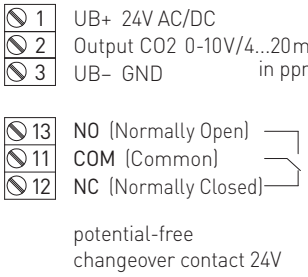


NC = Normally Closed
COM = Common
NO = Normally Open

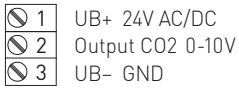
Connecting diagram **RCO2-SD**



Schematic diagram **RCO2-W**



Schematic diagram **RCO2-SD**



DIP switches	RCO2-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**
Traffic light (5x LEDs)	**DIP 5**
deactivated	OFF
activated	**ON**
Note: **DIP 2** is not assigned!	

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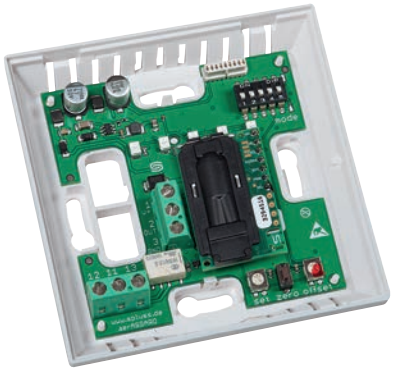
Traffic light indicator						RCO2-W-A
CO2 content in ppm 0...2000 ppm	0...5000 ppm	**LED 1** green	**LED 2** green	**LED 3** yellow	**LED 4** yellow	**LED 5** red
350	350	20 %	–	–	–	–
416	536	40 %	–	–	–	–
482	722	60 %	–	–	–	–
548	908	80 %	–	–	–	–
614	**1094**	**100 %**	–	–	–	–
680	1280		20 %	–	–	–
746	1466		40 %	–	–	–
812	1652		60 %	–	–	–
878	1838		80 %	–	–	–
944	**2024**		**100 %**	–	–	–
1010	2210			20 %	–	–
1076	2396			40 %	–	–
1142	2582			60 %	–	–
1208	2768			80 %	–	–
1274	**2954**			**100 %**	–	–
1340	3140				20 %	–
1406	3326				40 %	–
1472	3512				60 %	–
1538	3698				80 %	–
1604	**3884**				**100 %**	–
1670	4070					20 %
1736	4256					40 %
1802	4442					60 %
1868	4628					80 %
1934	**4814**					**100 %**
2000	5000					

Once the aforementioned values have been reached, the respective LED becomes active (with increasing luminosity of 20 %, 40 %, 60 %, 80 % and 100 %);
LEDs that are already active continue to be illuminated.

RCO2-W-A
with LEDs



AERASGARD® RCO2-SD Room CO2 sensor and measuring transducer, *Standard*
AERASGARD® RCO2-W Room CO2 sensor and measuring transducer, *Premium*

Type / WG02	Measuring Range CO2	Output CO2	Equipment	Display	Item No. (Baldur 1)	Price
RCO2-SD	(fixed)	(fixed)				
RCO2-SD-U	0...2000 ppm	0-10 V	–		1501-61A0-1001-200	**224,64 €**
RCO2-W	(switchable)	(switchable)				
RCO2-W	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact		1501-61A0-7301-200	**266,13 €**
RCO2-W VA	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, stainless steel housing		1501-61A0-7301-205	**380,35 €**
RCO2-W LCD	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, display	■	see **RFTM-LQ-CO2**	
RCO2-W-A	(switchable)	(switchable)			**with traffic light**	
RCO2-W-A	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, LEDs		1501-61A0-7331-200	**312,76 €**
	A = with "traffic light" (five coloured LEDs) for displaying the CO2 concentration.					
Note:	This unit **must not** be used as safety-relevant device!					