

Maintenance-free room sensor **AERASGARD® 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...2000ppm). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free room sensor **AERASGARD® 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...2000ppm/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.

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), 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)
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
Ambient temperature:	0...+ 50 °C
Warm up time:	approx. 1 hour
Response time:	< 2 minutes
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Housing:	plastic, material ABS, colour pure white (similar to RAL 9010), 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, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU, Low Voltage Directive 2014 / 35 / EU
Optional:	with traffic light indicator (five coloured LEDs, see table) for displaying the CO ₂ concentration with display (see AERASGARD® RFTM-LQ-CO₂) for displaying the actual CO ₂ content in ppm



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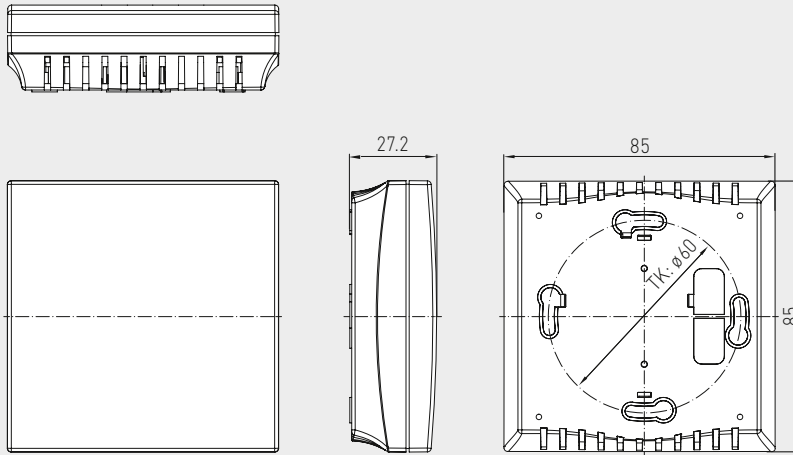
AERASGARD® RCO₂-W
AERASGARD® RCO₂-SD

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



Dimensional drawing

RCO₂-W
RCO₂-SD



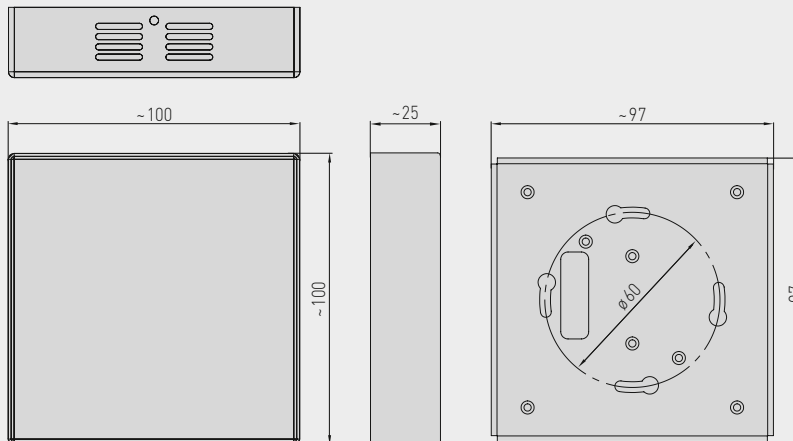
RCO₂-W
RCO₂-SD



Dimensional drawing

RCO₂-W VA

(stainless steel housing)





AERASGARD® **RCO₂-W**
AERASGARD® **RCO₂-SD**

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

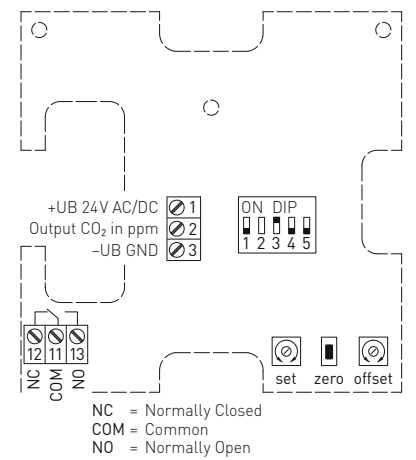


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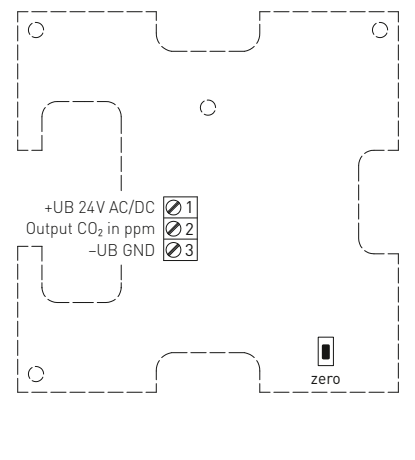
Connecting diagram

RCO₂-W



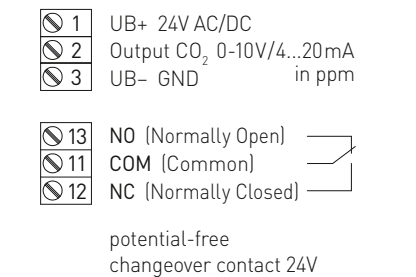
Connecting diagram

RCO₂-SD



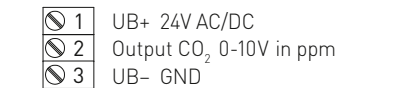
Schematic diagram

RCO₂-W



Schematic diagram

RCO₂-SD



DIP switches		RCO ₂ -W
CO ₂ content		DIP 1
0...2000 ppm (default)		OFF
0...5000 ppm		ON
CO ₂ 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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AERASGARD® RCO₂-W
AERASGARD® RCO₂-SD

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



RCO₂-W-A
with LEDs



Traffic light indicator		RCO ₂ -W-A				
CO ₂ content in ppm		LED 1	LED 2	LED 3	LED 4	LED 5
0...2000 ppm	0...5000 ppm	green	green	yellow	yellow	red
–	350	50 %	–	–	–	–
–	500	75 %	–	–	–	–
350	750	100 %	–	–	–	–
400	1000		25 %	–	–	–
500	1250		50 %	–	–	–
600	1500		75 %	–	–	–
700	1750		100 %	–	–	–
800	2000			25 %	–	–
900	2250			50 %	–	–
1000	2500			75 %	–	–
1100	2750			100 %	–	–
1200	3000				25 %	–
1300	3250				50 %	–
1400	3500				75 %	–
1500	3750				100 %	–
1600	4000					25 %
1700	4250					50 %
1800	4500					75 %
1900	4750					100 %
2000	5000					

Once the aforementioned values have been reached, the respective LED becomes active (with increasing luminosity of 25 %, 50 %, 75 % and 100 %); LEDs that are already active continue to be illuminated.

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

Type / WG02	Measuring Range CO ₂	Output CO ₂	Equipment	Display	Item No. (Baldur 1)	Price
RCO₂-SD	(fixed)	(fixed)				
RCO2-SD-U	0...2000 ppm	0-10 V	–		1501-61A0-1001-200	187,14 €
RCO₂-W	(switchable)	(switchable)				
RCO2-W	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact		1501-61A0-7301-200	224,78 €
RCO2-W VA	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, stainless steel housing		1501-61A0-7301-205	316,97 €
RCO2-W DISPLAY	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, display	■ see RFTM-LQ-CO ₂		
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	262,42 €

A = with "traffic light" (five coloured LEDs) for displaying the CO₂ concentration.

Note: This unit **must not** be used as safety-relevant device!