

**Multifunctional room sensors and measuring transducers,
 for humidity, temperature, air quality (VOC) and CO2 content,
 self-calibrating, with active/switching output**

Maintenance-free room sensor **AERASGARD® RTM - CO2 - SD** with active output, automatic calibration, in an elegant plastic housing with snap-on lid, for determining the CO2 content of the air (0...2000 ppm) and the temperature (0...+50°C). The measuring transducer converts the measured values into a standard signal of 0-10V.

Maintenance-free room sensor **AERASGARD® RFTM - LQ - CO2 - W** with active/switching output, automatic calibration, in an elegant plastic housing with snap-on lid, optionally with/without display, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm), the quality in three VOC sensitivity (0...100 % VOC), the temperature (0...+50°C) as well as the relative air humidity (0...100 % RH). The measuring transducer converts the measured values into a standard signal of 0-10V 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.

A long-term stable, **digital humidity and temperature sensor** guarantees exact measurement results. 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. The air quality is detected by a **VOC sensor** (mixed gas sensor for volatile organic substances). This sensor determines the loading of the room air due to contaminated gases such as cigarette smoke, body perspiration, exhaled breathing air, solvent vapours, emissions, etc. With regard to the expected air contamination, low (SLOW), medium (NORMAL) or high (FAST) VOC sensitivity can be selected.

TECHNICAL DATA

Voltage supply:	24 V AC / DC (± 10 %)
Power consumption:	RCO2-W / RTM-CO2-SD: typical < 1.5 W / 24 V DC; < 2.9 VA / 24 V AC; peak current 200 mA RLQ-CO2-W / RFTM-LQ-CO2-W: typical < 4.4 W / 24 V DC; < 6.4 VA / 24 V AC; peak current 200 mA
Outputs:	RTM-CO2-SD 0-10V (fixed) Rxx-CO2-W 0-10V or 4...20 mA, working resistance < 800 Ω (selectable via DIP switches, selected variant applies for all outputs), with offset potentiometer (± 10 % of the measuring range)
Relay output:	RTM-CO2-SD without changeover contact Rxx-CO2-W potential-free changeover contact (24 V / 1 A), Assignment of measurand is selectable via DIP switches, Switching point can be set via SET-Potentiometer, Hysteresis 1 % of set measuring range
Measurand:	CO2 (ppm), VOC (%), temperature [°C], relative humidity [% RH]

HUMIDITY

Sensor:	digital humidity sensor with integrated temperature sensor, low hysteresis, high long-term stability
Measuring range:	0...100 % RH
Accuracy:	typically ± 2.0 % (20...80 % RH) at +25 °C, otherwise ± 3.0 %

TEMPERATURE

Measuring range:	0...+ 50 °C
Accuracy:	typically ± 0.2 K at +25 °C

AIR QUALITY (VOC)

Sensor:	VOC sensor (metal oxide) with automatic air quality algorithm (volatile organic compounds)
Measuring range:	0...100 % air quality (0 % = clean air / 100 % = polluted air), referred to calibrating gas, multi-range switching VOC sensitivity SLOW / NORMAL / FAST (selectable via DIP switches)
Accuracy:	typically ± 20 % of final value (referred to calibrating gas)
Service life:	> 60 months (under normal load conditions), depending on the type of loading and gas concentration

CARBON DIOXIDE (CO2)

Sensor:	optical NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), RTM-CO2-SD with automatic calibration (fixed) Rxx-CO2-W with automatic calibration (can be deactivated via DIP switches)
Measuring range:	RTM-CO2-SD 0...2000 ppm (fixed) Rxx-CO2-W 0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
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

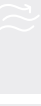
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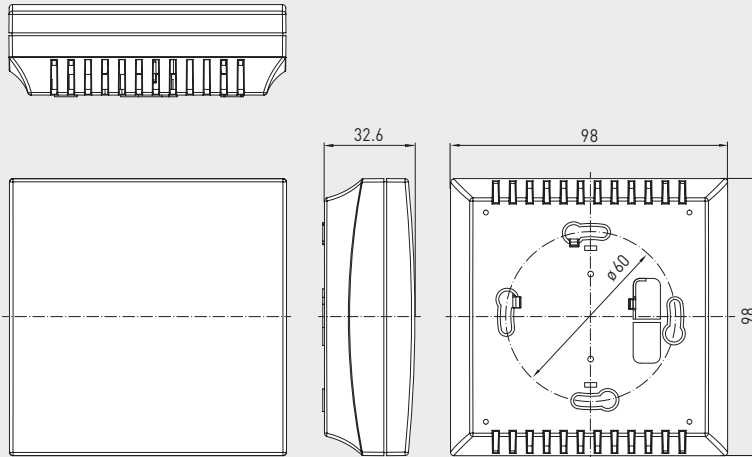
S+S REGELTECHNIK

AERASGARD® RC02-W / RLQ-CO2-W AERASGARD® RFTM-(LQ)-CO2-W / RTM-CO2-SD

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Dimensional drawing

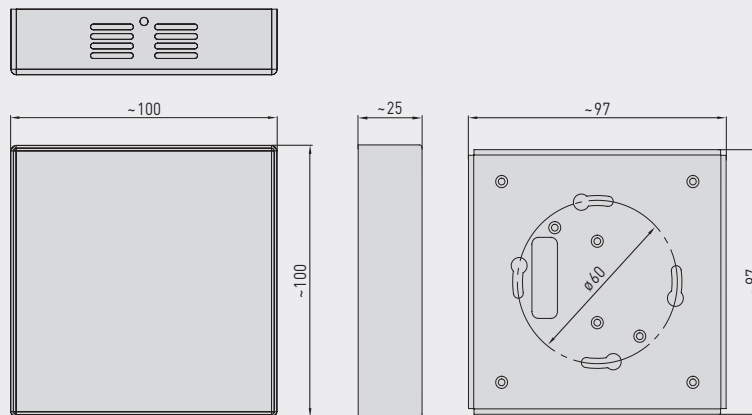


RC02-W with display
RLQ-CO2-W
RFTM-LQ-CO2-W
RTM-CO2-SD

RLQ-CO2-W
RFTM-LQ-CO2-W
RTM-CO2-SD



Dimensional drawing



Stainless steel housing
(See picture
on next page)

RC02-W
RLQ-CO2-W
RFTM-LQ-CO2-W
with display

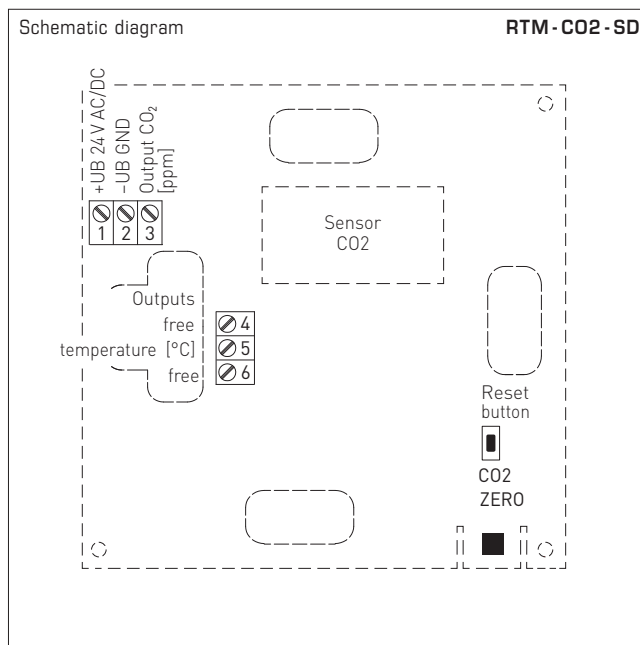
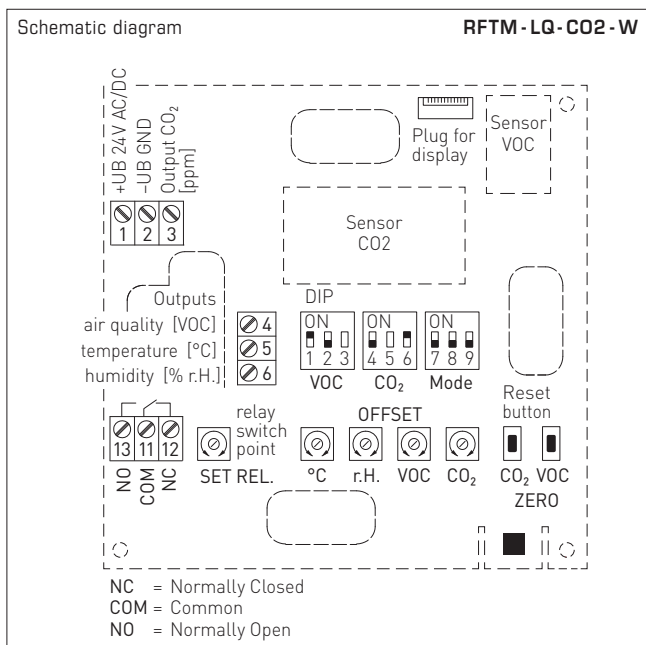


TECHNICAL DATA

(continued)

Warm up time:	approx. 1 hour
Response time:	< 2 minutes
Gas exchange:	by diffusion
Ambient temperature:	0...+50 °C
Permitted humidity:	0...95% RH (non-precipitating air)
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Housing:	Plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016), stainless steel V2A (1.4301) housing optional
Housing dimensions:	98 x 98 x 33 mm (Baldur 2)
Installation:	Wall mounting or on in-wall flush box, Ø55 mm, base with 4 holes, for attachment to vertically or horizontally installed in-wall flush boxes for rear cable entry, with predetermined breaking point for 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:	Display with illumination , two line, cutout approx. 36 x 15 mm (W x H), for displaying actual humidity, actual temperature, air quality and the actual CO2 content

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DIP switches (Baldur 2)		RFTM - LQ - CO2 - W	
VOC			
VOC sensitivity	DIP 1	DIP 2	
FAST	ON	ON	
SLOW	ON	OFF	
NORMAL (default)	OFF	OFF	
CO2			
CO2 - Gehalt	DIP 4		
0...5000 ppm	ON		
0...2000 ppm (default)	OFF		
CO2 automatic calibration	DIP 6		
activated (default)	ON		
deactivated	OFF		
Relay and Outputs			
Relay assignment	DIP 7	DIP 8	
Humidity: 10...95% RH	ON	ON	
Temperature: +5...+48 °C	OFF	ON	
VOC: 10...95 %	ON	OFF	
CO2 (default): 600...1900 ppm / 900...4750 ppm	OFF	OFF	
Output	DIP 9		
Current 4...20 mA	ON		
Voltage 0-10 V (default)	OFF		
Note: DIP 3 and DIP 5 are not assigned!			

Level	Air Quality Index (AQI)	VOC
1	excellent no action required	0...19%
2	good prompt airing recommended	20...39%
3	moderate airing recommended	40...59%
4	poor increased airing required	60...79%
5	unhealthy intense airing necessary	80...100%

Table according to TVOC guidelines of the German Federal Environmental Agency to assess indoor air contamination.



Stainless steel housing
 (optional on request)



S+S REGELTECHNIK

AERASGARD® **RCO2-W / RLQ-CO2-W**
RFTM-(LQ)-CO2-W / RTM-CO2-SD

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°C	U _A [V]	I _A [mA]	°F
0	0.0	4.0	+32
+5	1.0	5.6	+41
+10	2.0	7.2	+50
+15	3.0	8.8	+59
+20	4.0	10.4	+68
+25	5.0	12.0	+77
+30	6.0	13.6	+86
+35	7.0	15.2	+95
+40	8.0	16.8	+104
+45	9.0	18.4	+113
+50	10.0	20.0	+122

% RH	U _A [V]	I _A [mA]
0	0.0	4.0
5	0.5	4.8
10	1.0	5.6
15	1.5	6.4
20	2.0	7.2
25	2.5	8.0
30	3.0	8.8
35	3.5	9.6
40	4.0	10.4
45	4.5	11.2
50	5.0	12.0
55	5.5	12.8
60	6.0	13.6
65	6.5	14.4
70	7.0	15.2
75	7.5	16.0
80	8.0	16.8
85	8.5	17.6
90	9.0	18.4
95	9.5	19.2
100	10.0	20.0

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

% VOC	U _A [V]	I _A [mA]
0	0.0	4.0
5	0.5	4.8
10	1.0	5.6
15	1.5	6.4
20	2.0	7.2
25	2.5	8.0
30	3.0	8.8
35	3.5	9.6
40	4.0	10.4
45	4.5	11.2
50	5.0	12.0
55	5.5	12.8
60	6.0	13.6
65	6.5	14.4
70	7.0	15.2
75	7.5	16.0
80	8.0	16.8
85	8.5	17.6
90	9.0	18.4
95	9.5	19.2
100	10.0	20.0

AERASGARD® **RTM-CO2-SD** Room temperature and CO2 sensor, *Standard*
 AERASGARD® **RCO2-W** Room CO2 sensor, *Premium*
 AERASGARD® **RLQ-CO2-W** Room air quality (VOC) and CO2 sensor, *Premium*
 AERASGARD® **RFTM-CO2-W** Multifunctional room sensor for humidity, temperature and CO2 content, *Deluxe*
 AERASGARD® **RFTM-LQ-CO2-W** Multifunctional room sensor for humidity, temperature, CO2 content and air quality (VOC), *Deluxe*

Type / WG02	Measuring ranges				Equipment	Item No.	Price
	Humidity	Temperature	CO2	VOC	Display	(Balduz 2)	
RTM-CO2-SD			(fixed)				
RTM-CO2-SD-U	-	0...+50 °C	0...2000 ppm	-	-	1501-61B2-1001-200	253,33 €
RCO2-W			(switchable)				
RCO2-W (without display)	-	-	0...2000 / 5000 ppm	-	W	see RCO2-W / RCO2-SD	
RCO2-W LCD	-	-	0...2000 / 5000 ppm	-	W ■	1501-61B0-7321-200	329,09 €
RLQ-CO2-W			(switchable)				
RLQ-CO2-W	-	-	0...2000 / 5000 ppm	0...100 %	W	1501-61B1-7301-600	414,20 €
RLQ-CO2-W LCD	-	-	0...2000 / 5000 ppm	0...100 %	W ■	1501-61B1-7321-600	469,19 €
RFTM-CO2-W			(switchable)				
RFTM-CO2-W	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	-	W	1501-61B6-7301-200	386,94 €
RFTM-CO2-W LCD	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	-	W ■	1501-61B6-7321-200	429,17 €
RFTM-LQ-CO2-W			(switchable)				
RFTM-LQ-CO2-W	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	0...100 %	W	1501-61B8-7301-600	454,23 €
RFTM-LQ-CO2-W LCD	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	0...100 %	W ■	1501-61B8-7321-600	509,21 €
Outputs / equipment:	0-10V or 4...20mA (selectable via DIP switches, selected variant applies for all outputs) – W = changeover contact For unit type RTM-CO2-SD , 0-10V is fixed – no changeover contact!						
Note:	This unit must not be used as safety-relevant device!						