

AERASGARD® RPS-SD AERASGARD® RFTM-PS-CO2-W

Fine dust sensor/particulate sensor,
multifunctional room sensor and measuring transducer
for humidity, temperature, fine dust (PM) and CO2 content,
calibratable, with active/switching output

NEW



S+S REGELTECHNIK

Maintenance-free room sensor **AERASGARD® RPS-SD** with active output, in an elegant plastic housing with snap-on lid, base with 4-hole attachment, for detecting the fine dust content (0...500 µg/m³). The measuring transducer converts the measurand into a standard signal of 0-10 V (fixed).

Maintenance-free, multifunctional room sensor **AERASGARD® RFTM-PS-CO2-W** with active/switching output, automatic calibration, in an elegant plastic housing with snap-on lid, base with 4-hole attachment, optionally with/without display, for detection of measurands air humidity (0...100% r.H.), temperature (0...+50°C), fine dust (PM) (0...50/100/300/500 µg/m³) and CO2 content (0...2000/5000 ppm). The measuring transducer converts the measurand into a standard signal of 0-10 V or 4...20 mA (switchable).

Use just one device to monitor and control the entire indoor climate effectively. This enables energy-saving room ventilation on an as-needed basis, thereby reducing operating costs and improving well-being. It is used in offices, hotels, convention centres, apartments, shops, etc. 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 content of the air is measured using an optical **NDIR sensor** (non-dispersive infra-red technology). An optical **fine dust sensor** precisely detects **particulate (PM)** of the size category 0.3 to 10 micrometres. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible (except for particulate sensor).

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)	
Power consumption:	RPS-SD	typically < 1.5 W / 24 V DC; < 2.9 VA / 24 V AC
	RFTM-PS-CO2-W	typically < 4.4 W / 24 V DC; < 6.4 VA / 24 V AC; peak current 200 mA
Output:	RPS-SD	0-10 V (fixed)
	RFTM-PS-CO2-W	0-10 V or 4...20 mA, working resistance < 800 Ω (selectable via DIP switches, selected version applies uniformly to all outputs), with offset potentiometer (± 10 % of measuring range)
Relay output:	RPS-SD	without changeover contact
	RFTM-PS-CO2-W	with potential-free changeover contact (24 V / 1 A) (assignment selectable via DIP switches, switch point can be set)

HUMIDITY

Sensor (RH / °C):	digital humidity sensor with integrated temperature sensor , low hysteresis, high long-term stability	
Measuring range (RH):	0...100% r. H.	
Output (RH):	0-10 V or 4...20 mA (selectable via DIP switches)	
Deviation (RH):	typically ± 2.0 % (20...80% r. H.) at +25 °C, otherwise ± 3.0 %	

TEMPERATURE

Measuring range (°C):	0...+ 50 °C	
Output (°C):	0-10 V or 4...20 mA (selectable via DIP switches)	
Deviation (°C):	typically ± 0.2 K at +25 °C	

FINE DUST (PM)

Sensor (PM):	optical particulate sensor (PM = particulate matter) , fine-dust sensor with laser- and soiling-resistant technology	
Measuring range (PM):	multi-range switching (selectable via DIP switches) 0...50, 0...100, 0...300 or 0...500 µg/m³	
Output (PM):	RPS-SD	0-10 V (fixed)
	RFTM-PS-CO2-W	0-10 V or 4...20 mA (selectable via DIP switches)
Particle size (PM):	PM 2.5 (0.3...2.5 µm); PM 10 (0.3...10 µm)	
Measuring accuracy (PM):	typically ± 10 µg/m³ (± 10 % of measured value) at PM 2.5 typically ± 25 µg/m³ (± 25 % of measured value) at PM 10	
Long-term stability (PM):	± 1.25 µg/m³ (± 1.25 % of measured value/year)	
Service life (PM):	> 10 years	

CARBON DIOXIDE (CO2)

Sensor (CO2):	Optical NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), with automatic calibration (can be deactivated via DIP switches)	
Measuring range (CO2):	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)	
Output (CO2):	0-10 V or 4...20 mA (selectable via DIP switches)	
Measuring accuracy (CO2):	typically ± 30 ppm (± 3 % of measured value)	
Temperature dependence (CO2):	± 5 ppm / °C or ± 0.5 % of measured value / °C (whichever is greater)	
Pressure dependence (CO2):	± 0.13 % / mm Hg	
Long-term stability (CO2):	< 2 % in 15 years	
Gas exchange (CO2):	Diffusion	

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**NEW**

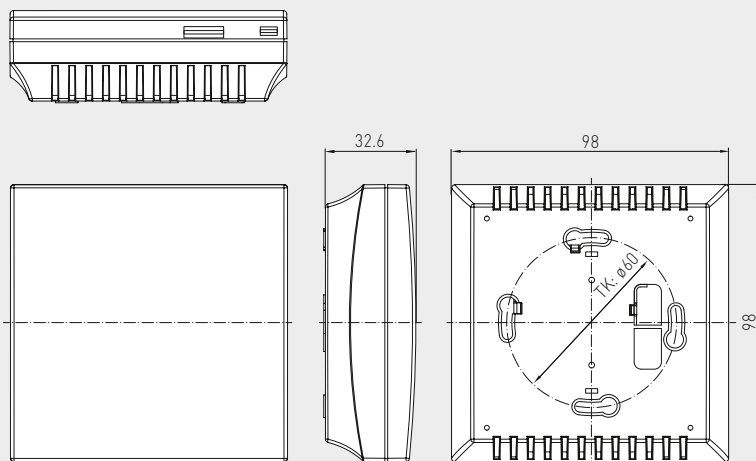
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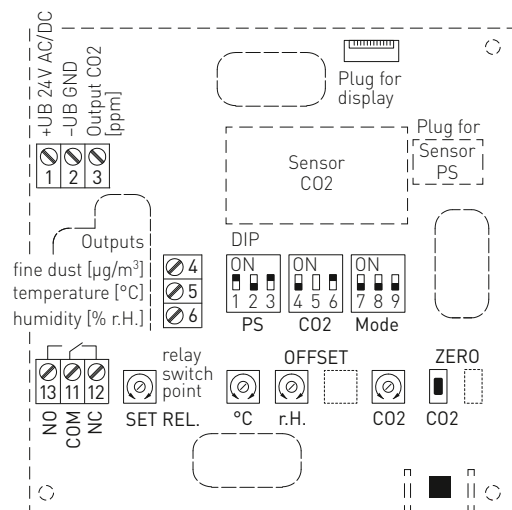
Dimensional drawing

RPS-SD
RFTM-PS-CO2-WRPS-SD
RFTM-PS-CO2-W
without displayRFTM-PS-CO2-W
with display**TECHNICAL DATA****(continued)**

Ambient temperature:	0...+50 °C
Permitted humidity:	0...95 % r. H. (non-precipitating air)
Warm up time:	approx. 1 hour
Response time:	< 2 minutes
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Housing:	plastic, material ABS, colour pure white (similar to RAL 9010)
Dimensions:	98 x 98 x 33 mm (Balduz 2)
Mounting:	wall mounting or on in-wall flush box, Ø 55 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 top/bottom cable entry for surface-mounted installation
Protection class:	III (according to EN 60 730)
IP rating:	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:	Display with illumination , 2-line, cutout approx. 36 x 15 mm (W x H), to display the actual humidity, actual temperature, of the fine-dust and CO2 content as well as for switch point display

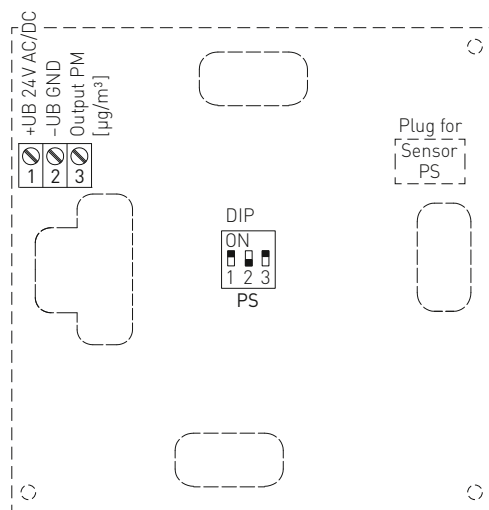
Schematic diagram

RFTM-PS-CO2-W

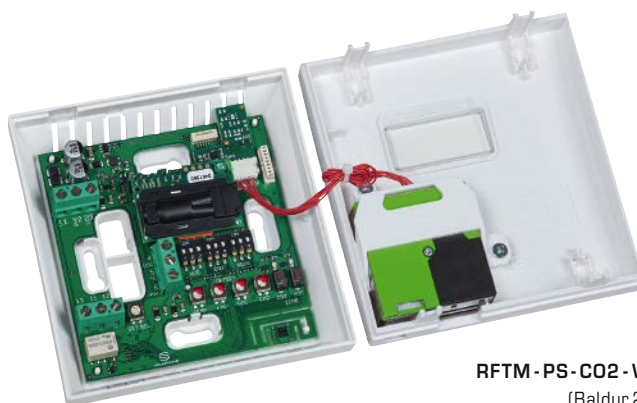


Schematic diagram

RPS-SD



DIP switch	RPS - SD	
Fine dust (PM) Measuring range	DIP 1	DIP 2
0...50 µg/m³	OFF	OFF
0...100 µg/m³ (default)	ON	OFF
0...300 µg/m³	OFF	ON
0...500 µg/m³	ON	ON
Fine dust (PM) Particle size	DIP 3	
PM 2.5 (default)	ON	
PM 10	OFF	



Rev. 2022 - V12 GB

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Humidity table

MR: 0...100 % r.H.

% r.H.	U _A in V	I _A in mA
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
Continued at the right ...		

% r.H.	U _A in V	I _A in mA
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

Temperature table

MR: 0...+50 °C

°C	U _A in V	I _A in mA
0	0	4.0
5	1.0	5.6
10	2.0	7.2
15	3.0	8.8
20	4.0	10.4
25	5.0	12.0
30	6.0	13.6
35	7.0	15.2
40	8.0	16.8
45	9.0	18.4
50	10.0	20.0

AERASGARD®

RPS-SD

Room fine dust sensor / fine dust sensor / particulate sensor (PM), *Standard*

RFTM-PS-W

Multifunctional room sensor
for humidity, temperature and fine dust (PM), *Premium*

RFTM-PS-CO2-W

Multifunctional room sensor
for humidity, temperature, fine dust (PM) and CO2 content, *Deluxe*

Type/WG02	Measuring Range		PM	CO2	Equipment Display	Item No.
	Humidity	Temperature				
RPS-SD			(switchable)			
RPS-SD	–	–	0... 50 µg/m³ 0...100 µg/m³ 0...300 µg/m³ 0...500 µg/m³	–		1501-2110-1001-000
RFTM-PS-W			(switchable)	(switchable)		
RFTM-PS-W	0...100% r.H.	0...+50 °C	0... 50 µg/m³ 0...100 µg/m³ 0...300 µg/m³ 0...500 µg/m³	–	W	1501-2116-7301-000
RFTM-PS-W LCD	0...100% r.H.	0...+50 °C	(4x as above)	–	W ■	1501-2116-7321-000
RFTM-PS-CO2-W						
RFTM-PS-CO2-W	0...100% r.H.	0...+50 °C	0... 50 µg/m³ 0...100 µg/m³ 0...300 µg/m³ 0...500 µg/m³	0...2000 ppm / 0...5000 ppm	W	1501-2113-7301-000
RFTM-PS-CO2-W LCD	0...100% r.H.	0...+50 °C	(4x as above)	0...2000 ppm / 0...5000 ppm	W ■	1501-2113-7321-000
Outputs:	0-10V or 4...20mA (selectable via DIP switches, selected variant applies for all outputs) – <i>Standard</i> room sensor RPS-SD with fixed output 0-10V!					
Equipment:	W = changeover contact – <i>Standard</i> room sensor RPS-SD without changeover contact!					
Note:	These units must not be used as safety-relevant devices!					