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

S+S REGELTECHNIK

Maintenance-free room sensor **AER**ASGARD® **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 **AER**ASGARD® **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 % RH), 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 % RH
Output (RH):	0-10 V or 4...20 mA (selectable via DIP switches)
Accuracy (RH):	typically **± 2.0** % (20...80 % RH) 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)
Accuracy (°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)	
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)

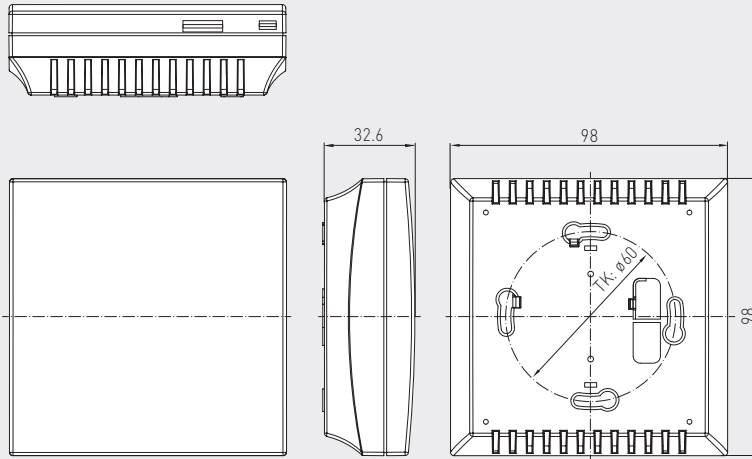|	
Sensor (CO2):	optical **NDIR sensor** (non-dispersive infra-red technology), with manual calibration (via zero button), with automatic calibration (can be deactivated via DIP switches)
Measuring range (CO2):	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Output (CO2):	0-10 V or 4...20 mA (selectable via DIP switches)
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

Continued on next page!

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Dimensional drawing

RPS-SD
RFTM-PS-CO2-W

32.6   98   98

RPS-SD
RFTM-PS-CO2-W
without display

RFTM-PS-CO2-W
with display

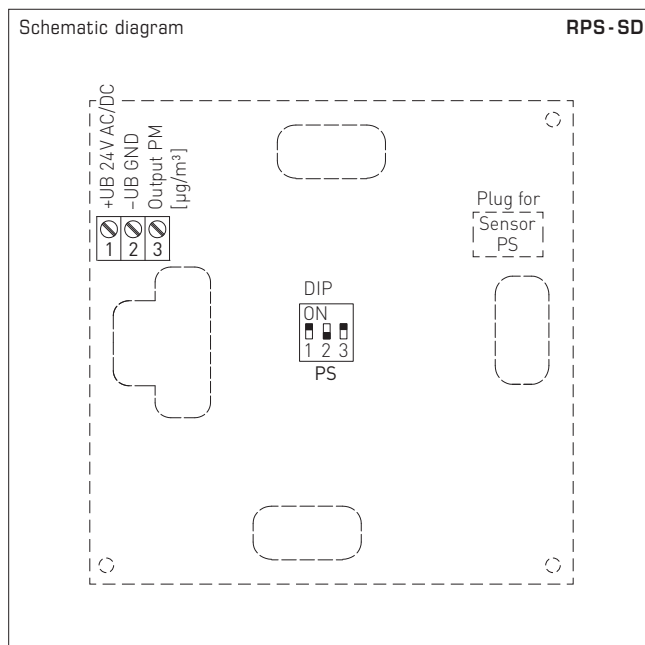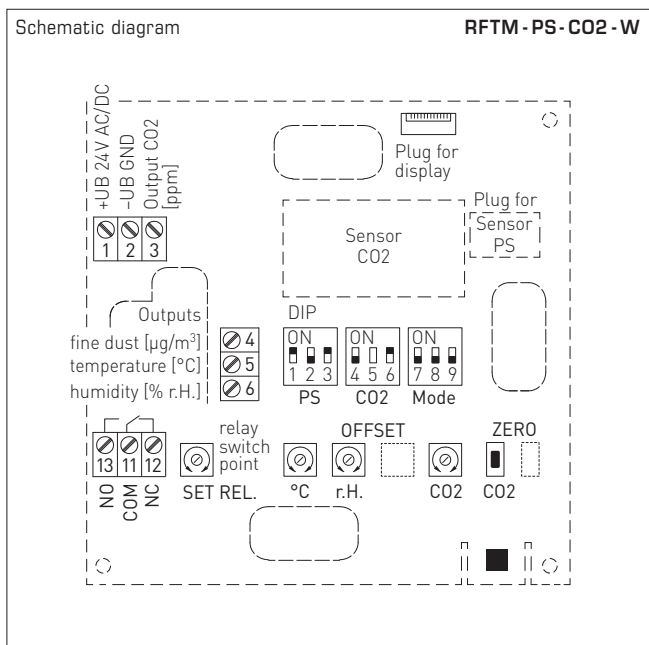| TECHNICAL DATA		(continued)
Ambient temperature:	0...+50 °C	
Permitted humidity:	0...95 % RH (non-precipitating air)	
Warm up time:	approx. 1 hour	
Response time:	< 2 minutes	
Electrical connection:	0.14 - 1.5 mm², via screw terminals	
Housing:	plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016)	
Dimensions:	98 x 98 x 33 mm (Baldur 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 according to 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	

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Fine dust sensor / particulate sensor,
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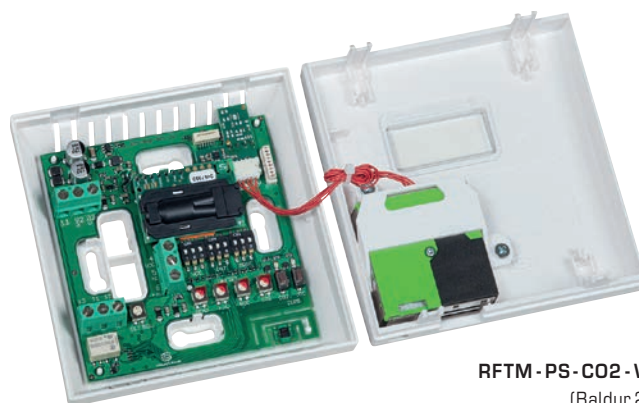calibratable, with active / switching output

S+S REGELTECHNIK

Schematic diagram — RFTM-PS-CO2-W

Schematic diagram — RPS-SD

DIP switch	RFTM-PS-xx	
Fine dust (PM) Measuring range	**DIP 1**	**DIP 2**
0...50 µg/m^3	OFF	OFF
0...100 µg/m^3 (default)	**ON**	OFF
0...300 µg/m^3	OFF	**ON**
0...500 µg/m^3	**ON**	**ON**
Fine dust (PM) Particle size		**DIP 3**
PM 2.5 (default)		**ON**
PM 10		OFF
CO2 content		**DIP 4**
0...2000 ppm (default)		OFF
0...5000 ppm		**ON**
CO2 automatic zero point		**DIP 6**
deactivated		OFF
activated (default)		**ON**
Relay assignment	**DIP 7**	**DIP 8**
CO2 (default) 600...1900 ppm / 900...4700 ppm	OFF	OFF
Fine dust 10 %...95 % of measuring range	**ON**	OFF
Temperature +5...+48 °C	OFF	**ON**
Humidity 10...95 % RH	**ON**	**ON**
Output		**DIP 9**
Voltage 0-10 V (default)		OFF
Current 4...20 mA		**ON**
Note: **DIP 5** is not assigned !		

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

RFTM-PS-CO2-W
(Baldur 2)

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Humidity table
MR: 0...100 % RH

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

Temperature table
MR: 0...+50 °C

°C	U_A [V]	I_A [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				Equipment	Item No.	Price
	Humidity	Temperature	PM	CO2	Display		
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	**328,95 €**
RFTM-PS-W			(switchable)	(switchable)			
RFTM-PS-W	0...100 % RH	0...+50 °C	0... 50 µg/m³ 0...100 µg/m³ 0...300 µg/m³ 0...500 µg/m³	–	W	1501-2116-7301-000	**429,11 €**
RFTM-PS-W **LCD**	0...100 % RH	0...+50 °C	(4x as above)	–	W ■	1501-2116-7321-000	**521,34 €**
RFTM-PS-CO2-W							
RFTM-PS-CO2-W	0...100 % RH	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	**499,57 €**
RFTM-PS-CO2-W **LCD**	0...100 % RH	0...+50 °C	(4x as above)	0...2000 ppm / 0...5000 ppm	W ■	1501-2113-7321-000	**552,97 €**

Outputs:	**0-10 V or 4...20 mA** (selectable via DIP switches, selected variant applies for all outputs) – *Standard* room sensor **RPS-SD** with fixed output 0-10 V!
Equipment:	**W = changeover contact** – *Standard* room sensor **RPS-SD** without changeover contact!
Note:	These units must **not** be used as safety-relevant devices!