



Air Quality

AERASGARD®

Multifunctional sensor technology for air quality and more

Broad Spectrum

Our active devices for measuring and regulating CO₂, gas mixtures (VOC) and fine dust (PM) are designed to be multifunctional. This reduces the diversity of types and expands their possible applications. Thanks to micro-processor technology, almost any measuring range can be represented, including custom specifications. DIP switches are used to select functions such as multi-range switching, automatic mode, and manual calibration.

Optimum Precision

The devices are tested according to the latest criteria. Take advantage of our experience, our development, manufacturing and product know-how and order these products directly from the manufacturer.

Tested safety and certified quality



RoHS conforming materials



ESD compliant manufacturing



CE conformity



UKCA conformity
(UK Conformity Assessed)



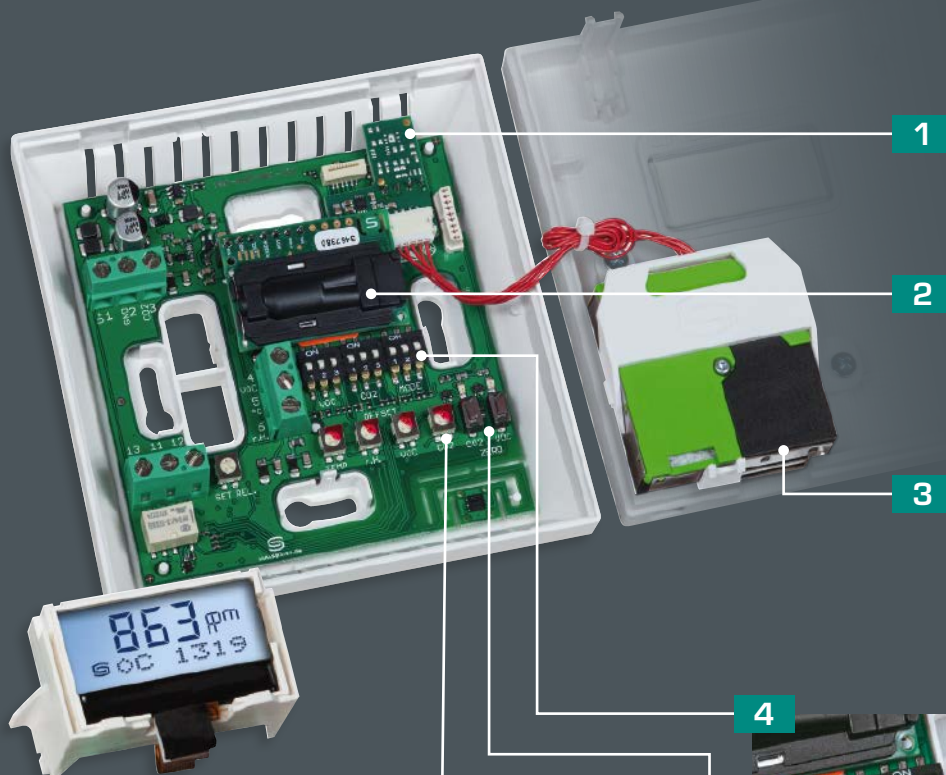
Development, production and sales are certified by TÜV Thüringen according to DIN EN ISO 9001:2015 (quality management) and ISO 14001:2015 (environmental management).



EAC certified



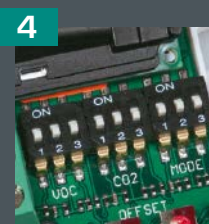
GOST certified



1 VOC Sensor
Air quality sensor for detecting mixed gases

2 CO2 Sensor
Optical carbon dioxide sensor with non-dispersive infrared technology (NDIR)

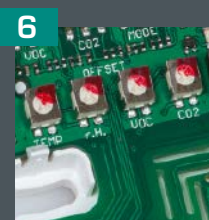
3 Fine dust sensor (PM)
Optical particle sensor with laser and contamination resistance technology



DIP Switches
For individual adjustment of measuring ranges, output, automatic zero point and relay assignment



Trigger
For CO2 or VOC zero point

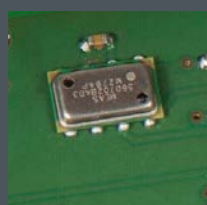


Potentiometer
For setting the relay thresholds for CO2 and VOC. For setting the offsets for temperature, humidity, CO2 and VOC

Optional Display
With backlighting



PLEUROFORM™
Multi-channel pipe for simultaneous measuring of CO2 and VOC



Air Pressure Compensation
Premium duct sensors with barometric air pressure compensation of CO2 readings



Maintenance-free room sensor **AERASGARD® RLQ - SD** with active output, automatic calibration, in an elegant plastic housing with snap-on lid, for determining the air quality (0...100 % VOC). The measuring transducer converts the measured values into a standard signal of 0-10 V or 4...20 mA (switchable).

Maintenance-free room sensor **AERASGARD® RLQ - W** with active/switching output, automatic calibration in an elegant plastic housing with snap-on lid, optional with traffic light indicator (five coloured LEDs), for determining the air quality (0...100 % VOC). 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 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, medium or high VOC sensitivity can be selected. As an alternative, use IAQ categories (from excellent to unhealthy) following the guidelines of the German Federal Environmental Agency to assess the room air.

RLQ - W
RLQ - SD



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
Sensor:	VOC sensor (metal oxide) (VOC = volatile organic compounds),, with manual calibration (via zero button), with automatic calibration (permanently active)
Measuring range:	0...100 % air quality; referred to calibrating gas; multi-range switching (selectable via DIP switches) VOC sensitivities (low/medium/high) or IAQ category (Indoor Air Quality)
Output:	(0 V = clean air, 10 V = polluted air) RLQ - SD 0-10 V (fixed) RLQ - 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:	RLQ - SD without changeover contact RLQ - W with potential-free changeover contact (24 V / 1 A) (switchpoint can be adjusted from 0...100 % of the output signal)
Measuring 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
Gas exchange:	by diffusion
Ambient temperature:	0...+ 50 °C
Warm-up time:	approx. 1 hour
Response time:	approx. 1 minute
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), optional stainless steel 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 air quality.



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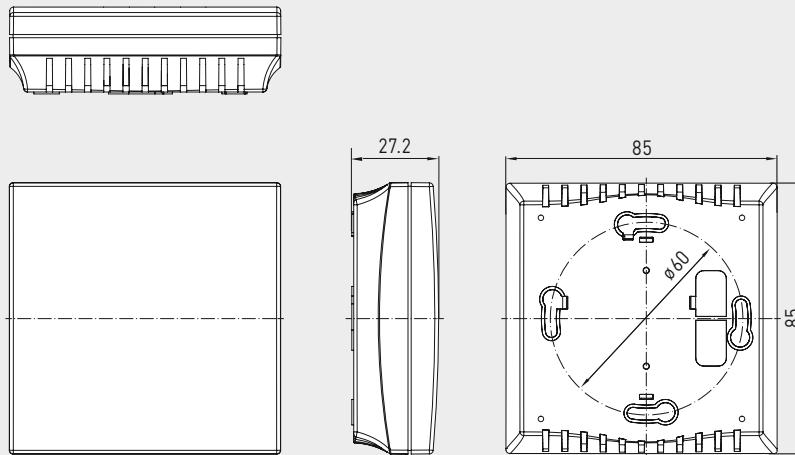
AERASGARD® RLQ-W
AERASGARD® RLQ-SD

Room air quality sensor (VOC) and measuring transducer,
self-calibrating, with multi-range switching
and active/switching output



Dimensional drawing

RLQ-W
RLQ-SD



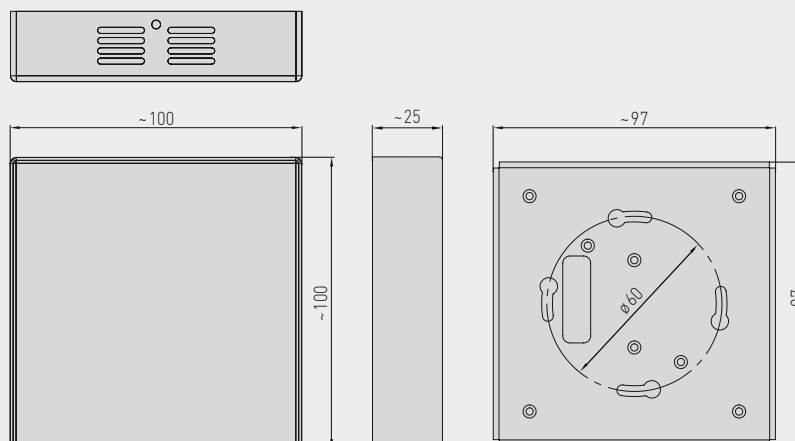
RLQ-W-A
with LEDs



Dimensional drawing

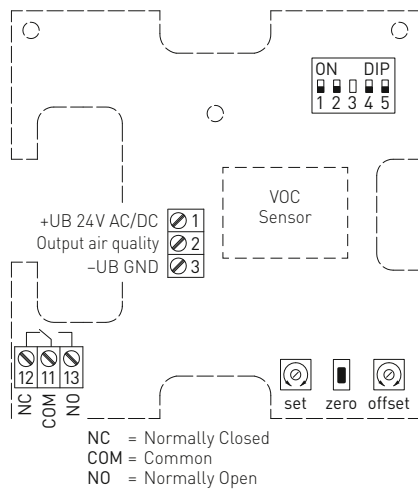
RLQ-W VA

RLQ-W VA
(stainless steel housing)



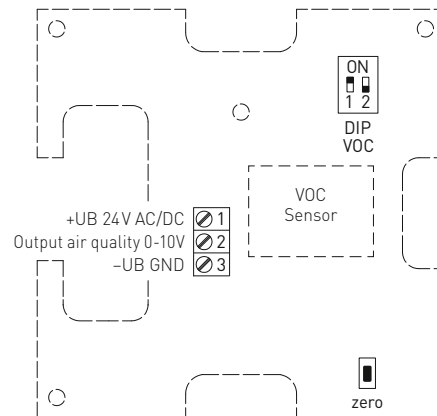
Connecting diagram

RLQ-W



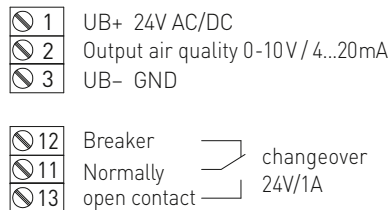
Connecting diagram

RLQ-SD



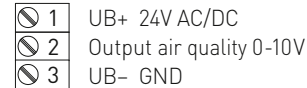
Schematic diagram

RLQ-W



Schematic diagram

RLQ-SD



DIP switches RLQ-W		
VOC sensitivity	DIP 1	DIP 2
LOW	OFF	OFF
MEDIUM (default)	ON	OFF
HIGH	OFF	ON
IAQ (Indoor Air Quality)	ON	ON
Output		DIP 4
Voltage 0-10V (default)		OFF
Current 4...20 mA		ON
Traffic light (5x LEDs)		DIP 5
deactivated		OFF
activated		ON
Note: DIP 3 is not assigned!		

DIP switches RLQ-SD		
VOC sensitivity	DIP 1	DIP 2
LOW	OFF	OFF
MEDIUM (default)	ON	OFF
HIGH	OFF	ON
IAQ (Indoor Air Quality)	ON	ON

Level	IAQ (Indoor Air Quality)	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
(Bundesgesundheitsbl – Gesundheitsforsch –
Gesundheitsschutz 2007, 50: 990–1005)



S+S REGELTECHNIK

AERASGARD® RLQ-W
AERASGARD® RLQ-SD

Room air quality sensor (VOC) and measuring transducer,
self-calibrating, with multi-range switching
and active/switching output



RLQ-W-A
with LEDs

Traffic light indicator					RLQ-W-A
VOC content	LED 1 green	LED 2 green	LED 3 yellow	LED 4 yellow	LED 5 red
0 %	25 %	—	—	—	—
5 %	50 %	—	—	—	—
10 %	75 %	—	—	—	—
15 %	100 %	—	—	—	—
20 %		25 %	—	—	—
25 %		50 %	—	—	—
30 %		75 %	—	—	—
35 %		100 %	—	—	—
40 %			25 %	—	—
45 %			50 %	—	—
50 %			75 %	—	—
55 %			100 %	—	—
60 %				25 %	—
65 %				50 %	—
70 %				75 %	—
75 %				100 %	—
80 %					25 %
85 %					50 %
90 %					75 %
95 %					100 %
100 %					

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® RLQ-SD		Room air quality sensor (VOC) and measuring transducer, <i>Standard</i>		
AERASGARD® RLQ-W		Room air quality sensor (VOC) and measuring transducer, <i>Premium</i>		
Type/WG02	Measuring Range VOC	Output VOC	Equipment	Item No.
RLQ-SD		(fixed)		
RLQ-SD-U	0...100 %	0-10 V	—	1501-61C0-1001-500
RLQ-W		(switchable)		
RLQ-W	0...100 %	0-10 V / 4...20 mA	Changeover contact	1501-61C0-7301-500
RLQ-W VA	0...100 %	0-10 V / 4...20 mA	Changeover contact, stainless steel housing	1501-61C0-7301-505
RLQ-W-A		(switchable)		with traffic light
RLQ-W-A	0...100 %	0-10 V / 4...20 mA	Changeover contact, LEDs	1501-61C0-7331-500
A = with "traffic light" (five coloured LEDs) for displaying the air quality (VOC).				
Note: This unit must not be used as safety-relevant device!				

Maintenance-free room sensor **AERASGARD® RC02 - 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® RC02 - 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), RC02 - SD with automatic calibration (fixed) RC02 - W with automatic calibration (can be deactivated via DIP switches)
Measuring range:	RC02 - SD 0...2000 ppm (fixed) RC02 - W 0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Output:	RC02 - SD 0-10 V (fixed) RC02 - 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:	RC02 - SD without changeover contact RC02 - 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 AERASGARD® RFTM-LQ-CO2) for displaying the actual CO2 content in ppm



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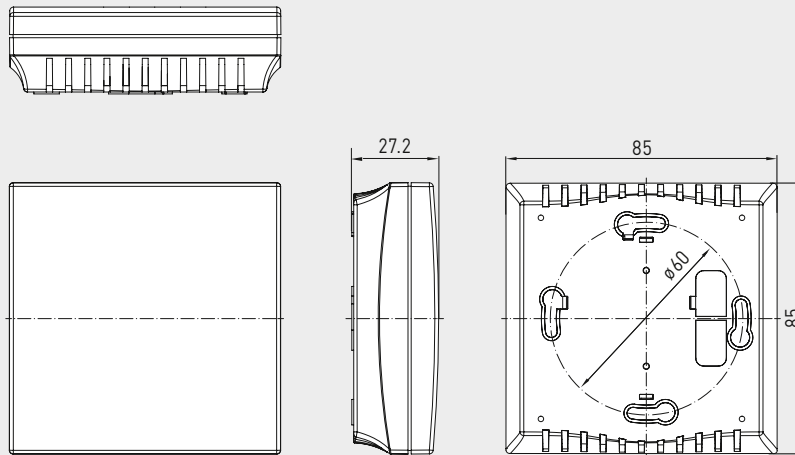
AERASGARD® RC02-W
AERASGARD® RC02-SD

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



Dimensional drawing

RC02-W
RC02-SD



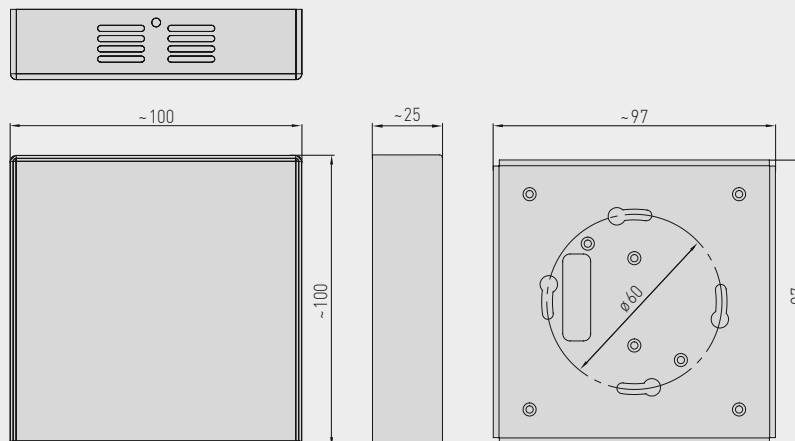
RC02-W
RC02-SD



Dimensional drawing

RC02-W VA

(stainless steel housing)



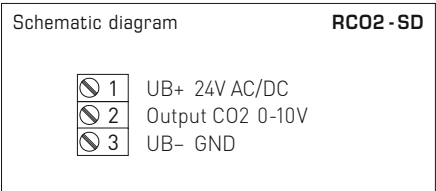
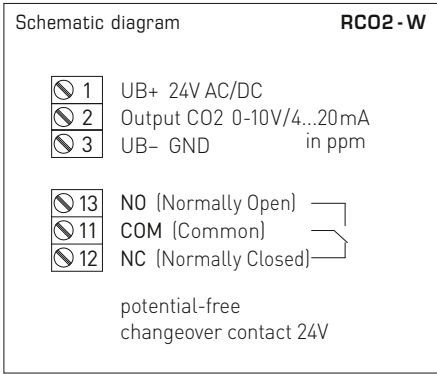
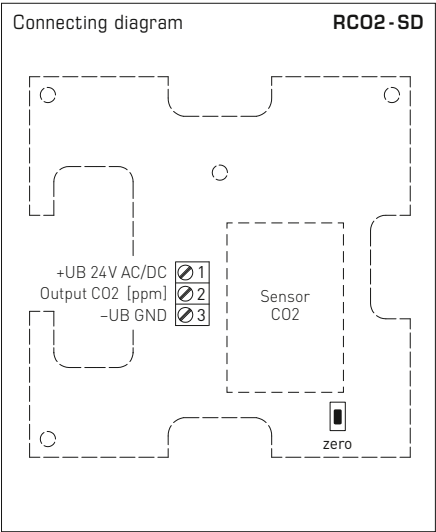
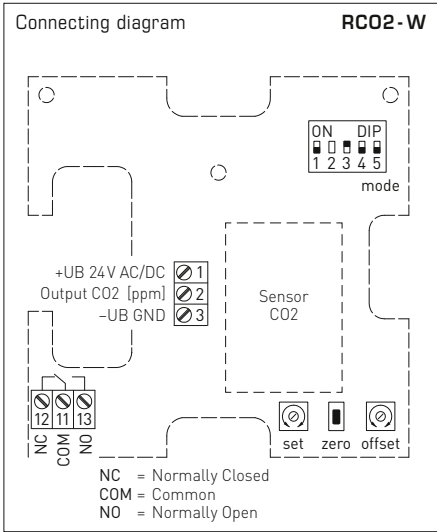


AERASGARD® **RC02 - W**
AERASGARD® **RC02 - SD**

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



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DIP switches RC02 - 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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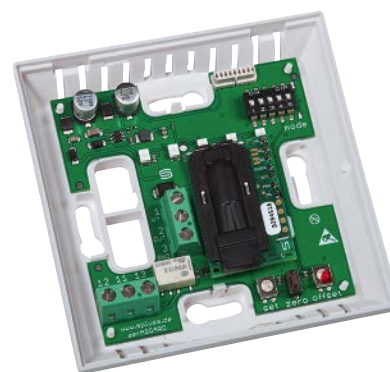
AERASGARD® RC02-W
AERASGARD® RC02-SD

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

RC02-W-A
with LEDs

Traffic light indicator		RC02-W-A				
CO2 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	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.



AERASGARD® RC02-SD Room CO2 sensor and measuring transducer, *Standard*
AERASGARD® RC02-W Room CO2 sensor and measuring transducer, *Premium*

Type / WG02	Measuring Range CO2	Output CO2	Equipment	Display	Item No. (Baldur 1)
RC02-SD	(fixed)	(fixed)			
RC02-SD-U	0...2000 ppm	0-10 V	–		1501-61A0-1001-200
RC02-W	(switchable)	(switchable)			
RC02-W	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact		1501-61A0-7301-200
RC02-W VA	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, stainless steel housing		1501-61A0-7301-205
RC02-W LCD	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, display	■ see RFTM-LQ-C02	
RC02-W-A	(switchable)	(switchable)			with traffic light
RC02-W-A	0...2000 ppm / 0...5000 ppm	0-10 V / 4...20 mA	Changeover contact, LEDs		1501-61A0-7331-200
A = with "traffic light" (five coloured LEDs) for displaying the CO2 concentration.					
Note: This unit must not be used as safety-relevant device!					

**Multifunctional room sensors and measuring transducers,
 for humidity, temperature, air quality (VOC) and CO2 content,
 calibratable, 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 0-10 V.

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 0-10 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.

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. As an alternative, use IAQ categories (from excellent to unhealthy) following the guidelines of the German Federal Environmental Agency to assess the room air.

TECHNICAL DATA

Voltage supply:	24 V AC / DC (± 10%)
Power consumption:	RC02 - W / RTM - CO2 - SD: < 1.5 W / 24 V DC typical; < 2.9 VA / 24 V AC typical; peak current 200 mA RLQ - CO2 - W / RFTM - LQ - CO2 - W: < 4.4 W / 24 V DC typical; < 6.4 VA / 24 V AC typical; peak current 200 mA
Outputs:	RTM - CO2 - SD 0-10 V (fixed) Rxx - CO2 - W 0-10 V 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 with potential-free changeover contact (24 V / 1 A) (assignment selectable via DIP switches, switchpoint adjustable)

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
Accuracy (°C):	typically ± 0.2 K at +25 °C
Output (°C):	RTM - CO2 - SD 0-10 V (fixed) Rxx - CO2 - W 0-10 V or 4...20 mA (selectable via DIP switches)

AIR QUALITY (VOC)

Sensor (VOC):	VOC sensor (metal oxide) (VOC = volatile organic compounds), with manual calibration (via zero button) and automatic calibration (permanently active)
Measuring range (VOC):	0...100% air quality; referred to calibrating gas; multi-range switching (selectable via DIP switches) VOC sensitivities (low/medium/high) or IAQ category (Indoor Air Quality)
Output (VOC):	0-10 V (0 V = clean air, 10 V = polluted air) or 4...20 mA (selectable via DIP switches, switchpoint can be adjusted from 0...100 % of the output signal)
Accuracy (VOC):	typically ± 20 % of final value (referred to calibrating gas)
Service life (VOC):	> 60 months (under normal load conditions) depending on the type of loading and gas concentration

CARBON DIOXIDE (CO2)

Sensor (CO2):	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 (CO2):	RTM - CO2 - SD 0...2000 ppm (fixed) Rxx - CO2 - W 0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Output (CO2):	RTM - CO2 - SD 0-10 V (fixed) Rxx - CO2 - W 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 higher)
Pressure dependence (CO2):	± 0.13 % / mm Hg
Long-term stability (CO2):	< 2 % in 15 years
Gas exchange (CO2):	by diffusion

continued on next page!



S+S REGELTECHNIK

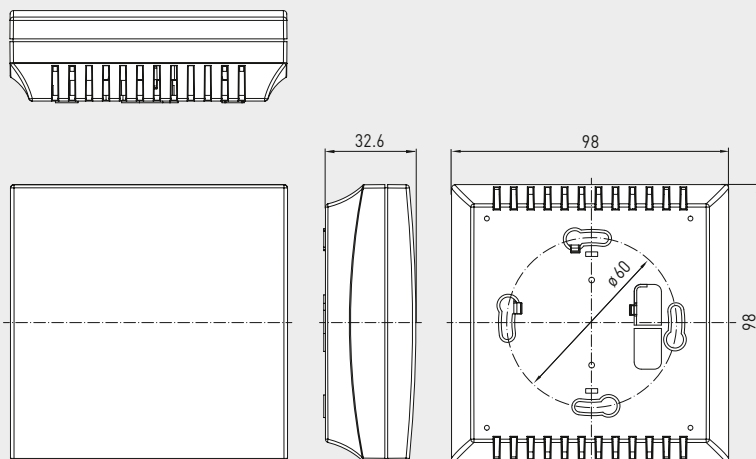
AERASGARD® RC02-W / RLQ-CO2-W AERASGARD® RFTM-(LQ)-CO2-W / RTM-CO2-SD

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



Dimensional drawing

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

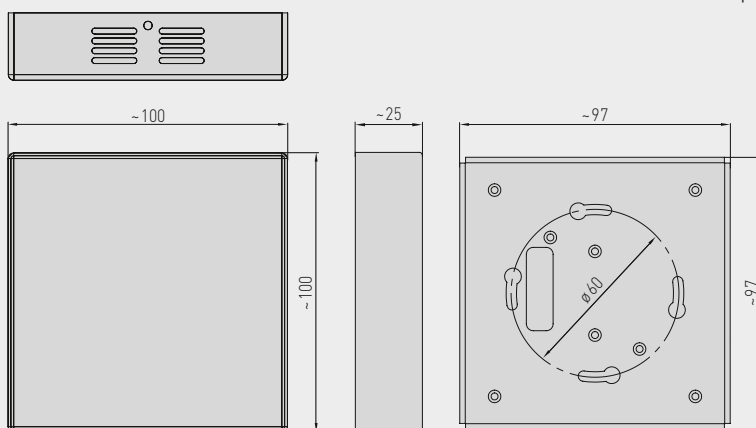


RLQ-CO2-W
RFTM-LQ-CO2-W
RTM-CO2-SD



Dimensional drawing

Stainless steel housing
(See picture
on next page)



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



TECHNICAL DATA

(continued)

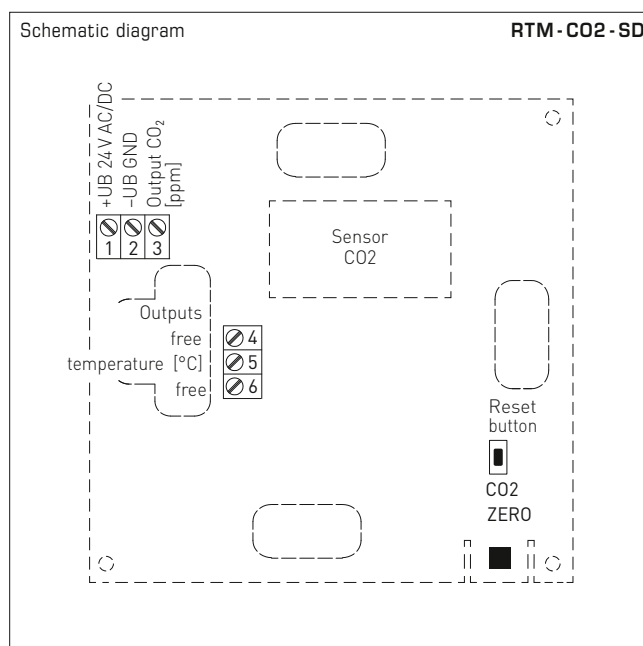
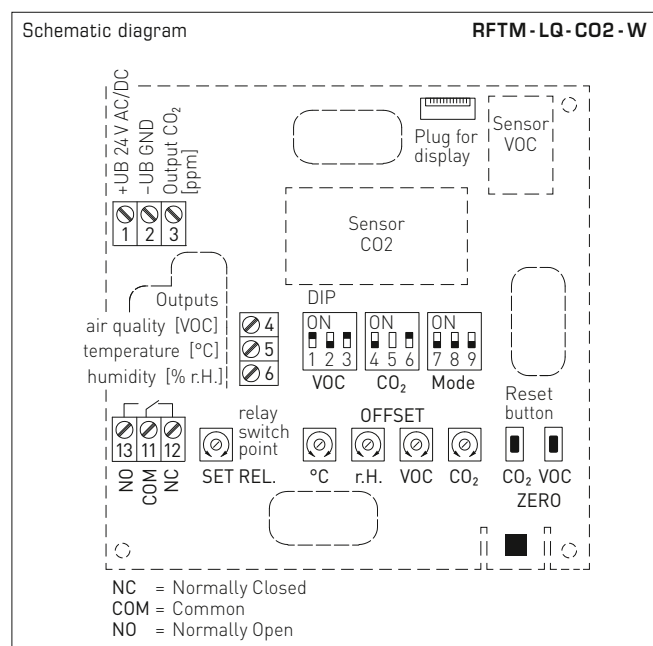
Ambient temperature:	0...+50 °C
Permitted humidity:	0...95% RH (non-precipitating air)
Warm up time:	approx. 1 hour
Response time:	< 2 minutes
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Housing:	plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016), stainless steel V2A (1.4301) housing optional
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

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



S+S REGELTECHNIK

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

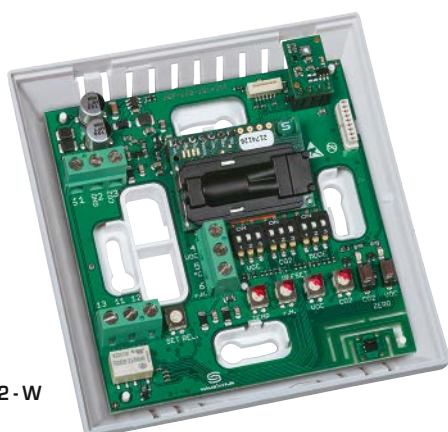


DIP switches (Baldur 2)		RFTM-LQ-CO2-W	
VOC sensitivity		DIP 1	DIP 2
LOW		OFF	OFF
MEDIUM (default)		ON	OFF
HIGH		OFF	ON
IAQ (Indoor Air Quality)		ON	ON
CO2 content			DIP 4
0...2000 ppm (default)			OFF
0...5000 ppm			ON
CO2 automatic zero point			DIP 6
deactivated			OFF
activated (default)			ON
Relay assignment		DIP 7	DIP 8
CO2 (default): 600...1900 ppm / 900...4700 ppm		OFF	OFF
VOC:	10...95%	ON	OFF
Temperature:	+5...+48°C	OFF	ON
Humidity:	10...95% RH	ON	ON
Output			DIP 9
Voltage 0-10V (default)			OFF
Current 4...20mA			ON
Note: DIP 3 and DIP 5 are not assigned!			

Level	IAQ (Indoor Air Quality)	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
(Bundesgesundheitsbl - Gesundheitsforsch - Gesundheitsschutz 2007, 50: 990-1005)

RFTM-LQ-CO2-W
(Baldur 2)



Stainless steel housing
(optionally available
upon request)





S+S REGELTECHNIK

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

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

Humidity table

MR: 0...100 % RH

% RH	U _A [V]	I _A [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 ...		

% RH	U _A [V]	I _A [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 [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® RTM-CO2-SD	Room temperature and CO2 sensor, <i>Standard</i>
AERASGARD® RCO2-W	Room CO2 sensor, <i>Premium</i>
AERASGARD® RLQ-CO2-W	Room air quality (VOC) and CO2 sensor, <i>Premium</i>
AERASGARD® RFTM-CO2-W	Multifunctional room sensor for humidity, temperature and CO2 content, <i>Deluxe</i>
AERASGARD® RFTM-LQ-CO2-W	Multifunctional room sensor for humidity, temperature, CO2 content and air quality (VOC), <i>Deluxe</i>

Type / WG02	Measuring Range		CO2	VOC	Equipment Display	Item No. (Baldur 2)
	Humidity	Temperature				
RTM-CO2-SD			(fixed)			
RTM-CO2-SD-U	–	0...+50 °C	0...2000 ppm	–	–	1501-61B2-1001-200
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
RLQ-CO2-W			(switchable)			
RLQ-CO2-W	–	–	0...2000 / 5000 ppm	0...100 %	W	1501-61B1-7301-500
RLQ-CO2-W LCD	–	–	0...2000 / 5000 ppm	0...100 %	W ■	1501-61B1-7321-500
RFTM-CO2-W			(switchable)			
RFTM-CO2-W	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	–	W	1501-61B6-7301-200
RFTM-CO2-W LCD	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	–	W ■	1501-61B6-7321-200
RFTM-LQ-CO2-W			(switchable)			
RFTM-LQ-CO2-W	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	0...100 %	W	1501-61B8-7301-500
RFTM-LQ-CO2-W LCD	0...100 % RH	0...+50 °C	0...2000 / 5000 ppm	0...100 %	W ■	1501-61B8-7321-500
Outputs:	0-10V or 4...20mA (selectable via DIP switches, selected variant applies for all outputs) – <i>Standard</i> room sensor RTM-CO2-SD with fixed output 0-10V!					
Equipment:	W = changeover contact – <i>Standard</i> room sensor RTM-CO2-SD without changeover contact!					
Note:	This unit must not be used as safety-relevant device!					

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% 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

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S+S REGELTECHNIK

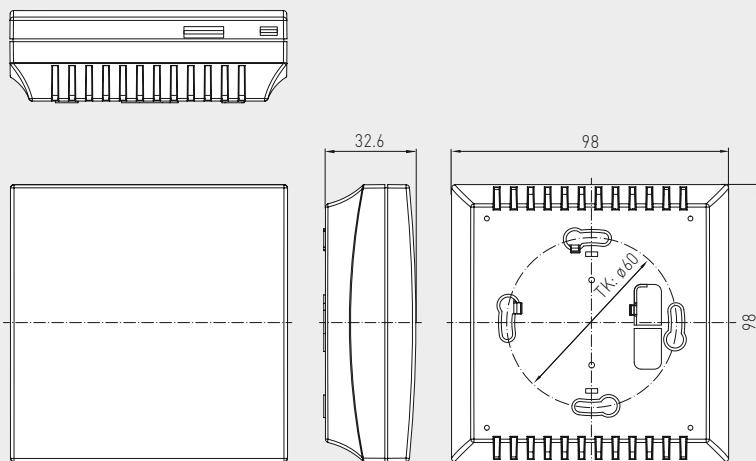
AERASGARD® RPS-SD AERASGARD® RFTM-PS-CO2-W

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



Dimensional drawing

RPS-SD
RFTM-PS-CO2-W



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



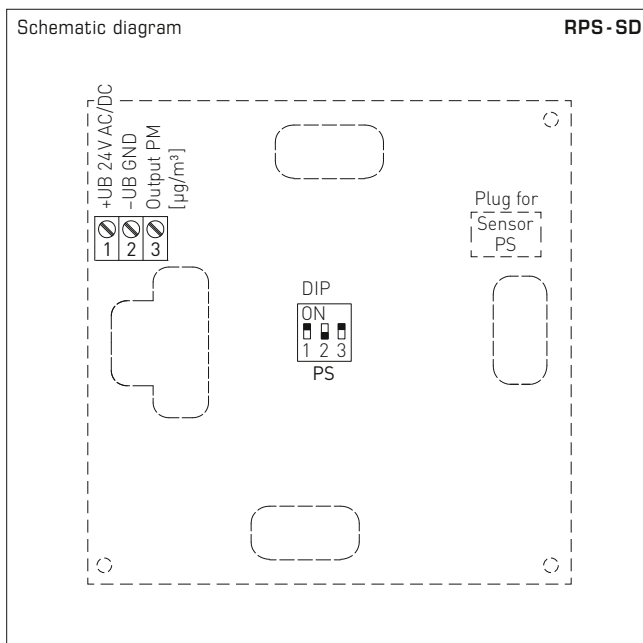
RFTM-PS-CO2-W
with display



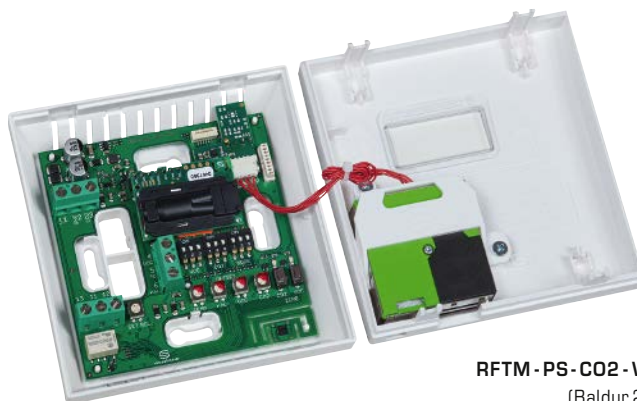
TECHNICAL DATA

(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 mm ² , 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



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	



590 S+S REGELTECHNIK



S+S REGELTECHNIK

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



Humidity table

MR: 0...100 % RH

% RH	U _A [V]	I _A [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 ...		

% RH	U _A [V]	I _A [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 [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), <i>Standard</i> RFTM-PS-W Multifunctional room sensor for humidity, temperature and fine dust (PM), <i>Premium</i> RFTM-PS-CO2-W Multifunctional room sensor for humidity, temperature, fine dust (PM) and CO2 content, <i>Deluxe</i>						
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% 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
RFTM-PS-W LCD	0...100% RH	0...+50 °C	(4x as above)	–	W ■	1501-2116-7321-000
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
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
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!					

**Room CO2 and temperature sensor or measuring transducer,
in-wall in the panel switch programme,
with active output**

The room sensor **AERASGARD® FSCO2 / FSTM-CO2** in the in-wall housing is used for measuring the CO2 content and temperature of the air. It converts the measured values into a standard signal of 0-10 V.

The CO2 content of the air is measured using an optical NDIR sensor (non-dispersive infra-red technology). A digital, long-term stable sensor is used for temperature measurement.

The in-wall sensor is mounted in high-quality panel switch programmes, ideally of the brands Gira, Berker, Merten, Jung, Siemens or Busch-Jaeger (using in-wall adapters) either individually or in combination with light switches, socket outlets, etc.

It is used in non-aggressive, dust-free environments, in refrigeration, air conditioning and clean room technology, and in interior rooms, such as living rooms, offices, hotels, etc.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	< 1.5 W / 24 V DC; < 2.9 VA / 24 V AC

CARBON DIOXIDE (CO2)

Sensor, CO2:	optical NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button) and automatic calibration (fixed)
Long-term stability:	< 2 % in 15 years
Measuring range, CO2:	0...2000 ppm
Output, CO2:	0-10 V
Accuracy CO2:	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
Gas exchange:	by diffusion
Warm up time:	approx. 1 hour
Response time:	< 2 minutes

TEMPERATURE

Sensor:	digital temperature sensor , low hysteresis, high long-term stability
Long-term stability:	± 1 % per year
Measuring range:	0...+50 °C
Accuracy, temperature:	typically ± 0.8 K at +25 °C
Output, temperature:	0-10 V

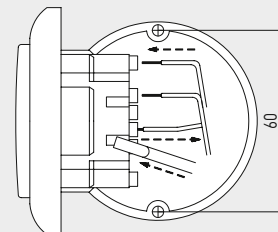
Mounting:	in-wall flush box Ø 55 mm
Electrical connection:	1.0-2.5 mm², via plug terminals
Ambient temperature:	storage -35...+85 °C; operation 0...+50 °C
Permitted humidity:	max. 90 % RH, non-precipitating air
Medium:	clean air and other non-aggressive, non-combustible gases
Protection class:	III (according to EN 60 730)
Protection type:	IP 20 (according to 60 529)
Standards:	CE-conformity according to EMC Directive 2014 / 30 / EU

SWITCH PROGRAMME

Manufacturer:	GIRA System 55 (other switch programmes, manufacturers, colours as well as prices available upon request)
Housing:	plastic, the standard colour is pure glossy white (similar to RAL 9010) (other colours are available upon request with colour variants depending on the respective light switch programme)

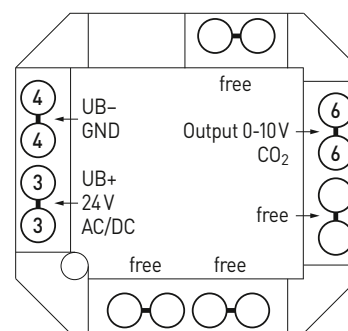
Mounting diagram

in-wall



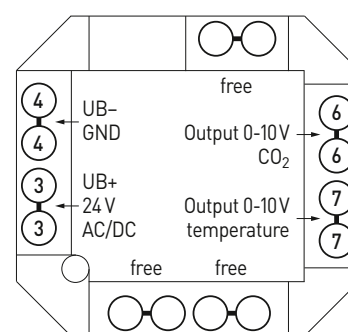
Connection diagram

FSCO2



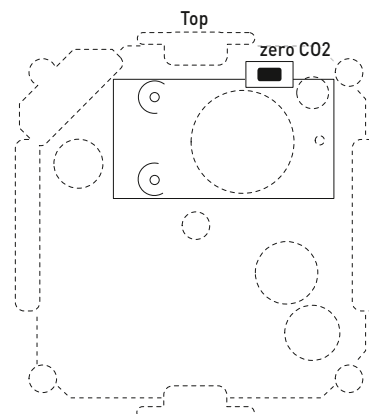
Connection diagram

FSTM-CO2



Schematic diagram

FSFTM-CO2





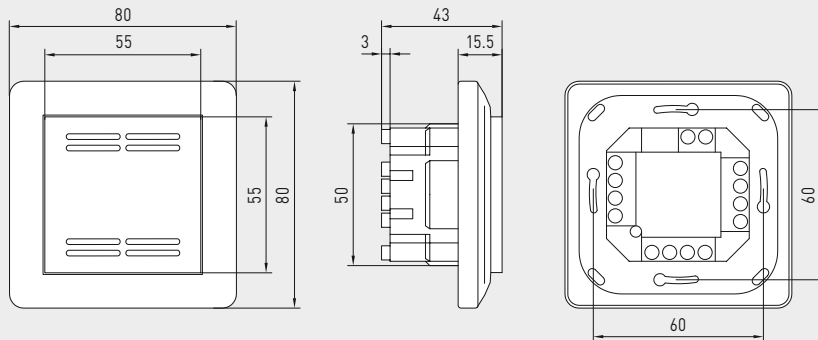
S+S REGELTECHNIK

AERASGARD® FSC02
AERASGARD® FSTM-C02

Room CO2 and temperature sensor or measuring transducer,
in-wall in the panel switch programme,
with active output



Dimensional drawing



FSC02
FSTM-C02

FSC02
FSTM-C02



CO2 content table
MR: 0...2000 ppm

ppm	U _A [V]
0	0.00
350	1.75
400	2.00
450	2.25
500	2.50
550	2.75
600	3.00
700	3.50
800	4.00
900	4.50
Continued to the right ...	

ppm	U _A [V]
1000	5.0
1100	5.5
1200	6.0
1300	6.5
1400	7.0
1500	7.5
1600	8.0
1700	8.5
1800	9.0
1900	9.5
2000	10.0

Temperature table
MR: 0...+50 °C

°C	U _A [V]
0	0.0
5	1.0
10	2.0
15	3.0
20	4.0
25	5.0
30	6.0
35	7.0
40	8.0
45	9.0
50	10.0

AERASGARD® FSC02

Room CO2 sensor or measuring transducer, in-wall

AERASGARD® FSTM-C02

Room temperature and CO2 sensor or measuring transducer, in-wall

Type / WG02	Measuring Range CO2	Temperature	Output CO2	Temperature	Item No.
FSC02					
FSC02-U	0...2000 ppm	–	0-10 V	–	1501-9120-1001-162
FSTM-C02					
FSTM-C02-U	0...2000 ppm	0...+50 °C	0-10 V	0-10 V	1501-9122-1001-162

**Room air-quality sensors (VOC) or measuring transducers,
in-wall in the panel switch programme,
with active output**

Maintenance-free air-quality sensor **AERASGARD® FSLQ** with active output, automatic calibration, in the in-wall housing, for determining the air quality (0...100 % VOC). The measuring transducer converts the measured variables into a standard signal of 0-10 V. The in-wall sensor is mounted in high-quality panel switch programmes, ideally of the brands Gira, Berker, Merten, Jung, Siemens or Busch-Jaeger (using in-wall adapters) either individually or in combination with light switches, socket outlets, etc.

The sensor is used in offices, hotels, convention centres, apartments, shops, etc. and is used for evaluating the indoor climate. This enables energy-saving room ventilation on an as-needed basis, thereby reducing operating costs and improving well-being.

The air quality is detected by a **VOC sensor** (mixed gas sensor for volatile organic substances). This determines the pollutant loading of the room air by contaminated gases such as cigarette smoke, body vapours, breathing air, solvent vapours, emissions, etc.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typically < 2.0 VA / 24 V AC; typically < 1.0 W / 24 V DC

AIR QUALITY (VOC)

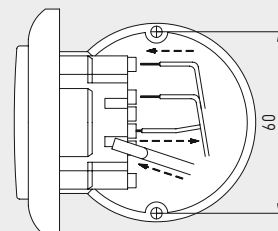
Sensor:	VOC sensor (metal oxide) with automatic calibration (VOC = volatile organic compounds) Detection of the gases is not selective
Measuring range:	0...100 % air quality (with reference to the calibration gas)
Accuracy:	typically ± 20 % final value (with reference to the calibration gas)
Service life:	> 60 months (under normal load conditions)
Warm-up time:	approx. 1 hour
Response time:	< 60 s
Output:	0 - 10 V (0 V = clean air, 10 V = polluted air) (low to elevated room air pollution load)
Mounting:	in-wall flush box Ø 55 mm
Electrical connection:	max. 1.5 mm², via push-in terminals
Ambient temperature:	storage -20...+50 °C; operation 0...+50 °C
Permitted humidity:	max. 95 % RH, non-condensing air
Medium:	clean air and non-aggressive, non-combustible gases
Protection class:	III (according to EN 60 730)
Protection type:	IP 20 (according to EN 60 529)
Standards:	CE-conformity according to EMC Directive 2014 / 30 / EU

SWITCH PROGRAMME

Manufacturer:	GIRA System 55 (other switch programmes, manufacturers, colours as well as prices available upon request)
Housing:	plastic, the standard colour is pure glossy white (similar to RAL 9010) (other colours are available upon request with colour variants depending on the respective light switch programme)

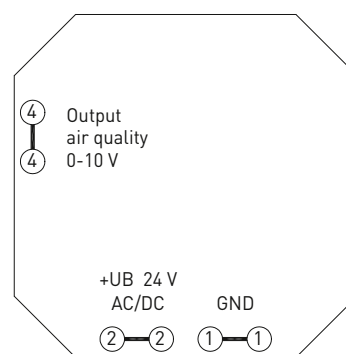
Mounting diagram
[mm]

In-wall



Schematic diagram

FSLQ-U





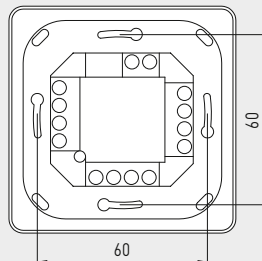
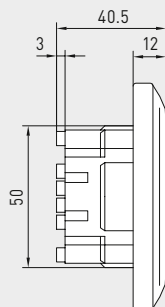
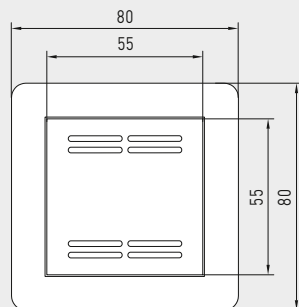
S+S REGELTECHNIK

AERASGARD® FSLQ

Room air-quality sensors (VOC) or measuring transducers,
in-wall in the panel switch programme,
with active output



Dimensional drawing
[mm]



FSLQ

FSLQ



Table VOC content
MR: 0...100 %

VOC %	U _A [V]
0	0,0
5	0,5
10	1,0
15	1,5
20	2,0
25	2,5
30	3,0
35	3,5
40	4,0
45	4,5
50	5,0
55	5,5
60	6,0
65	6,5
70	7,0
75	7,5
80	8,0
85	8,5
90	9,0
95	9,5
100	10,0

AERASGARD®
FSLQ

Room air quality sensor (VOC) or measuring transducer,
in-wall

Type / WG01	Measuring range VOC	Output VOC	Item No.
FSLQ			
FSLQ-U	0...100 %	0-10 V	1501-5120-1000-162
Note: This unit must not be used as a safety-relevant device!			



**On-wall CO₂ sensor or measuring transducer,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching output**

Patented quality product (AOS patent no. DE 10 2015 015 941 B4)

Maintenance-free on-wall sensor **AERASGARD® AC02-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, 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 0-10V.

Maintenance-free on-wall sensor **AERASGARD® AC02-AW** with active/switching output, automatic calibration (can be deactivated), in an impact-resistant plastic housing with quick-locking screws, optionally with/without display, for determining the CO₂ content of the air (0...2000 ppm/0...5000 ppm). The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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 photo-acoustic **NDIR sensor** (non-dispersive infra-red technology). The detection range is calibrated for standard applications such as monitoring residential rooms and conference rooms. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

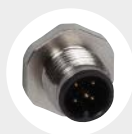
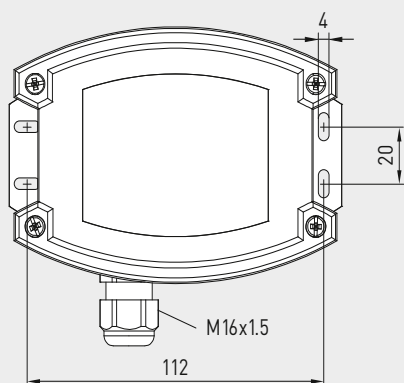
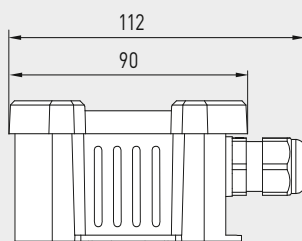
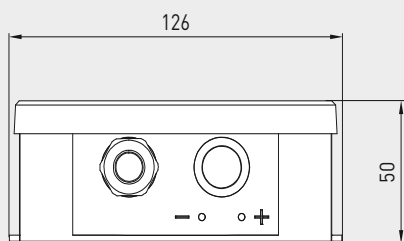
Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
Measurand:	CO ₂ [ppm]
Output:	AC02-SD 0-10 V (fixed) AC02-AW automatic 0-10 V / 4...20 mA (Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	AC02-SD without changeover contact AC02-AW potential-free changeover contact (24 V / 1 A), Switching point can be set via SET-Potentiometer, Setting range 10...95 % of set measuring range Hysteresis 1 % of set measuring range
Sensor:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), AC02-SD with automatic calibration (fixed) AC02-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy:	typically ± 50 ppm ± 5 % of measured value
Temperature dependence:	± 5 ppm per °C or ± 0.5 % of measured value per °C (whichever is higher)
Pressure dependence:	± 0.13 % per mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m/s (air)
Ambient temperature:	–10...+60 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Cable connection:	Cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Housing:	Plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Process connection:	by screws
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	with display (see AERASGARD® AFTM-LQ-CO2) for displaying the actual CO ₂ content
ACCESSORIES	see table

**NEW**

S+S REGELTECHNIK

AERASGARD® AC02-SD
AERASGARD® AC02-AWOn-wall CO₂ sensor or measuring transducer,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching outputDimensional drawing
[mm]

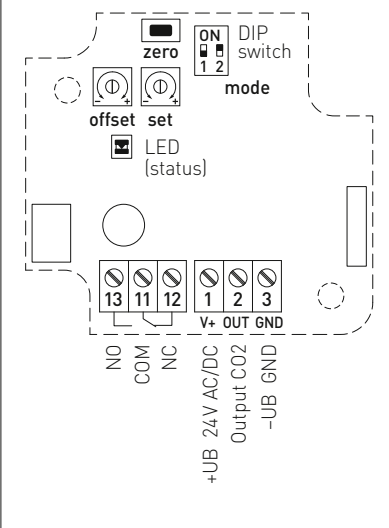
AC02 xx

**M12 connector**
(optional on request)**AC02-SD**
AC02-AW**CO₂**

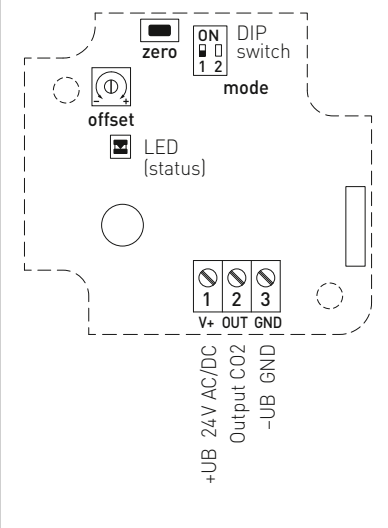
MR: 0...2000 ppm / 0...5000 ppm

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

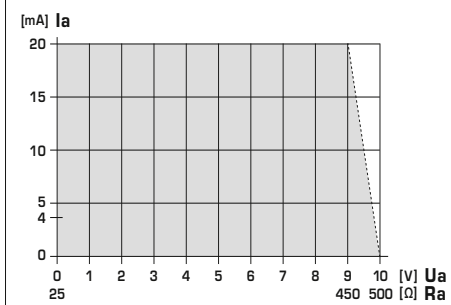
Schematic diagram **ACO2-AW**
(AOS)



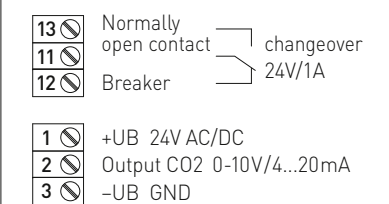
Schematic diagram **ACO2-SD**
(0-10 V)



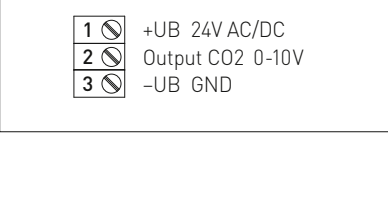
Dependence of output voltage
on output current **AOS-I**
4...20mA



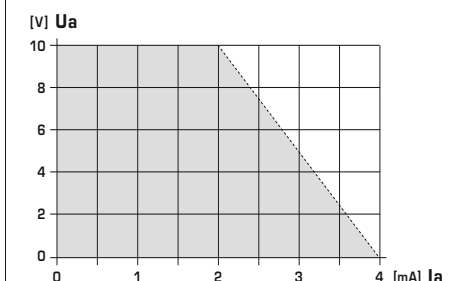
Connecting diagram **ACO2-AW**
(AOS)



Connecting diagram **ACO2-SD**
(0-10 V)



Dependence of output current
on output voltage **AOS-U**
0-10 V



DIP switch	ACO2-AW
CO₂	
CO₂ content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
CO₂ automatic calibration	DIP 2
activated (default)	ON
deactivated	OFF

DIP switch	ACO2-SD
CO₂	
CO₂ content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
DIP 2 is not assigned!	
For further technical information, see the operating instructions	

Automatic detection and switching
to standard signal 0...10V or 4...20 mA



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING



NEW

S+S REGELTECHNIK

AERASGARD® ACO2-SD
AERASGARD® ACO2-AW

On-wall CO₂ sensor or measuring transducer,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching output



ACO2-AW-LCD

see data sheet AFTM-LQ-CO2!

ACO2-SD
ACO2-AW



AERASGARD® ACO2-SD On-wall CO ₂ sensor, <i>Standard</i>				
AERASGARD® ACO2-AW On-wall CO ₂ sensor with changeover contact, <i>Premium</i>				
Type / WG02	Measuring range CO ₂	Output CO ₂	Equipment Display	Item No.
ACO2-SD	(switchable)	(fixed)		U variant
ACO2-SD-U	0...2000 / 5000 ppm	0-10 V	–	1501-7110-1001-600
ACO2-AW	(switchable)	(automatic)		AOS
ACO2-AW	0...2000 / 5000 ppm	0-10 V / 4...20 mA	W	1501-7110-E301-600
ACO2-AW LCD	0...2000 / 5000 ppm	0-10 V / 4...20 mA	W ■	see AFTM-LQ-CO2
Output / equipment:	0–10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type 'SD', 0–10 V is permanently set – no changeover contact! AOS units ACO2-AW with display see extra data sheet 'AFTM-LQ-CO2'			
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101			on request
Note:	This unit must not be used as safety-relevant device!			

ACCESSORIES		
WS-03	Weather and sun protection hood, 200 x 180 x 150 mm, stainless steel V2A (1.4301)	7100-0040-6000-000
For further information see last chapter!		

**Multifunctional on-wall sensors and measuring transducers,
 for humidity, temperature, CO2 content and air quality (VOC), calibratable,
 with active output (Automatic Output Switching) / switching output**

Patented quality product (AOS patent no. DE 10 2015 015 941 B4)

Maintenance-free on-wall sensor **AERASGARD® ATM-CO2-SD** with active output, automatic calibration, with plastic sinter filter (exchangeable), in an impact-resistant plastic housing with quick-locking screws, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm) and the temperature (-35...+80 °C / -31...+176 °F). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free on-wall sensor **AERASGARD® AFTM-LQ-CO2-AW** with active/switching output, automatic calibration, with plastic sinter filter (exchangeable), in an impact-resistant plastic housing with quick-locking screws, optionally with/without Display, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm), the air quality (0...100 % VOC), the temperature (-35...+80 °C / -31...+176 °F) as well as the relative air humidity (0...100 % RH). The display can be changed from SI [°C] to imperial [°F] units via DIP switch. The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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 a photo-acoustic **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 contaminant load 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:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
System of units:	SI (default) or imperial (can be changed via DIP switch)
Measurands:	CO2 [ppm], VOC [%], temperature [°C] [°F], relative humidity [% RH]
Outputs:	ATM-CO2-SD 0-10 V (fixed) Axx-CO2-AW automatic 0-10 V/4...20 mA (via Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	ATM-CO2-SD without changeover contact Axx-CO2-AW 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 measuring range

HUMIDITY

Sensors:	digital humidity sensor with integrated temperature sensor , low hysteresis, high long-term stability
Sensor protection:	Plastic sinter filter, Ø 16mm, l=35mm, exchangeable (optionally metal sinter filter, Ø 16mm, l=32mm)
Measuring range, humidity:	0...100 % RH
Operating range, humidity:	0...95 % RH (without dew formation)
Accuracy humidity:	typical ± 2.0 % (20...80 % RH) at +25 °C, otherwise ± 3.0 %

TEMPERATURE

Temp. measuring range:	-35...+80 °C / -31...+176 °F
Operating range, temp.:	-10...+60 °C / +14...+140 °F
Accuracy temperature:	typical ± 0.2 K / ± 0.5 °F at +25 °C / +77 °F

AIR QUALITY (VOC)

Sensor, VOC:	VOC sensor (metal oxide) (volatile organic compounds), with automatic air quality algorithm
Measuring range, VOC:	0...100% air quality, referred to calibrating gas, multi-range switching VOC sensitivity SLOW/NORMAL/FAST (selectable via DIP switches)
Accuracy, VOC:	typical ± 20 % 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, CO2:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button) ATM-CO2-SD with automatic calibration (fixed) Axx-CO2-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range, CO2:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy, CO2:	typical ± 50 ppm ± 5 % of measured value
Temp. dependence, CO2:	± 5 ppm per °C or ± 0.5% of the measured value per °C (whichever is higher)

Continued on next page!



S+S REGELTECHNIK

NEW

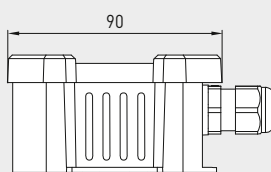
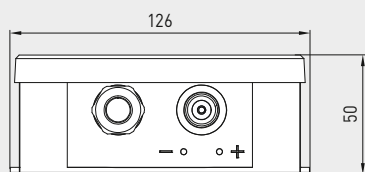
AERASGARD® ATM-CO2-SD AERASGARD® AFTM-(LQ)-CO2-AW / A(LQ)-CO2-AW

Multifunctional on-wall sensors and measuring transducers,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output



Dimensional drawing
[mm]

AFTM-LQ-CO2-AW



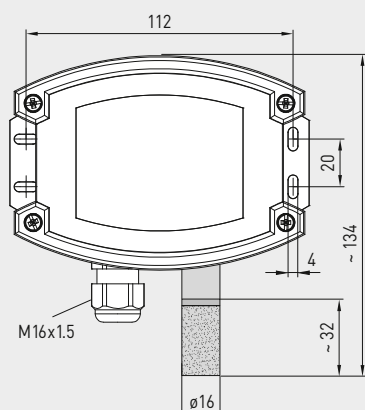
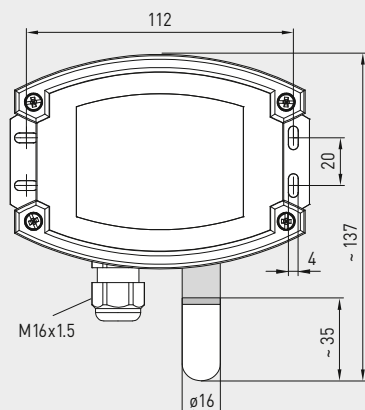
M12 connector
(optional on request)



SF-K
plastic sinter filter
(exchangeable)



SF-M
metal sinter filter
(optional)



AFTM-LQ-CO2-AW
with plastic sinter filter



AFTM-LQ-CO2-AW
with plastic sinter filter
and display

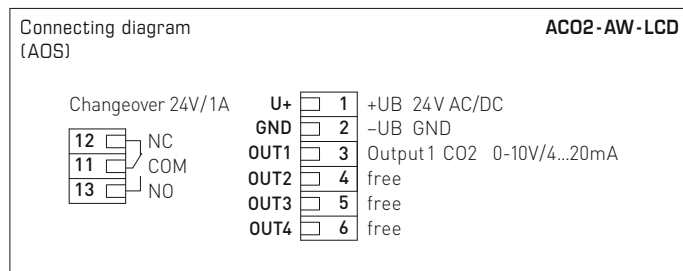
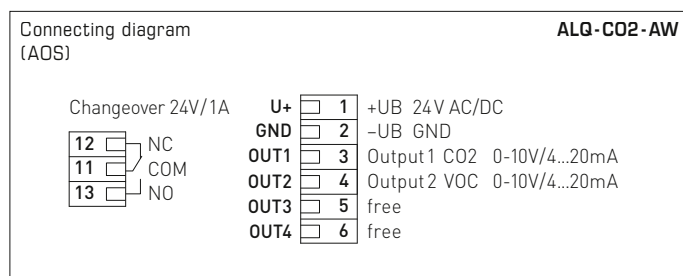
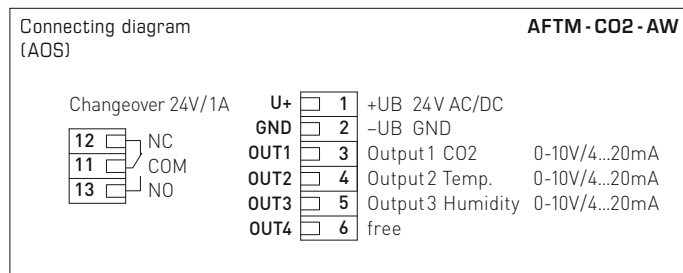
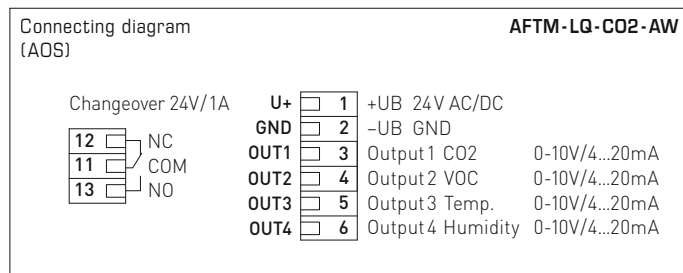
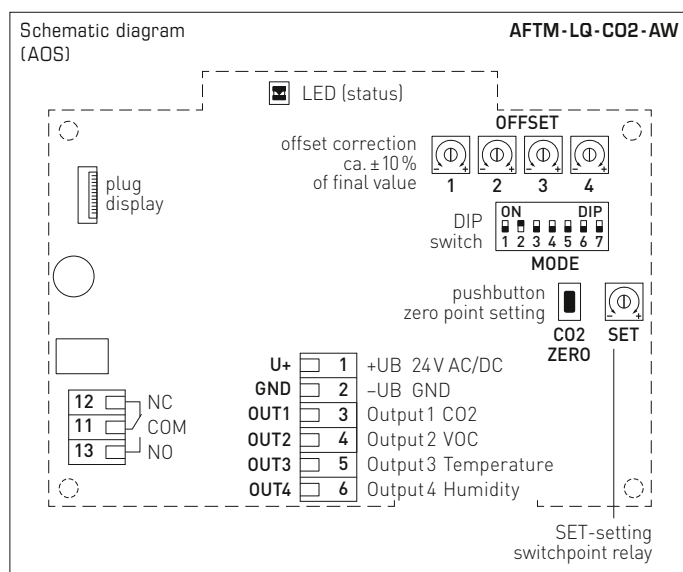


TECHNICAL DATA

(continued)

Pressure dependence:	± 0.13 % / mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m/s (air)
Ambient temperature:	-10...+60 °C / +14...+140 °F
Electrical connection:	0.2 - 1.5 mm², via push-in terminals
Cable connection:	Cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Protective tube:	stainless steel V2A (1.4301), Ø 16 mm, NL = 55 mm
Process connection:	by screws
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	three-line display with illumination , cutout approx. 70 x 40 mm (W x H), for displaying actual humidity, actual temperature, air quality and/or the actual CO2 content

Multifunctional on-wall sensors and measuring transducers,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output



DIP switches		AFTM-LQ-CO2-AW	
CO2			
CO2 content		DIP 1	
0...5000 ppm		ON	
0...2000 ppm (default)		OFF	
CO2 automatic calibration		DIP 2	
activated (default)		ON	
deactivated		OFF	
VOC			
VOC sensitivity		DIP 3	DIP 4
FAST		ON	ON
SLOW		ON	OFF
NORMAL (default)		OFF	OFF
Relay			
Relay assignment		DIP 5	DIP 6
Humidity:	10...95% RH	ON	ON
Temperature:	-23...+74 °C -31...+176 °F	OFF	ON
VOC:	10...95 %	ON	OFF
CO2 (default):	600...1900 ppm / 900...4700 ppm	OFF	OFF
Display			
System of units			DIP 7
Imperial:			ON
SI (default):			OFF
Temperature			
Value indicated in display depends on system of units set (DIP 7).			
			

AFTM-CO2-AW: DIP 3 / 4 not assigned.

ALQ-CO2-AW: DIP 7 not assigned.

AC02-AW-LCD: DIP 3 / 4 / 7 not assigned.

Note :

The offset potentiometers are assigned to the corresponding output of the measurand, depending on the respective unit type.

Output 1 → Offset 1

Output 2 → Offset 2

Output 3 → Offset 3

Output 4 → Offset 4

Output free → Offset not assigned.

For further technical information,
see the operating instructions

Automatic detection and switching
to standard signal 0...10V or 4...20mA



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

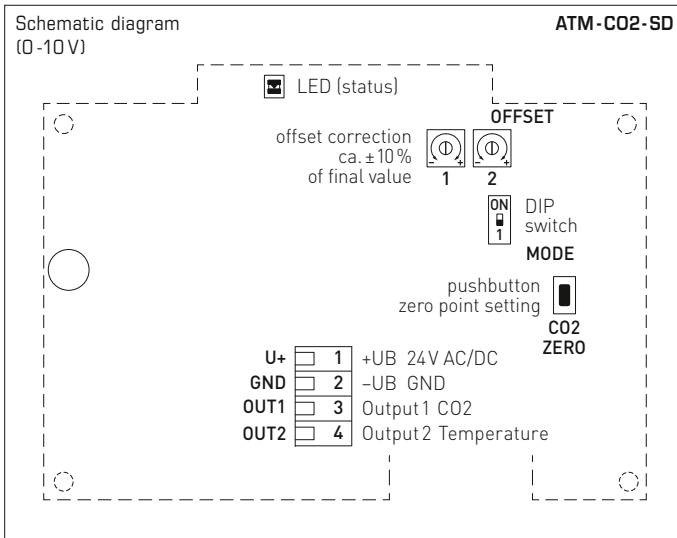


S+S REGELTECHNIK

NEW

AERASGARD® ATM-CO2-SD AERASGARD® AFTM-(LQ)-CO2-AW / A(LQ)-CO2-AW

Multifunctional on-wall sensors and measuring transducers,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output



DIP switches ATM-CO2-SD	
CO2	
CO2 content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF

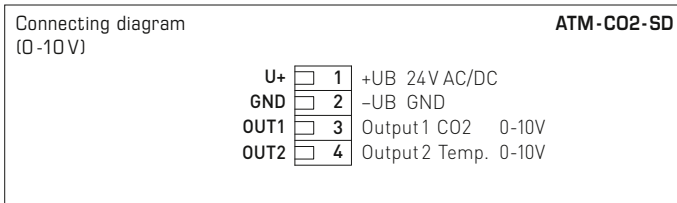
Note:

The offset potentiometers are assigned to the corresponding output of the measurand, depending on the respective unit type.

Output 1 → Offset 1 (CO2)

Output 2 → Offset 2 (temperature)

For further technical information, see the operating instructions



Temperature

MR: -35...+80 °C / -31...+176 °F

°C	U _A [V]	I _A [mA]	°F
-35	0.0	4.0	-31
-30	0.4	4.7	-22
-25	0.9	5.4	-13
-20	1.3	6.1	-4
-15	1.7	6.8	+5
-10	2.2	7.5	+14
-5	2.6	8.2	+23
0	3.0	8.9	+32
+5	3.5	9.6	+41
+10	3.9	10.3	+50
+15	4.3	11.0	+59
+20	4.8	11.7	+68
+25	5.2	12.3	+77
+30	5.7	13.0	+86
+35	6.1	13.7	+95
+40	6.5	14.4	+104
+45	7.0	15.1	+113
+50	7.4	15.8	+122
+55	7.8	16.5	+131
+60	8.3	17.2	+140
+65	8.7	17.9	+149
+70	9.1	18.6	+158
+75	9.6	19.3	+167
+80	10.0	20.0	+176

Humidity

MR: 0...100 % RH

% 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

CO2

MR: 0...2000 ppm / 0...5000 ppm

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

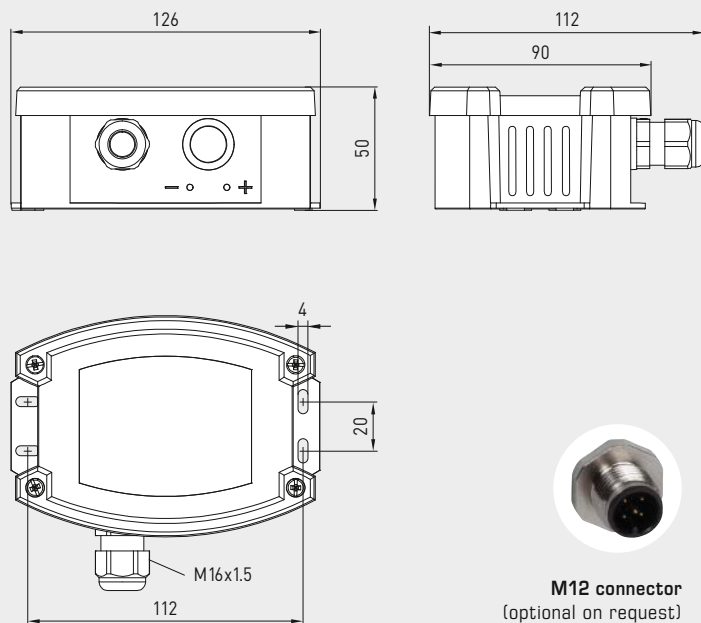
MR: 0...100 % VOC

% 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

Multifunctional on-wall sensors and measuring transducers,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output

Dimensional drawing
[mm]

ALQ-CO2-AW
AC02-AW-LCD

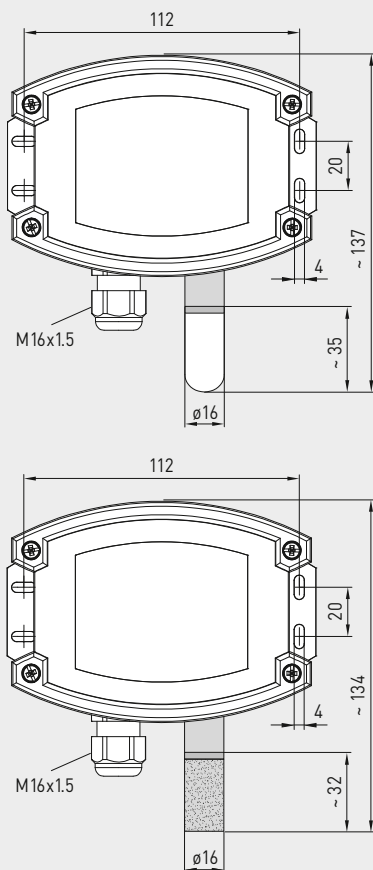


ALQ-CO2-AW
AC02-AW-LCD



Dimensional drawing
[mm]

AFTM-LQ-CO2-AW
AFTM-CO2-AW
ATM-CO2-SD



AFTM-LQ-CO2-AW
AFTM-CO2-AW
ATM-CO2-SD
with metal sinter filter
(optional)



SF-M
metal sinter filter
(optional)





NEW

S+S REGELTECHNIK

AERASGARD® ATM-CO2-SD AERASGARD® AFTM-(LQ)-CO2-AW / A(LQ)-CO2-AW

Multifunctional on-wall sensors and measuring transducers,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output

WS-03

Weather and sun protection hood
(optional)


AFTM-LQ-CO2-AW
AFTM-CO2-AW
ATM-CO2-SD

with plastic sinter filter
(standard)



AERASGARD® ATM-CO2-SD	On-wall temperature and CO2 sensor, <i>Standard</i>
AERASGARD® ACO2-AW	On-wall CO2 sensor, <i>Premium</i>
AERASGARD® ALQ-CO2-AW	On-wall air quality (VOC) and CO2 sensor, <i>Premium</i>
AERASGARD® AFTM-CO2-AW	Multifunctional on-wall sensor for humidity, temperature and CO2 content, <i>Deluxe</i>
AERASGARD® AFTM-LQ-CO2-AW	Multifunctional on-wall sensor for humidity, temperature, CO2 content and air quality (VOC), <i>Deluxe</i>

Type / WG02	Measuring ranges				Equipment	Item No.
	Humidity	Temperature	CO2	VOC	Display	
ATM-CO2-SD			(switchable)			U variant
ATM-CO2-SD-U	–	–35...+80 °C/ –31...+176 °F	0...2000 / 5000 ppm	–	–	1501-7112-1001-600
ACO2-AW			(switchable)			AOS
ACO2-AW (without display)	–	–	0...2000 / 5000 ppm	–	W	see ACO2-AW / ACO2-SD
ACO2-AW LCD	–	–	0...2000 / 5000 ppm	–	W ■	1501-7110-E371-600
ALQ-CO2-AW			(switchable)			AOS
ALQ-CO2-AW	–	–	0...2000 / 5000 ppm	0...100 %	W	1501-7111-E301-600
ALQ-CO2-AW LCD	–	–	0...2000 / 5000 ppm	0...100 %	W ■	1501-7111-E371-600
AFTM-CO2-AW			(switchable)			AOS
AFTM-CO2-AW	0...100 % RH	–35...+80 °C	0...2000 / 5000 ppm	–	W	1501-7116-E301-600
AFTM-CO2-AW LCD	0...100 % RH	–35...+80 °C/ –31...+176 °F	0...2000 / 5000 ppm	–	W ■	1501-7116-E371-600
AFTM-LQ-CO2-AW			(switchable)			AOS
AFTM-LQ-CO2-AW	0...100 % RH	–35...+80 °C	0...2000 / 5000 ppm	0...100 %	W	1501-7118-E301-600
AFTM-LQ-CO2-AW LCD	0...100 % RH	–35...+80 °C/ –31...+176 °F	0...2000 / 5000 ppm	0...100 %	W ■	1501-7118-E371-600
Outputs / equipment:	0 – 10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type ATM-CO2-SD , 0-10 V is fixed – no changeover contact!					
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 on request					
Note:	This unit must not be used as safety-relevant device!					
ACCESSORIES						
SF-K	Plastic sinter filter , Ø 16 mm, L = 35 mm, exchangeable					7000-0050-2310-000
SF-M	Metal sinter filter , Ø 16 mm, L = 32 mm, exchangeable stainless steel V4A (1.4404)					7000-0050-2200-100
WS-03	Weather and sun protection hood , 200 x 180 x 150 mm, stainless steel V2A (1.4301)					7100-0040-6000-000

**Fine dust sensor / particulate sensor,
on-wall sensor and measuring transducer, with multi-range switching
and active output**

Maintenance-free on-wall sensor **AERASGARD® APS-SD** with active output, in an impact-resistant plastic housing with quick-locking screws, for measuring the fine-dust content (0...500 µg/m³). The measuring transducer converts the measured values into a standard signal of 0-10 V.

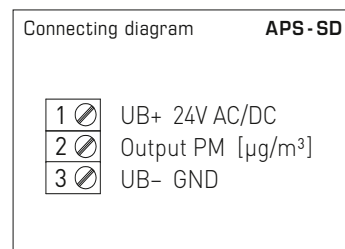
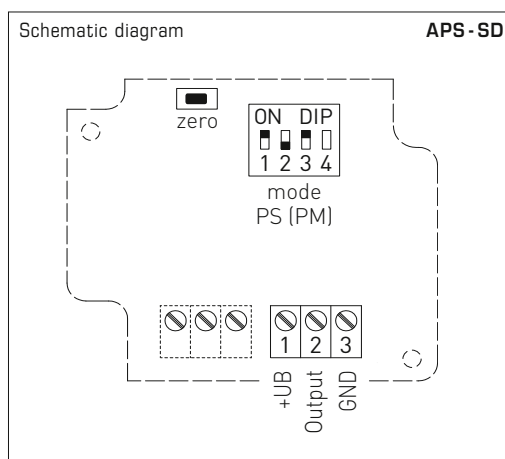
The sensor is used in offices, hotels, convention centres, apartments, shops, etc. and is used for evaluation of the indoor climate. This enables energy-saving, demand-based room ventilation, thereby reducing operating costs and improving well-being. One sensor for every 30 m² of room area is recommended.

An optical **fine dust sensor** precisely detects **particulate (PM)** of the size category 0.3 to 10 micrometres. The sensor is factory-calibrated.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typical < 1.5 W / 24 V DC; < 2.9 VA / 24 V AC
Output:	0-10 V
FINE DUST (PM)	
Sensor (PM):	optical particulate sensor (PM = particulate matter) , fine-dust sensor with laser- and soiling-resistant technology
Measuring range:	multi-range switching (selectable via DIP switches) 0...50, 0...100, 0...300 or 0...500 µg/m³
Particle size:	PM 2.5 (0.3...2.5 µm); PM 10 (0.3...10 µm)
Accuracy:	typical ± 10 µg/m³ (± 10% of the measured value) for PM 2.5 typical ± 25 µg/m³ (± 25% of the measured value) for PM 10
Long-term stability:	± 1.25 µg/m³ (± 1.25 % of measured value/year)
Service life:	> 10 years
Response time:	< 2 minutes
Warm-up time:	approx. 1 hour
Ambient temperature:	0...+50 °C
Permitted humidity:	0...95 % RH (non-precipitating air)
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted/Phillips head combination) colour traffic white (similar to RAL 9016)
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	cable gland plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14–1.5 mm², via screw terminals
Process connection:	via screws
Protection class:	III (according to EN 60 730)
Safety class:	IP 30 (according to EN 60 529)
Standards:	CE-conformity according to EMC Directive 2014 / 30 / EU

DIP switch		APS - 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	
Note: DIP 4 is not assigned !			





S+S REGELTECHNIK

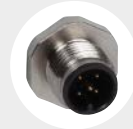
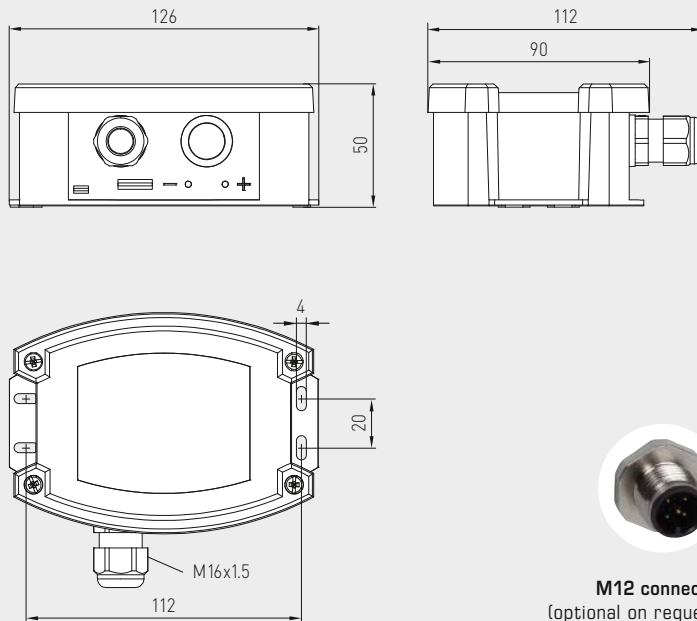
AERASGARD® APS-SD

Fine dust sensor / particulate sensor,
on-wall sensor and measuring transducer, with multi-range switching
and active output



Dimensional drawing

APS-SD



M12 connector
(optional on request)

APS-SD



AERASGARD® APS-SD				
On-wall fine dust sensor / fine dust sensor / particulate sensor (PM), Standard				
Type / WG02	Measuring Range	Particle size	Output	Item No.
APS-SD	(switchable)	(switchable)		
APS-SD-U	0... 50 µg/m³ 0... 100 µg/m³ 0... 300 µg/m³ 0... 500 µg/m³	PM 2.5 PM 10	0-10 V	1501-7130-1001-000
Optional:		Cable connection with M12 connector according to DIN EN 61076-2-101 (on request)		
Note:		This unit must not be used as safety-relevant device!		

Duct air quality sensor (VOC) or measuring transducer, incl. mounting flange, self-calibrating, with multi-range switching and active (Automatic Output Switching) / switching output

Patented quality product (patent no. DE 10 2014 010 719.1 (FLOW), DE 10 2015 015 941 B4 (AOS))

Maintenance-free duct sensor **AERASGARD® KLQ-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, for determining the air quality (0...100 % VOC). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free duct sensor **AERASGARD® KLQ-AW** with active/switching output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, for determining the air quality (0...100 % VOC). The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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 air quality is detected by a **VOC sensor** (mixed gas sensor for volatile organic substances). This sensor determines the contaminant load 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.

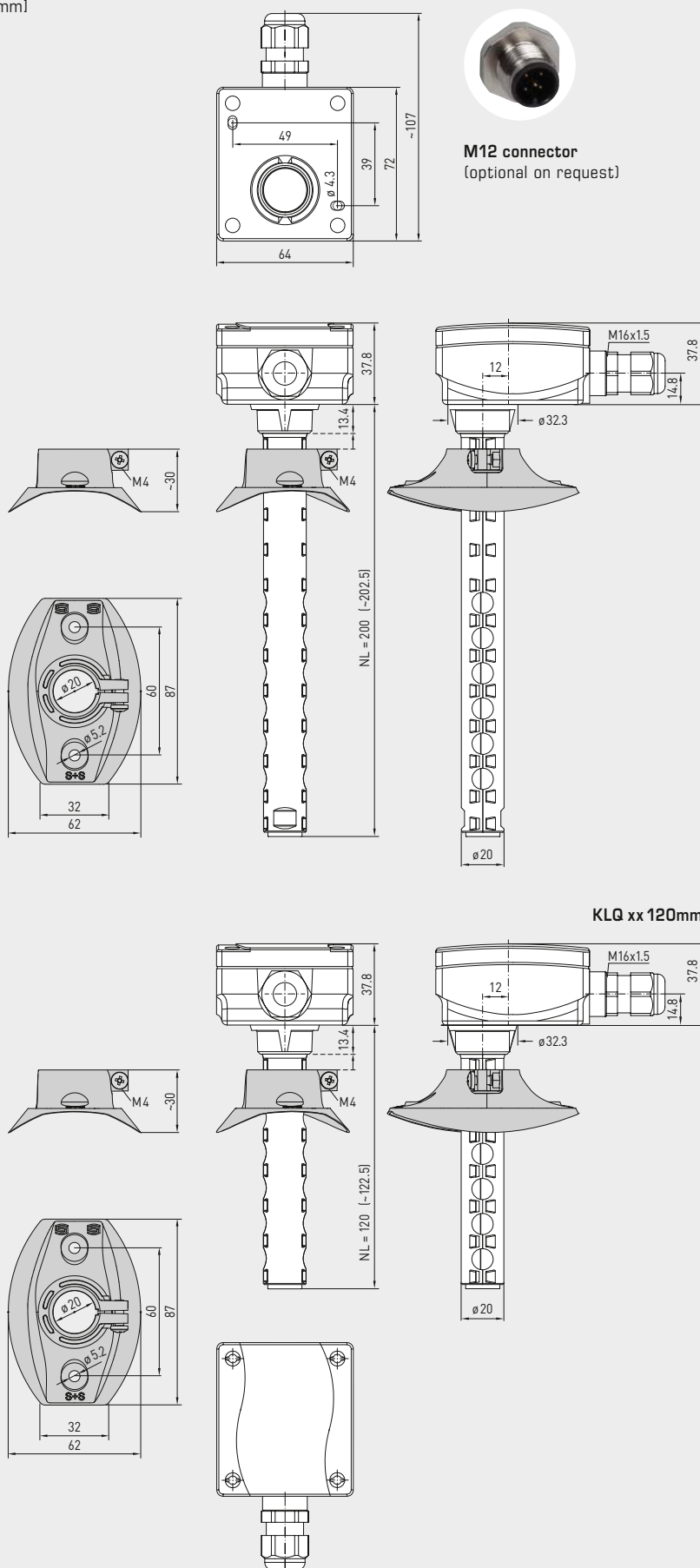
TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
Measurand:	VOC [%]
Output:	KLQ-SD 0-10 V (fixed) KLQ-AW automatic 0-10 V / 4...20 mA (Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	KLQ-SD without changeover contact KLQ-AW potential-free changeover contact (24 V / 1 A), Switching point can be set via SET-Potentiometer, Setting range 10...95 % of set measuring range Hysteresis 1 % of set measuring range
Sensor:	VOC sensor (metal oxide) (volatile organic compounds), with automatic air quality algorithm
Measuring range:	0...100 % air quality, referred to calibrating gas, multi-range switching VOC sensitivity SLOW / NORMAL / FAST (selectable via DIP switches)
Genauigkeit:	typical ± 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
Pressure dependence:	± 0.13 % per mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m / s (air)
Ambient temperature:	–10...+60 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Cable connection:	Cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Housing:	Plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37,8 mm (Tyr 1 without display)
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 200 mm / 120 mm (shortened), v _{max} = 30 m/s (air)
Process connection:	via flange made of plastic (included in scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state (permeable PLEUROFORM: IP 30)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU

Duct air quality sensor (VOC) or measuring transducer, incl. mounting flange, self-calibrating, with multi-range switching and active (Automatic Output Switching) / switching output

Dimensional drawing
[mm]

KLQ xx



KLQ-SD
KLQ-AW



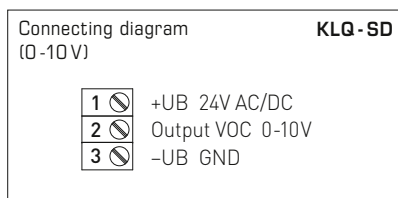
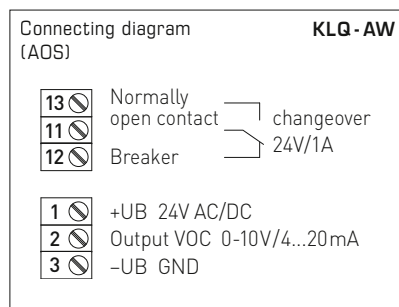
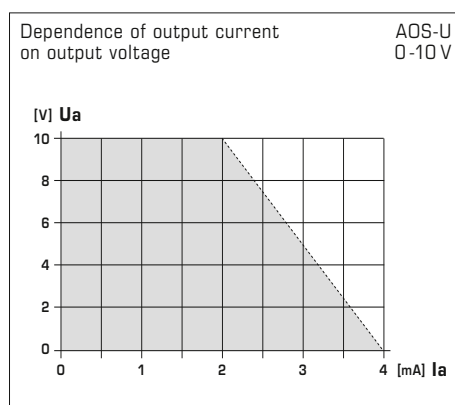
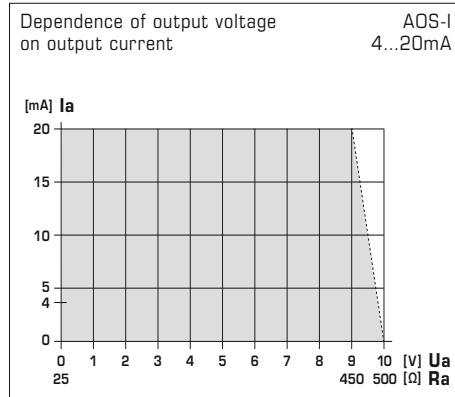
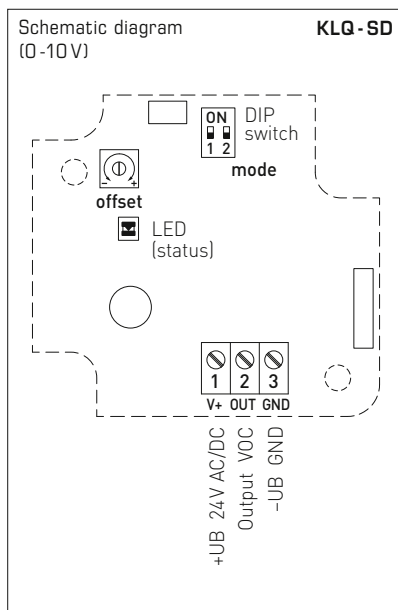
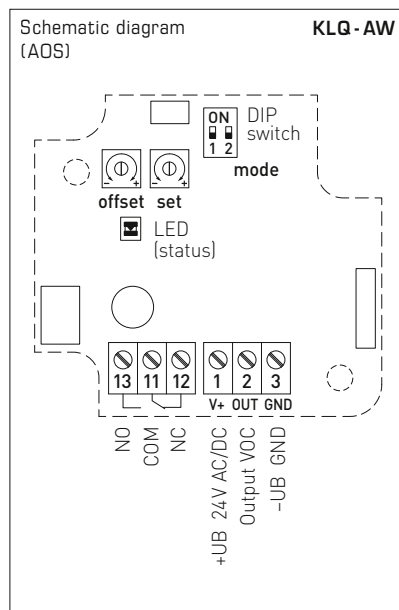
KLQ-SD 120mm
KLQ-AW 120mm



MFT-20-K

Mounting flange,
plastic





For further technical information,
see the operating instructions

DIP switch KLQ-AW / KLQ-SD		
VOC		
VOC sensitivity	DIP 1	DIP 2
FAST	ON	ON
SLOW	ON	OFF
NORMAL (default)	OFF	OFF

Automatic detection and switching
to standard signal 0...10V or 4...20 mA

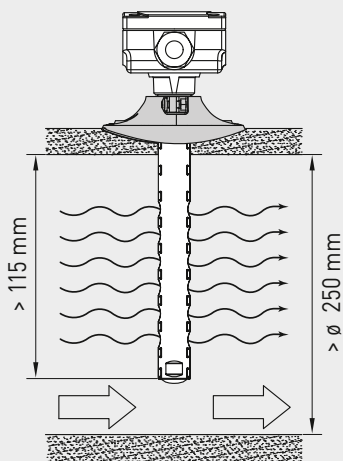
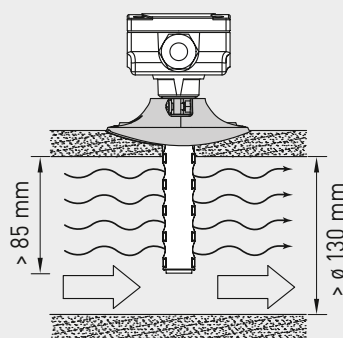
AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

**NEW**

S+S REGELTECHNIK

AERASGARD® KLQ-SD
AERASGARD® KLQ-AW

Duct air quality sensor (VOC) or measuring transducer, incl. mounting flange,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching output

**PATENTED**Mounting diagram
(NL 200 mm)**PATENTED**Mounting diagram
(NL 120 mm)

AERASGARD® KLQ-SD Duct air quality sensor, *Standard*
AERASGARD® KLQ-AW Duct air quality sensor with changeover contact, *Premium*

Type / WG02	Measuring ranges VOC	Output VOC	Equipment (NL)	Item No.
KLQ-SD		(fixed)		U variant
KLQ-SD-U 120mm	0...100 %	0-10 V	120 mm	– 1501-3170-1001-601
KLQ-SD-U	0...100 %	0-10 V	200 mm	– 1501-3170-1001-600
KLQ-AW		(automatic)		AOS
KLQ-AW 120MM	0...100 %	0-10 V / 4...20 mA	120 mm	W 1501-3150-E301-601
KLQ-AW	0...100 %	0-10 V / 4...20 mA	200 mm	W 1501-3150-E301-600
Output / equipment:	0-10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type 'SD', 0-10 V is permanently set – no changeover contact!			
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101			on request
Note:	This unit must not be used as safety-relevant device!			

Duct CO₂ sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active (Automatic Output Switching) / switching output

Patented quality product (patent no. DE 10 2014 010 719.1 (FLOW), DE 10 2015 015 941 B4 (AOS))

Maintenance-free duct sensor **AERASGARD® KC02-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, 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 0-10V.

Maintenance-free duct sensor **AERASGARD® KC02-AW** with active/switching output, automatic calibration (can be deactivated), in an impact-resistant plastic housing with quick-locking screws, optionally with/without display, for determining the CO₂ content of the air (0...2000 ppm/0...5000 ppm). The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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 photo-acoustic **NDIR sensor** (non-dispersive infra-red technology). The detection range is calibrated for standard applications such as monitoring residential rooms and conference rooms. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Power consumption:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
Measurand:	CO ₂ [ppm]
Output:	KC02-SD 0-10 V (fixed) KC02-AW automatic 0-10 V / 4...20 mA (Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	KC02-SD without changeover contact KC02-AW potential-free changeover contact (24 V / 1 A), Switching point can be set via SET-Potentiometer, Setting range 10...95 % of set measuring range Hysteresis 1 % of set measuring range
Sensor:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button), KC02-SD with automatic calibration (fixed) KC02-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy:	typically ± 50 ppm ± 5 % of measured value
Temperature dependence:	± 5 ppm per °C or ± 0.5 % of measured value per °C (whichever is higher)
Pressure dependence:	± 0.13 % per mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m / s (air)
Ambient temperature:	-10...+60 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Cable connection:	Cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Housing:	Plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37,8 mm (Tyr 1 without display) 72 x 64 x 43,3 mm (Tyr 1 with display)
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 200 mm / 120 mm (shortened), v _{max} = 30 m/s (air)
Process connection:	via flange made of plastic (included in scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state (permeable PLEUROFORM: IP 30)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	Display with illumination , two line, cutout approx. 36 x 15 mm (W x H), for displaying the Actual CO₂ content and switching point

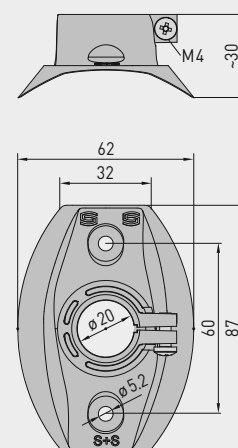
KC02-SD 120mm
KC02-AW 120mm
without display



KC02-AW 120mm
with display



Dimensional drawing [mm] **MFT-20-K**





NEW

S+S REGELTECHNIK

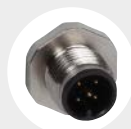
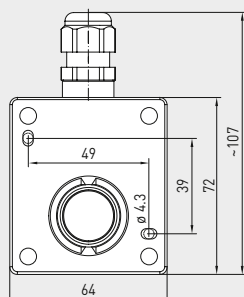
AERASGARD® KC02-SD
AERASGARD® KC02-AW

Duct CO₂ sensors and measuring transducers, incl. mounting flange, self-calibrating, with multi-range switching and active (Automatic Output Switching) / switching output



Dimensional drawing
[mm]

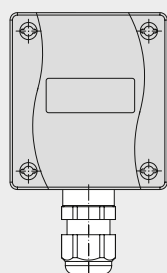
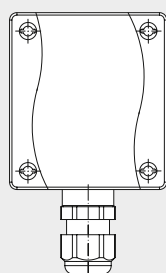
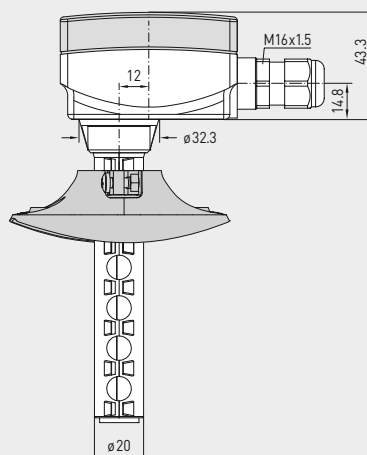
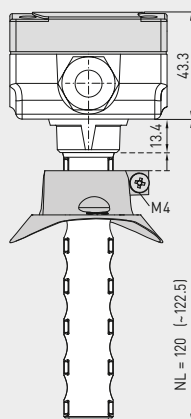
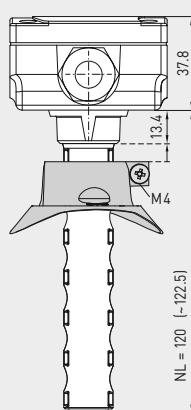
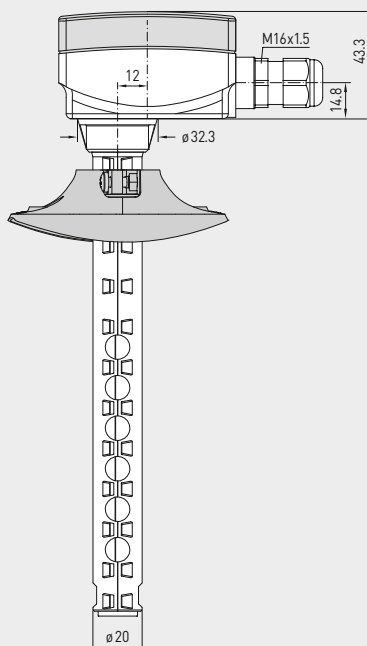
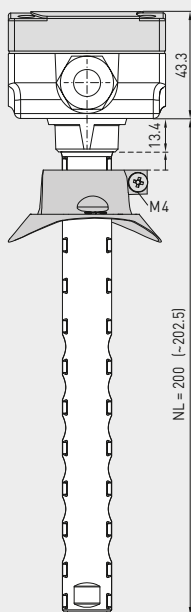
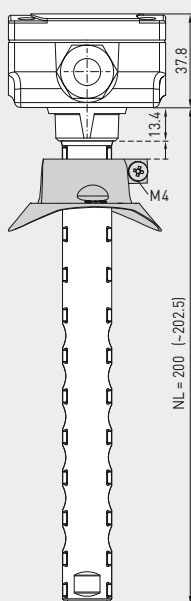
KC02 xx



M12 connector
(optional on request)

without display

with display



KC02 xx 120mm

KC02-SD
KC02-AW
without display



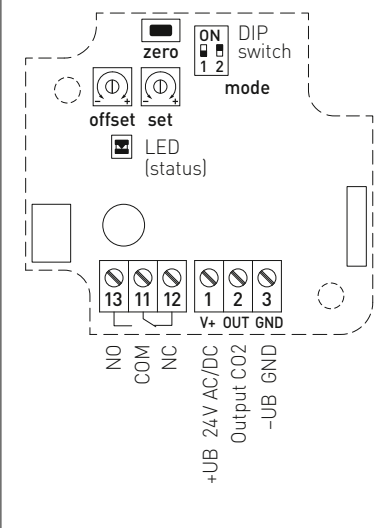
KC02-AW LCD
with display



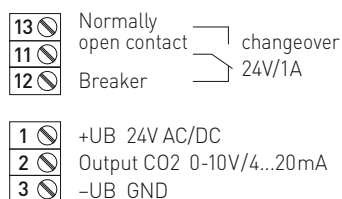
MFT-20-K
Mounting flange,
plastic



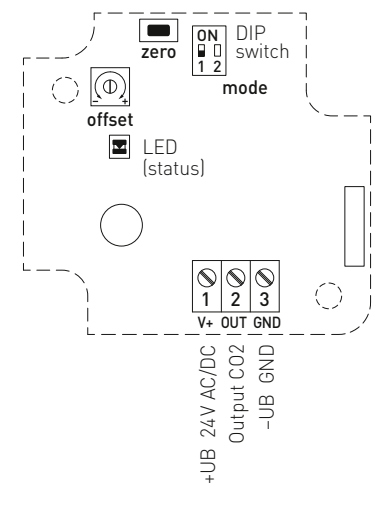
Schematic diagram **KC02-AW**
(AOS)



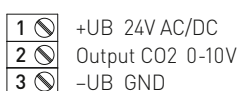
Connecting diagram **KC02-AW**
(AOS)



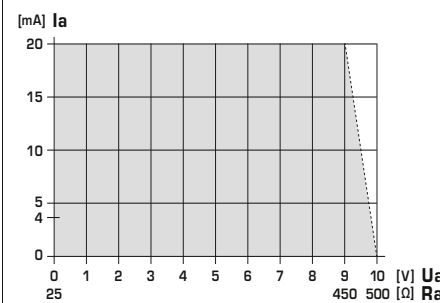
Schematic diagram **KC02-SD**
(0-10 V)



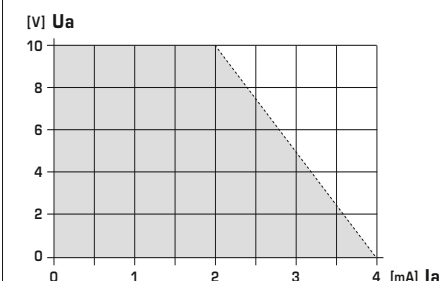
Connecting diagram **KC02-SD**
(0-10 V)



Dependence of output voltage
on output current **AOS-I**
4...20mA



Dependence of output current
on output voltage **AOS-U**
0-10 V



DIP switch KC02-AW	
CO ₂	
CO ₂ content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
CO ₂ automatic calibration	DIP 2
activated (default)	ON
deactivated	OFF

DIP switch KC02-SD	
CO ₂	
CO ₂ content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF
DIP 2 is not assigned!	
For further technical information, see the operating instructions	

Automatic detection and switching
to standard signal 0...10V or 4...20 mA

AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

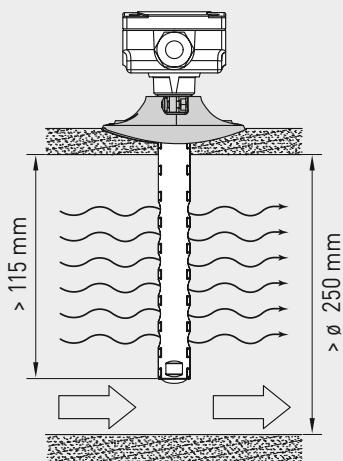


NEW

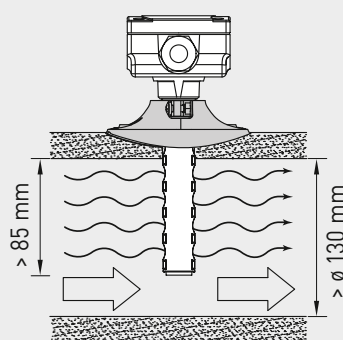
S+S REGELTECHNIK

AERASGARD® **KCO2-SD**
AERASGARD® **KCO2-AW**Duct CO₂ sensors and measuring transducers, incl. mounting flange,
self-calibrating, with multi-range switching
and active (Automatic Output Switching) / switching output

PATENTED

Mounting diagram
(NL 200 mm)

PATENTED

Mounting diagram
(NL 120 mm)AERASGARD® **KCO2-SD** Duct CO₂ sensors, *Standard*AERASGARD® **KCO2-AW** Duct CO₂ sensors with changeover contact, *Premium*

Type / WG02	Measuring ranges CO ₂	Output CO ₂	Equipment (NL) Display	Item No.
KCO2-SD	(switchable)	(fixed)		U variant
KCO2-SD-U 120MM	0...2000 / 5000 ppm	0-10 V	120 mm	– 1501-3160-1001-601
KCO2-SD-U	0...2000 / 5000 ppm	0-10 V	200 mm	– 1501-3160-1001-600
KCO2-AW	(switchable)	(automatic)		AOS
KCO2-AW 120mm	0...2000 / 5000 ppm	0-10 V / 4...20 mA	120 mm	W 1501-3140-E301-601
KCO2-AW LCD 120mm	0...2000 / 5000 ppm	0-10 V / 4...20 mA	120 mm	W ■ 1501-3140-E321-601
KCO2-AW	0...2000 / 5000 ppm	0-10 V / 4...20 mA	200 mm	W 1501-3140-E301-600
KCO2-AW LCD	0...2000 / 5000 ppm	0-10 V / 4...20 mA	200 mm	W ■ 1501-3140-E321-600
Output / equipment:	0–10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type 'SD', 0–10 V is permanently set – no changeover contact!			
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101			on request
Note:	This unit must not be used as safety-relevant device!			

Multifunctional duct sensors and measuring transducers, incl. mounting flange, for humidity, temperature, CO2 content and air quality (VOC), calibratable, with active output (Automatic Output Switching)/switching output

Patented quality product (patent no. DE 10 2014 010 719.1 (FLOW), DE 10 2015 015 941 B4 (AOS))

Maintenance-free duct sensor **AERASGARD® KTM-CO2-SD** with active output, automatic calibration, incl. mounting flange, with plastic sinter filter (exchangeable), in an impact-resistant plastic housing with quick-locking screws, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm) and the temperature (-35...+80 °C / -31...+176 °F). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free duct sensor **AERASGARD® KFTM-LQ-CO2-AW** with active / switching output, automatic calibration, incl. mounting flange, with plastic sinter filter (exchangeable), in an impact-resistant plastic housing with quick-locking screws, optionally with/ without Display, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm), the air quality (0...100 % VOC), the temperature (-35...+80 °C / -31...+176 °F) as well as the relative humidity (0...100 % RH). The display can be changed from SI [°C] to imperial [°F] units via DIP switch. The measuring transducer automatically detects the required output type (**Automatic Output Switching**) and converts the measurands into a standard signal of 0-10 V or 4...20 mA.

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 a photo-acoustic **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 contaminant load 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:	typical < 4.8 W / 24 V DC; < 6.8 VA / 24 V AC; peak current 200 mA
System of units:	SI (default) or imperial (can be changed via DIP switch)
Measurands:	CO2 (ppm), VOC (%), temperature [°C] [°F], relative humidity [% RH]
Outputs:	KTM-CO2-SD 0-10 VV (fixed) Kxx-CO2-AW automatic 0-10 V / 4...20 mA (Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output), >15k Ω load at AOS-U / 25...450 Ω working resistance at AOS-I, with Offset potentiometer (± 10 % of the measuring range)
Relay output:	KTM-CO2-SD without changeover contact Kxx-CO2-AW 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 measuring range

HUMIDITY

Sensors:	digital humidity sensor with integrated temperature sensor , low hysteresis, high long-term stability
Sensor protection:	plastic sinter filter, Ø 16mm, l=35mm, exchangeable (optionally metal sinter filter, Ø 16mm, l=32mm)
Measuring range, humidity:	0...100 % RH
Operating range, humidity:	0...95 % RH (without dew formation)
Accuracy humidity:	typical ±2.0 % (20...80 % RH) at +25 °C, otherwise ±3.0 %

TEMPERATURE

Temp. measuring range:	-35...+80 °C / -31...+176 °F
Operating range, temp.:	-10...+60 °C / +14...+140 °F
Accuracy temperature:	typical ±0.2 K / ±0.5 °F at +25 °C / +77 °F

AIR QUALITY (VOC)

Sensor, VOC:	VOC sensor (metal oxide) (volatile organic compounds), with automatic air quality algorithm
Measuring range, VOC:	0...100 % air quality, referred to calibrating gas, multi-range switching VOC sensitivity SLOW/NORMAL/FAST (selectable via DIP switches)
Accuracy, VOC:	typical ±20 % 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, CO2:	photo-acoustic NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero button) KTM-CO2-SD with automatic calibration (fixed) Kxx-CO2-AW with automatic calibration (can be deactivated via DIP switches)
Measuring range, CO2:	0...2000 ppm or 0...5000 ppm (selectable via DIP switches)
Accuracy, CO2:	typical ±50 ppm ± 5 % of measured value
Temp. dependence, CO2:	±5 ppm per °C or ±0.5 % of the measured value per °C (whichever is higher)

Continued on next page!

SF-K

Plastic sinter filter (standard)



SF-M

Metal sinter filter (optional)



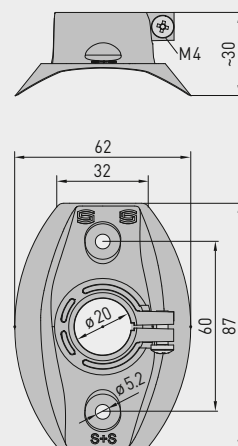
MFT-20-K

Mounting flange, plastic



Dimensional drawing (mm)

MFT-20-K



**NEW**

S+S REGELTECHNIK

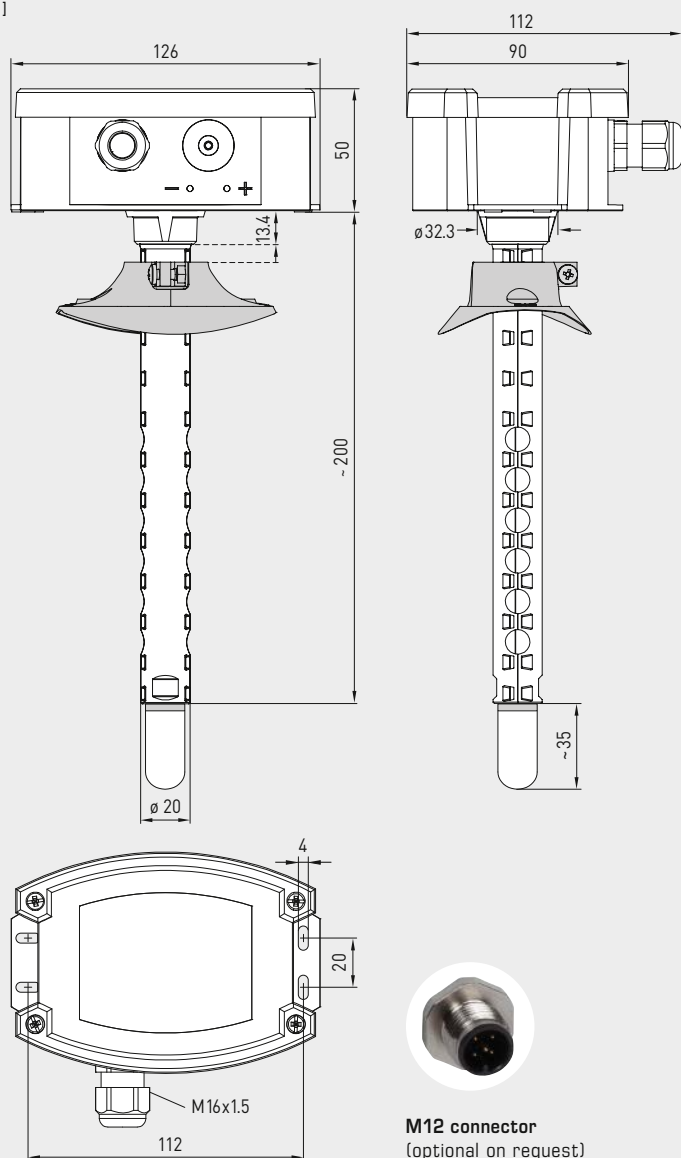
AERASGARD® KTM-CO2-SD AERASGARD® KFTM-(LQ)-CO2-AW / KLQ-CO2-AW

Multifunctional duct sensors and measuring transducers, incl. mounting flange, for humidity, temperature, CO₂ content and air quality (VOC), calibratable, with active output (Automatic Output Switching) / switching output



Dimensional drawing
[mm]

KFTM-LQ-CO2-AW



KFTM-LQ-CO2-AW
with plastic sinter filter
(standard)



KFTM-LQ-CO2-AW
with display and
plastic sinter filter
(standard)



TECHNICAL DATA

(continued)

Pressure dependence:	± 0.13 % per mm Hg
Long-term stability:	< 2 % in 15 years
Gas exchange:	by diffusion
Response time:	< 2 minutes, minimum flow rate 0.3 m/s (air)
Ambient temperature:	-10...+60 °C / +14...+140 °F
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Cable connection:	Cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, v _{max} = 30 m/s (air) Ø 20 mm, NL = 200 mm (optional 120 mm), L = 202.5 mm (without filter) / L = 235 mm (with filter)
Process connection:	via flange made of plastic (included in scope of delivery)
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529) Housing in the built-in state (permeable PLEUROFORM: IP 30)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	three-line display with illumination , cutout approx. 70 x 40 mm (W x H), for displaying actual humidity, actual temperature, air quality and/or the actual CO ₂ content



AERASGARD® KTM-CO2-SD

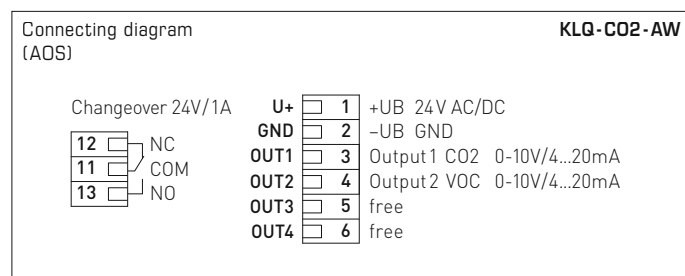
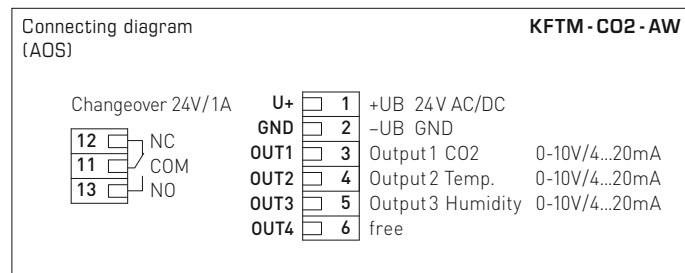
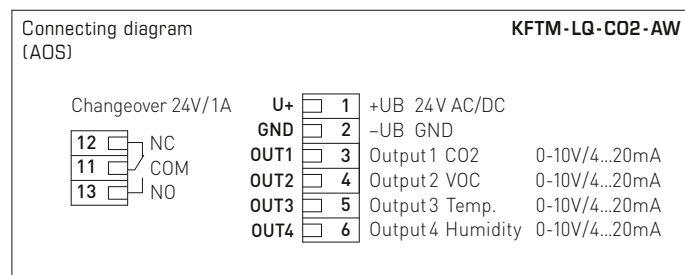
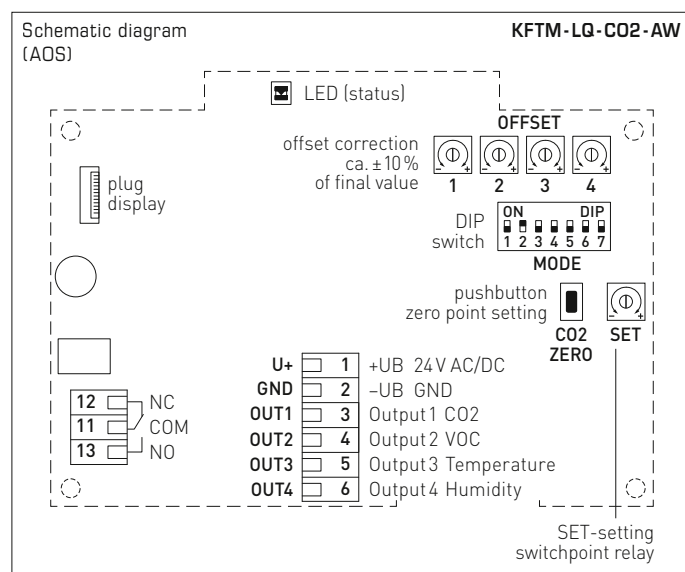
AERASGARD® KFTM-(LQ)-CO2-AW / KLQ-CO2-AW

Multifunctional duct sensors and measuring transducers, incl. mounting flange, for humidity, temperature, CO2 content and air quality (VOC), calibratable, with active output (Automatic Output Switching) / switching output

NEW



S+S REGELTECHNIK



DIP switches		KFTM-LQ-CO2-AW	
CO2			
CO2 content		DIP 1	
0...5000 ppm		ON	
0...2000 ppm (default)		OFF	
CO2 automatic calibration		DIP 2	
activated (default)		ON	
deactivated		OFF	
VOC			
VOC sensitivity		DIP 3	DIP 4
FAST		ON	ON
SLOW		ON	OFF
NORMAL (default)		OFF	OFF
Relay			
Relay assignment		DIP 5	DIP 6
Humidity:	10...95% RH	ON	ON
Temperature:	-23...+74 °C -31...+176 °F	OFF	ON
VOC:	10...95 %	ON	OFF
CO2 (default):	600...1900 ppm / 900...4700 ppm	OFF	OFF
Display			
System of units			DIP 7
Imperial:			ON
SI (default):			OFF
Temperature			
Value indicated in display depends on system of units set (DIP 7).			
			



KFTM-CO2-AW: DIP 3 and 4 not assigned.

KLQ-CO2-AW: DIP 7 not assigned.

Note:

The offset potentiometers are assigned to the corresponding output of the measurand, depending on the respective unit type.

Output 1 → Offset 1

Output 2 → Offset 2

Output 3 → Offset 3

Output 4 → Offset 4

Output free → Offset not assigned.

For further technical information, see the operating instructions

Automatic detection and switching to standard signal 0...10V or 4...20 mA



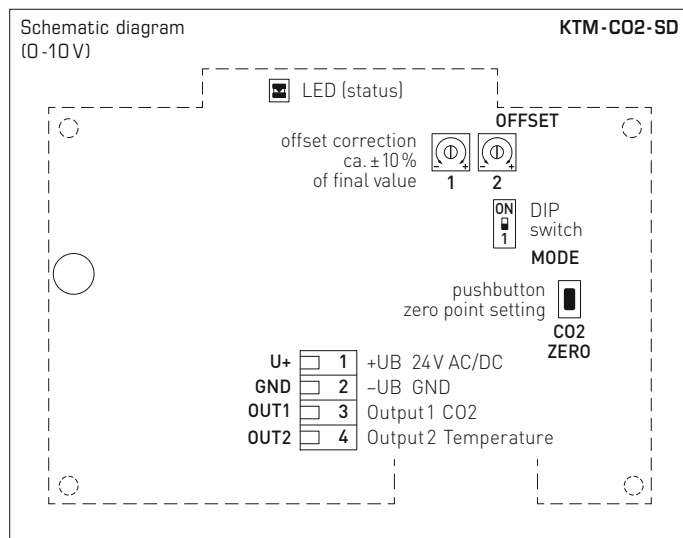
AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

**NEW**

S+S REGELTECHNIK

AERASGARD® KFTM-(LQ)-CO2-AW / KLQ-CO2-AW

Multifunctional duct sensors and measuring transducers, incl. mounting flange,
for humidity, temperature, CO2 content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output



DIP switches KTM-CO2-SD	
CO2	
CO2 content	DIP 1
0...5000 ppm	ON
0...2000 ppm (default)	OFF

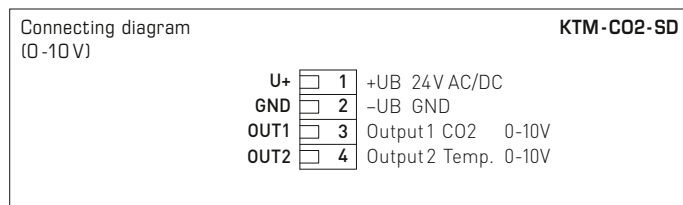
Note:

The offset potentiometers are assigned to the corresponding output of the measurand, depending on the respective unit type.

Output 1 → Offset 1 (CO2)

Output 2 → Offset 2 (temperature)

For further technical information, see the operating instructions

**Temperature**

MR: -35...+80 °C / -31...+176 °F

°C	U _A [V]	I _A [mA]	°F
-35	0.0	4.0	-31
-30	0.4	4.7	-22
-25	0.9	5.4	-13
-20	1.3	6.1	-4
-15	1.7	6.8	+5
-10	2.2	7.5	+14
-5	2.6	8.2	+23
0	3.0	8.9	+32
+5	3.5	9.6	+41
+10	3.9	10.3	+50
+15	4.3	11.0	+59
+20	4.8	11.7	+68
+25	5.2	12.3	+77
+30	5.7	13.0	+86
+35	6.1	13.7	+95
+40	6.5	14.4	+104
+45	7.0	15.1	+113
+50	7.4	15.8	+122
+55	7.8	16.5	+131
+60	8.3	17.2	+140
+65	8.7	17.9	+149
+70	9.1	18.6	+158
+75	9.6	19.3	+167
+80	10.0	20.0	+176

Humidity

MR: 0...100 % RH

% 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

CO2

MR: 0...2000 ppm / 0...5000 ppm

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

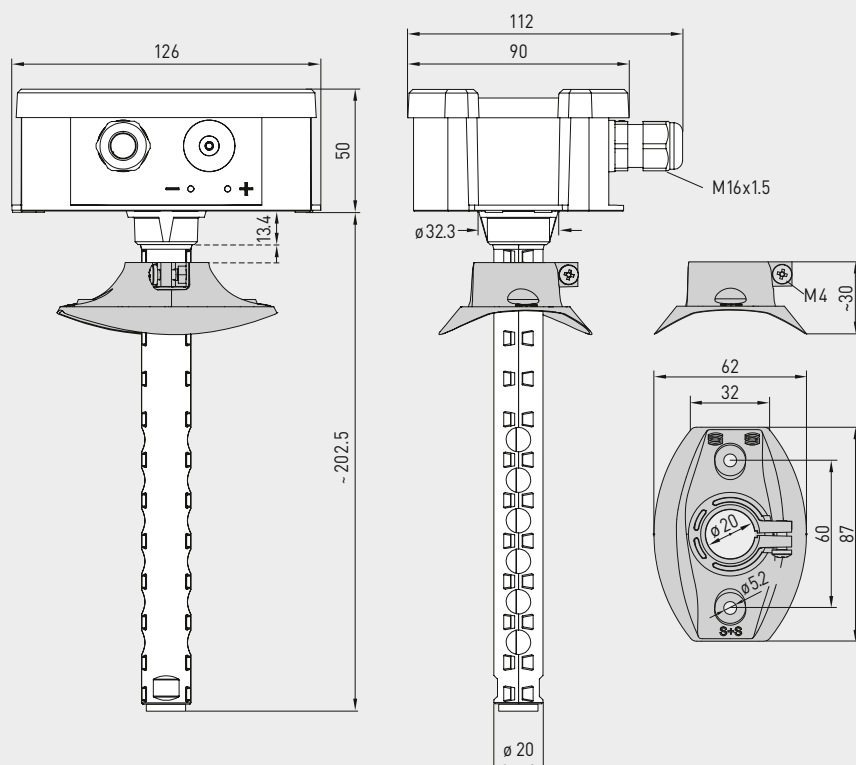
MR: 0...100 % VOC

% 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

Multifunctional duct sensors and measuring transducers, incl. mounting flange,
for humidity, temperature, CO₂ content and air quality (VOC), calibratable,
with active output (Automatic Output Switching) / switching output

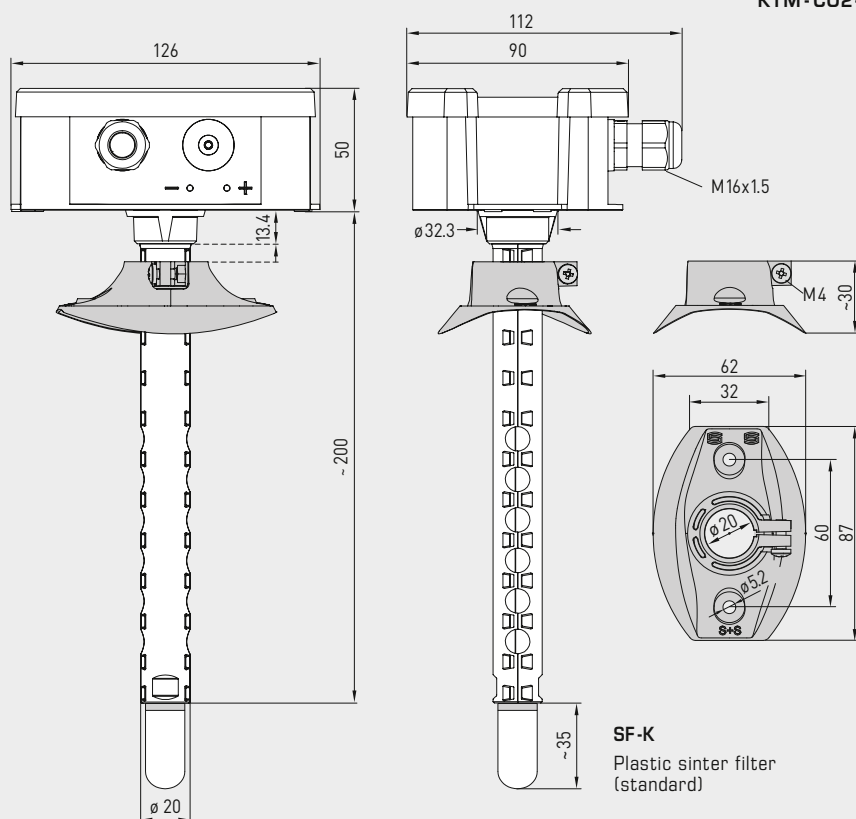
Dimensional drawing
[mm]

KLQ-CO2-AW



Dimensional drawing
[mm]

KFTM-CO2-AW
KFTM-LQ-CO2-AW
KTM-CO2-SD



SF-K
Plastic sinter filter
(standard)

SF-M
Metal sinter filter
(optional)





NEW

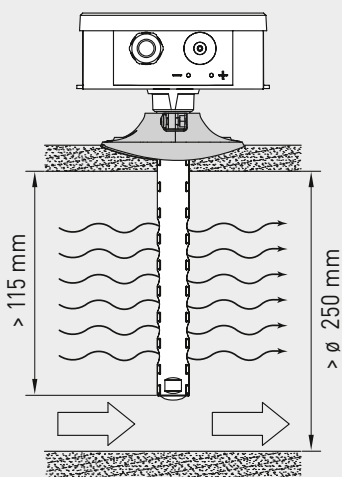
S+S REGELTECHNIK

AERASGARD® KTM-CO2-SD AERASGARD® KFTM-(LQ)-CO2-AW / KLQ-CO2-AW

Multifunctional duct sensors and measuring transducers, incl. mounting flange, for humidity, temperature, CO2 content and air quality (VOC), calibratable, with active output (Automatic Output Switching) / switching output



PATENTED

Mounting diagram
(NL 200 mm)KLQ-CO2-AW
without filterKFTM-CO2-AW
KFTM-LQ-CO2-AW
KTM-CO2-SD
with plastic
sinter filter

AERASGARD® KTM-CO2-SD

Duct sensor for temperature and CO2 content, *Standard*

AERASGARD® KLQ-CO2-AW

Duct sensor for air quality (VOC) and CO2 content, *Premium*

AERASGARD® KFTM-CO2-AW

Multifunctional duct sensor
for humidity, temperature and CO2 content, *Deluxe*

AERASGARD® KFTM-LQ-CO2-AW

Multifunctional duct sensor
for humidity, temperature, CO2 content and air quality (VOC), *Deluxe*

Type / WG02	Measuring range				Equipment	Item No.
	Humidity	Temperature	CO2	VOC	Display	
KTM-CO2-SD			(switchable)			U variant
KTM-CO2-SD-U	–	–35...+80 °C / –31...+176 °F	0...2000 / 5000 ppm	–	–	1501-8112-1001-600
KLQ-CO2-AW			(switchable)			AOS
KLQ-CO2-AW	–	–	0...2000 / 5000 ppm	0...100 %	W	1501-8111-E301-600
KLQ-CO2-AW LCD	–	–	0...2000 / 5000 ppm	0...100 %	W ■	1501-8111-E371-600
KFTM-CO2-AW			(switchable)			AOS
KFTM-CO2-AW	0...100 % RH	–35...+80 °C	0...2000 / 5000 ppm	–	W	1501-8116-E301-600
KFTM-CO2-AW LCD	0...100 % RH	–35...+80 °C / –31...+176 °F	0...2000 / 5000 ppm	–	W ■	1501-8116-E371-600
KFTM-LQ-CO2-AW			(switchable)			AOS
KFTM-LQ-CO2-AW	0...100 % RH	–35...+80 °C	0...2000 / 5000 ppm	0...100 %	W	1501-8118-E301-600
KFTM-LQ-CO2-AW LCD	0...100 % RH	–35...+80 °C / –31...+176 °F	0...2000 / 5000 ppm	0...100 %	W ■	1501-8118-E371-600
Outputs / equipment:	0 – 10 V / 4...20 mA (automatic via AOS) – W = with changeover contact For unit type KTM-CO2-SD , 0-10 V is fixed – no changeover contact!					
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 on request shortened protective tube PLEUROFORM™ , NL = 120 mm on request					
Note:	This unit must not be used as safety-relevant device!					
ACCESSORIES						
SF-K	Plastic sinter filter, Ø 16 mm, L = 35 mm, exchangeable					7000-0050-2310-000
SF-M	Metal sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel V4A (1.4404)					7000-0050-2200-100



AERASGARD® RPC02 AERASGARD® RPC02-W

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

NEW



S+S REGELTECHNIK

Maintenance-free room pendulum sensor **AERASGARD® RPC02** with active output and **RPC02-W** with active/switching output, automatic calibration (can be deactivated via DIP) and manual calibration (via push-button), in an impact-resistant plastic housing with quick-locking screws, optionally with / without display, for determining the CO₂ content in the air (0 to 2000 / 5000 / 10000 ppm). The measuring transducer converts the measurand into a standard signal of 0-10 V (output 1) and 4...20 mA (output 2).

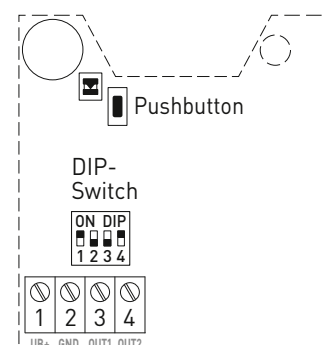
The CO₂ measurement is performed using an optical **NDIR sensor** (non-dispersive infra-red technology). The sensor is simply suspended into the room as a pendulum, which ensures an accurate measurement result in rooms with high walls. The zero point calibration (400 ppm CO₂) can be carried out in relation to the current ambient conditions by manual calibration on the unit. The air quality sensor performs an automatic self-calibration at regular intervals, which ensures CO₂ measurement with long-term stability. The sensor is used in ventilation and air conditioning technology, ventilation monitoring, filter monitoring, level measurement.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %), half-wave rectifier, read the instructions!
Power consumption:	Ø 100 mA, peak current up to 300 mA
Switching type:	3-wire connection
Output 1 (CO ₂):	0-10V
Output 2 (CO ₂):	4...20 mA
Relay output:	RPC02 without changeover contact RPC02-W with potential-free changeover contact (max. 48 V / 1 A), switch point can be set
Sensor:	optical NDIR sensor (non-dispersive infra-red technology), with manual calibration (via zero push-button), with automatic calibration (can be deactivated via DIP switches)
Measuring range:	multi-range switching (selectable via DIP switches) 0...2000 ppm; 0...5000 ppm; 0...10000 ppm (other measuring ranges optionally available upon request)
Accuracy:	typically ± 75 ppm ± 5 % of measured value up to 5000 ppm, otherwise ± 100 ppm ± 5 % of measured value (at 20 °C, 45 % RH, 1013 mbar, auto-calibration active)
Temperature dependence:	± 5 ppm per °C (at 20 °C)
Pressure dependence:	± 0.16 % per hPa based on standard pressure
Long-term stability:	< 1 % of final value per year
Gas exchange:	by diffusion
Warm-up time:	< 10 minutes
Response time:	< 5 minutes
Sensor protection:	filter foil (sensor in pendulum)
Protective tube:	Ø 25.5 mm, L = 95 mm (see dimensional drawing)
Sensor cable:	PVC, H03VV-F, 4 x 0.14 mm ² , KL = 2 m
Housing:	plastic, UV-resistant, polyamide material, 30% glass-globe reinforced, with quick-locking screws (slotted/Phillips head combination) colour traffic white (similar to RAL 9016)
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	cable gland made of plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm)
Electrical connection:	0.14–1.5 mm ² , via screw terminals
Process connection:	via screws
Ambient temperature:	0...+50 °C (operation); -20...+50 °C (storage)
Permitted humidity:	10...95 % RH, non-condensing air
Response time:	< 5 min, running-in time < 20 min
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529) housing IP 30 (according to EN 60 529) pendulum
Standards:	CE-conformity according to EMC Directive 2014 / 30 / EU
Optional:	with display in hinged cover housing BC" (90 x 80 x 47 mm), LCD display (128 x 64 pixels), display content can be rotated by 90° steps, backlight (on/off/auto), to display the actual CO ₂ content in ppm, set switching threshold, switching status and MIN/MAX of the selected interval (1 h / 6 h / 12 h / 24 h)

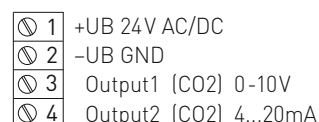
Schematic diagram

RPC02



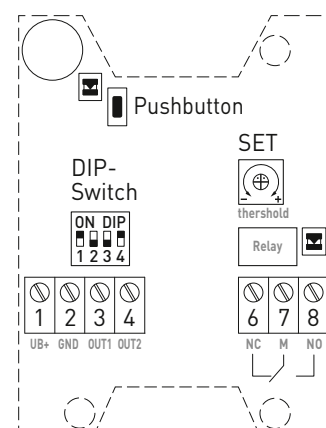
Connection diagram

RPC02



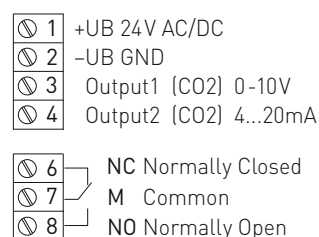
Schematic diagram

RPC02-W



Connection diagram

RPC02-W





NEW

S+S REGELTECHNIK

AERASGARD® RPC02
AERASGARD® RPC02-W

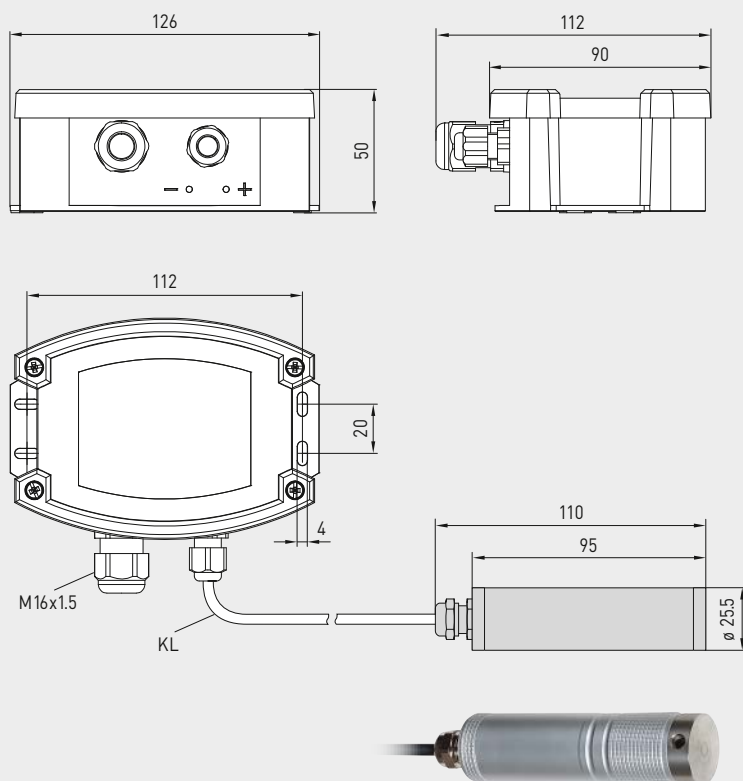
Room pendulum CO2 sensor or measuring transducer,
self-calibrating, with multi-range switching
and active/switching output



Dimensional drawing
[mm]

RPC02 - xx

RPC02 - xx



Measuring range CO2 content	DIP 1	DIP 2	DIP 3
0...2000 ppm (default)	ON	OFF	OFF
0...5000 ppm	OFF	ON	OFF
0...10000 ppm	OFF	OFF	ON

Automatic CO2 calibration	DIP 4
activated (default)	ON
deactivated	OFF

AERASGARD® RPC02 Room pendulum CO2 sensor or measuring transducer, Premium						
AERASGARD® RPC02 - W Room pendulum CO2 sensor or measuring transducer, Premium						
Type / WG02	Measuring ranges CO2	Output 1 CO2	Output 2 CO2	Output switching	Display	Item no.
RPC02 (switchable)						
RPC02	0...2000 ppm / 0...5000 ppm / 0...10000 ppm	0-10 V	4...20 mA	–		3CON-0203-0001-000
RPC02 LCD	(3x as above)	0-10 V	4...20 mA	–	■	3CON-0206-0001-000
RPC02 - W (switchable)						
RPC02-W	0...2000 ppm / 0...5000 ppm / 0...10000 ppm	0-10 V	4...20 mA	Changeover contact		3CON-0203-1001-000
RPC02-W LCD	(3x as above)	0-10 V	4...20 mA	Changeover contact	■	3CON-0206-1001-000
Note: This unit must not be used as a safety-relevant device!						

Air Flow

RHEASGARD® & RHEASREG® Air flow velocity and volume flow

Our new product family of precise electronic air flow sensors increases well-being and improves energy efficiency.

In addition to duct sensors, there are other housing versions available for on-wall or top-hat rail mounting with external duct probe.

Application Areas

- Ventilator flow monitoring, butterfly valves, heating registers and humidifiers
- Ventilation and air conditioning
- Energy management
- Residential, working and conference rooms
- Movie theaters, showrooms and retail stores
- Institutes and laboratories





RHEASGARD® & RHEASREG® AIR FLOW SENSORS AND AIR FLOW MONITORS

Airflow sensors and monitors, electronic

KHSSF	Top-hat rail airflow sensor (with external duct probe)	NEW 629
KHSSW	Top-hat rail airflow monitor (with external duct probe)	NEW 629
KLSW/KLGF	Duct airflow monitor	NEW 637
KLGFVT	Top-hat rail airflow monitor for air flow, volume flow and temperature	NEW 637
PLSW/PLGF	Pendulum airflow monitor (with external duct probe)	NEW 633
PLGFV	Pendulum airflow monitor for air flow and volume flow (with external duct probe)	NEW 633

Airflow monitors, mechanical

SW	Flow monitor, mechanical, with paddle	641
WFS	Wind vane switch, mechanical, with paddle	639

Accessories

see chapter Accessories	652
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**Duct top-hat rail airflow sensor / airflow monitor,
 electronic, external flow probe incl. mounting flange,
 with active / switching output**

Electronic duct top-hat rail airflow sensor **RHEASGARD® KHSSF** with active / switching output, housing for installation in distributor boxes or control cabinets with 35 mm mounting rail, external flow probe incl. mounting flange, for determining the flow velocity (0.1...20 m/s). The measuring transducer automatically detects the required output type and converts the measurands into the required standard signal of 0–10 V or 4...20 mA (**Automatic Output Switching**).

Electronic duct top-hat rail airflow monitor **RHEASREG® KHSSW** with switching output, housing for installation in distributor boxes or control cabinets with 35 mm mounting rail, external flow probe incl. mounting flange, for determining the flow velocity (0.1...20 m/s).

The flow sensors / flow monitors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) (KHSSW-W24, KHSSF-W) 230 V AC (± 10 %), 50 Hz (KHSSW-W230)
Current consumption:	approx. 3 VA
Outputs:	KHSSF-W 0–10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); 24 V changeover contact (max. 5 A, cos φ = 1) KHSSW-W24 24 V changeover contact (max. 5 A, cos φ = 1) KHSSW-W230 230 V AC changeover contact (max. 10 A, cos φ = 1)
Data point:	flow velocity [m/s]
Sensor:	calorimetric, temperature compensated, sensor breakage protection
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3 % of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % of final value per year
Reproducibility:	± 1.0 % of final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	60 s (changeover contact switched or 10 V / 20 mA at output, after applying the supply voltage)
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C
Operating status indicator:	2 colour LEDs on the front of the housing (see table)
Housing:	PC / ABS (UL94-V0) material, light grey colour, 36 mm (2TE) wide for 35 mm mounting rail, approx. 90 x 36 x 58 mm (H x W x D)
Probe/sensor:	Polyamide (PA6) material, white colour (blue sensor holder), with torsion protection, Ø 12 mm, EL = approx. 20–155 mm, v _{max} = 30 m/s (air)
Sensor cable:	PVC LiYY, 3-wire, KL = approx. 2.4 m
Electrical connection:	0.14 - 2.5 mm ² , via screw terminal
Process connection:	by means of mounting flange with seal (included in the scope of delivery)
Ambient temperature:	storage –20...+50 °C; operation 0...+60 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	II (according to EN 60 730) with UB = 230 V (KHSSW-W230) III (according to EN 60 730) with UB = 24 V (KHSSW-W24, KHSSF-W)
Protection type:	IP 30 (according to EN 60 529) housing IP 20 (according to EN 60 529) sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU

KHSSW	Relay	1. LED top (yellow)	off = Switching point not reached (contact 5-6 open) illuminated = Switching point reached (contact 5-6 closed) blinking = Start-up override (s.b.) active
	On/Off	2. LED bottom (green)	off = Device defective illuminated = Device in operation blinking = Fault with sensor or sensor cable
KHSSF	Relay	1. LED top (green)	off = Switching point not reached (contact 5-6 open) illuminated = Switching point reached (contact 5-6 closed)
	s.b.	2. LED bottom (yellow)	off = Start-up override (s.b.) inactive illuminated = Start-up override (s.b.) active



NEW

S+S REGELTECHNIK

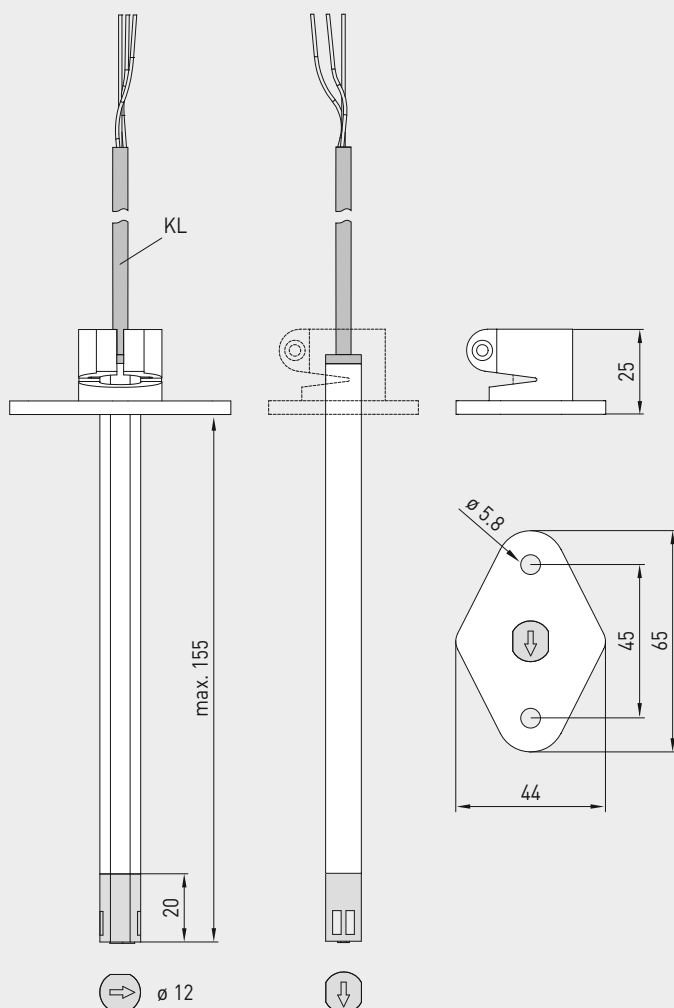
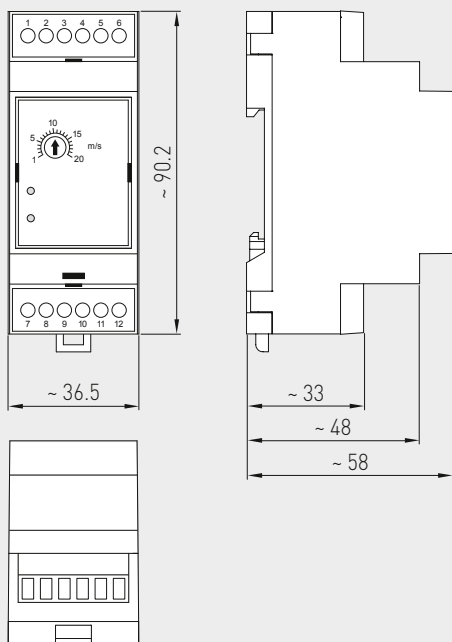
RHEASGARD® KHSSFxx
RHEASREG® KHSSWxx

Duct top-hat rail airflow sensor / airflow monitor,
electronic, external flow probe incl. mounting flange,
with active / switching output



Dimensional drawing
[mm]

KHSSF xx
KHSSW xx



KHSSF xx
Housing



KHSSW xx
Housing



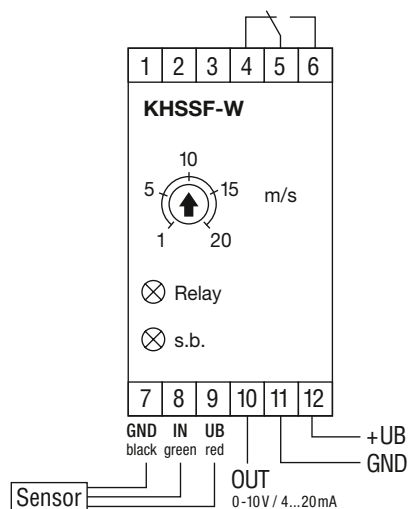
KHSSF xx
KHSSW xx
Probe





Schematic diagram

KHSSF-W



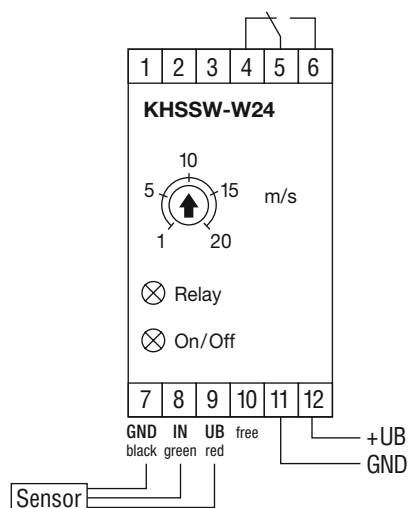
Automatic detection and switching
to standard signal 0...10 V or 4...20 mA



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

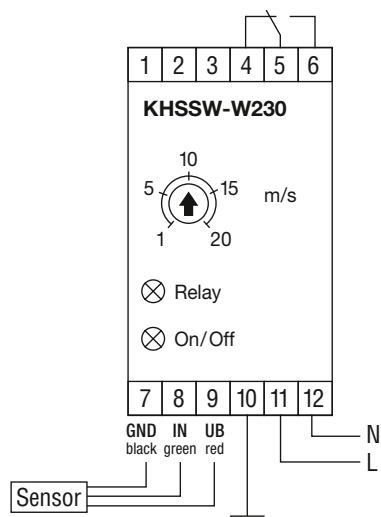
Schematic diagram

KHSSW-W24



Schematic diagram

KHSSW-W230



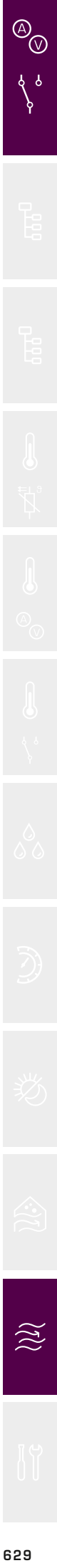


NEW

S+S REGELTECHNIK

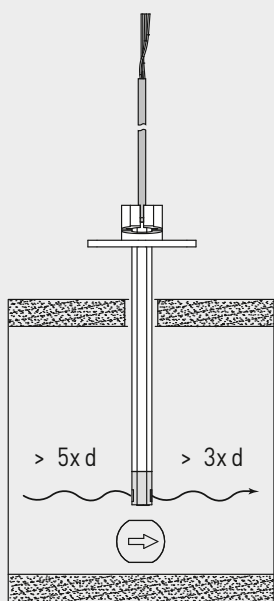
RHEASGARD® KHSSFxx
RHEASREG® KHSSWxx

Duct top-hat rail airflow sensor / airflow monitor,
electronic, external flow probe incl. mounting flange,
with active / switching output



Mounting diagram

KHSSF xx
KHSSW xx



Note for mounting:
Sensor works unidirectionally.
Observe the markings for the
direction of flow!



KHSSF xx
KHSSW xx
Probe



Type / WG01	Power supply	Output active	Output switching	Item no.
RHEASGARD® KHSSF RHEASREG® KHSSW		Duct top-hat rail airflow sensor, with active and switching output Duct top-hat rail airflow monitor, with switching output		
KHSSF		AOS		
KHSSF-W	24 V AC / DC	0-10 V / 4...20 mA	1 changeover contact	1701-5118-0102-001
KHSSW				
KHSSW-W24	24 V AC / DC	–	1 changeover contact	1701-5113-0102-001
KHSSW-W230	230 V AC	–	1 changeover contact	1701-5133-0102-001
Note:				
Changeover contact with automatic reset (relay opens automatically when value falls below the threshold again)				
AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0-10 V or 4...20 mA				



**Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output**

Electronic pendulum airflow sensor **RHEASGARD® PLGF** with active output,
housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display,
with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).
The measuring transducer converts the measurement signal into a standard signal of 0 - 10 V.

Electronic pendulum airflow sensor/monitor **RHEASGARD® PLGF** (without display) and **PLGFV** (with display)
with active and switching output, housing made of impact-resistant plastic with quick-locking screws,
with cable gland, with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).
For unit type **PLGFV**, the calculated volume flow parameter can be retrieved as an alternative to the flow
(configurable on the display). The measuring transducer automatically detects the required output type and
converts the measurands into the required standard signal of 0 - 10 V or 4...20 mA (**Automatic Output Switching**).

Electronic pendulum airflow monitor **RHEASREG® PLSW** with switching output,
housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display,
with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).

The flow sensors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring
of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Current consumption:	approx. 3 VA (PLGF, PLSW-W24) approx. 4 VA (PLGF, PLGFV)
Data points:	flow velocity [m/s], volume flow [m³/h]
Outputs:	PLGF 1x 0-10 V (U variant) PLGF(V) 1x 0-10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); 24 V changeover contact (max. 5 A, cos φ = 1.0) PLSW-W24 24 V changeover contact (max. 5 A, cos φ = 1.0)

AIRFLOW

Sensor:	calorimetric, temperature compensated, sensor breakage protection, with manual zero-point calibration (via push-button)
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3 % of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % of final value per year
Reproducibility:	± 1.0 % of final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	0 / 60 s (PLGF/PLSW without display), can be activated via DIP switch 0...120 s (PLGF/PLSW with display, PLGF/PLGFV), can be adjusted via potentiometer
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr2)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm)
Electrical connection:	0.2 - 1.5 mm², via push-in terminal
Probe/sensor:	polyamide (PA6) material, white colour (blue sensor holder), with torsion protection, Ø 12 mm, EL = approx. 20 - 155 mm, v _{max} = 30 m/s (air)
Sensor cable:	PVC LiYY, 5-wire, KL = approx. 2.4 m
Process connection:	by means of mounting flange with seal (included in the scope of delivery)
Mounting:	on-wall housing with external duct probe – observe flow direction!
Ambient temperature:	storage -20...+50 °C; operation 0...+50 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	III (according to EN 60 730) where UB = 24 V
Protection type:	IP 65 (according to EN 60 529) housing; IP20 sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	display with illumination , three-line, cutout approx. 70 x 40 mm (W x H), to indicate the flow velocity and volume flow



NEW

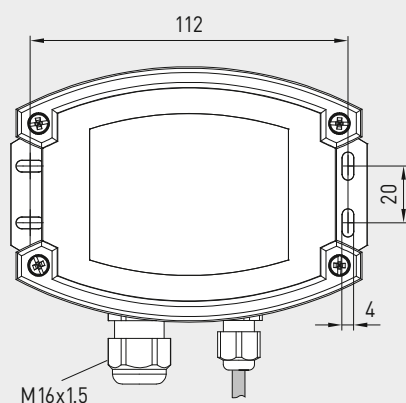
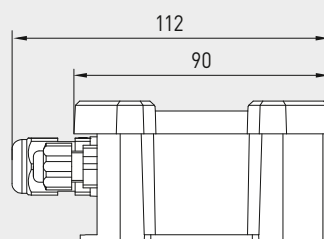
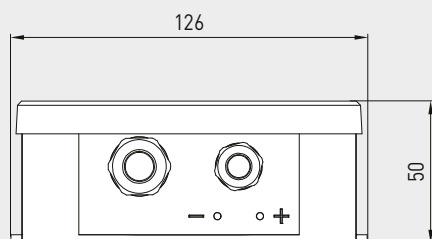
S+S REGELTECHNIK

RHEASGARD® PLGFxx
RHEASREG® PLSWxx

Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output



Dimensional drawing
[mm]

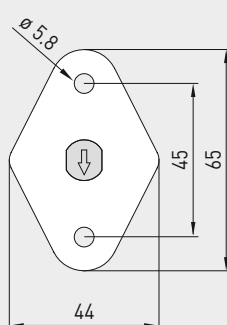
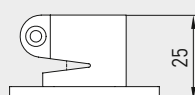
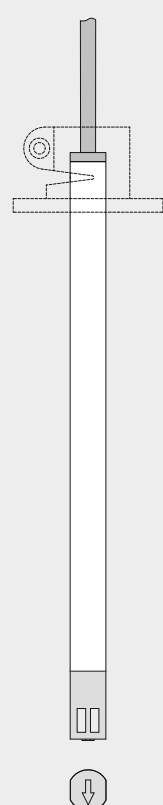
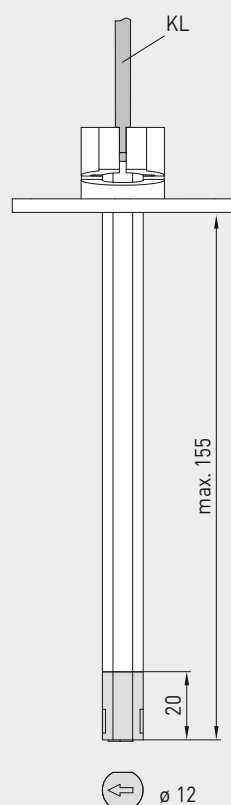


PLGF
PLSW
Housing

PLGF
PLSW
Housing with
external probe



Dimensional drawing
[mm]



PLGF
PLSW
Probe

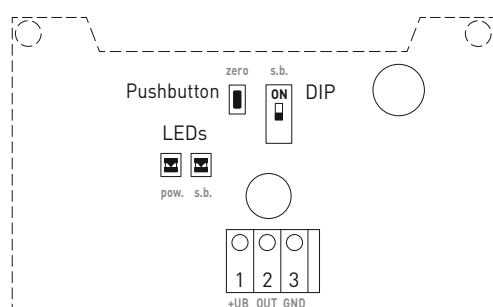
Automatic detection and switching
to standard signal 0...10V or 4...20mA

 **AOS-PATENTED**
AUTOMATIC OUTPUT SWITCHING



Schematic diagram

PLGF-U



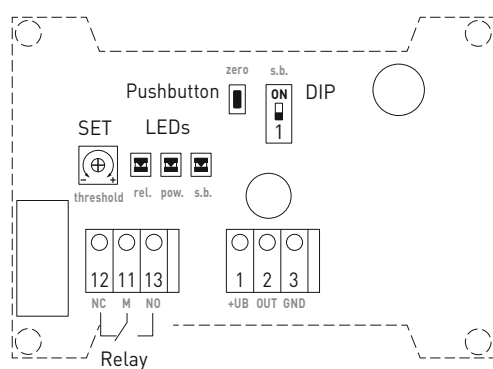
Connection diagram

PLGF-U
without display

- | | |
|---|----------------------------|
| 1 | +UB 24V AC/DC |
| 2 | Output 0-10V Flow velocity |
| 3 | -UB GND |

Schematic diagram

PLSW-W24



Connection diagram

PLSW-W24
without display

- | | |
|---|---------------|
| 1 | +UB 24V AC/DC |
| 2 | free |
| 3 | -UB GND |
-
- | | |
|----|--------------------|
| 12 | NC Normally Closed |
| 11 | M Common |
| 13 | NO Normally Open |

PLSW-W24

with changeover contact,
UB = 24V



PLGF-U

with output 0-10V,
UB = 24V



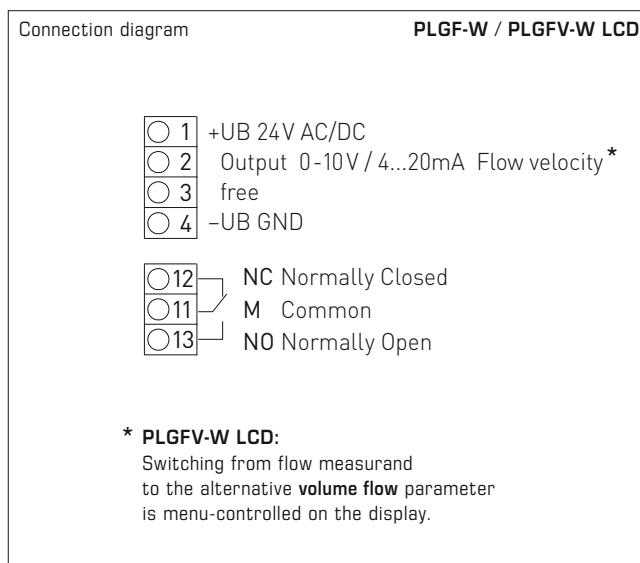
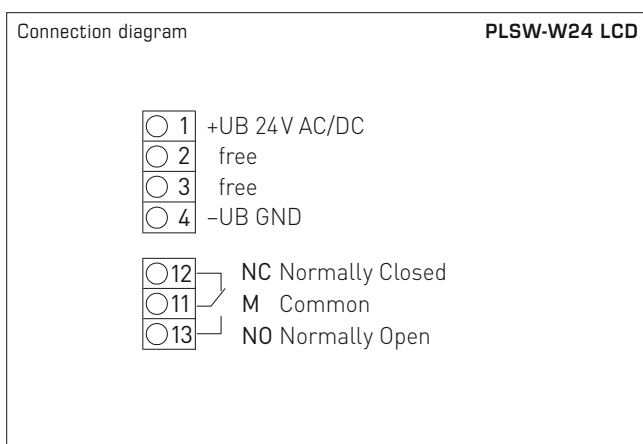
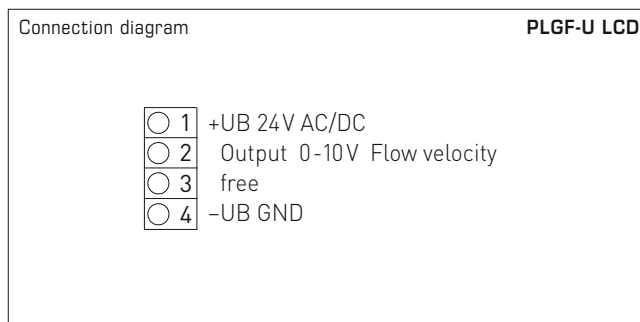
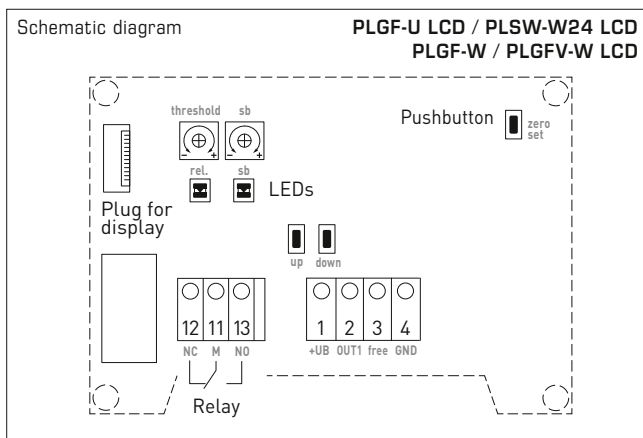


S+S REGELTECHNIK

NEW

RHEASGARD® **PLGFxx**
RHEASREG® **PLSWxx**

Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output



RHEASGARD®	PLGF	Pendulum airflow sensor, electronic, with active output
RHEASGARD®	PLGF(V)-W	Pendulum airflow sensor, electronic, with active and switching output
RHEASREG®	PLSW-W24	Pendulum airflow monitor, electronic, with switching output

Type / WG01	Power supply	Output active	Output switching	additional Parameters	Display	Item no.
PLGF		U variant				
PLGF-U	24V AC / DC	1x 0-10V	–	–		1701-6111-0101-000
PLGF-U LCD	24V AC / DC	1x 0-10V	–	–	■	1701-6111-1101-000
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101					on request
PLGF(V)-W		AOS				
PLGF-W	24V AC / DC	1x 0-10V / 4...20mA	1 changeover contact	–		1701-6118-0100-001
PLGFV-W LCD	24V AC / DC	1x 0-10V / 4...20mA	1 changeover contact	V	■	1701-6118-1300-001
PLSW-W24						
PLSW-W24	24V AC / DC	–	1 changeover contact	–		1701-6113-0101-001
PLSW-W24 LCD	24V AC / DC	–	1 changeover contact	–	■	1701-6113-1101-001

Note: **Changeover contact** with automatic reset (relay opens automatically when value falls below the threshold again)

AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0-10 V or 4...20 mA

V = volume flow (0...200,000 m³/h) – alternative parameter, can be configured via display!

**Duct air flow sensors / air flow monitors,
 incl. mounting flange, electronic,
 with active / switching output**

Electronic duct air flow sensor **RHEASGARD® KLGF** with active output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display, to determine the flow velocity (0.1...20 m/s). The measuring transducer converts the measurement signal into a standard signal of 0 - 10 V.

Electronic duct air flow sensor/monitor **RHEASGARD® KLGF** (without display) and **KLGFVT** (with display) with active and switching output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, to determine the flow velocity (0.1...20 m/s) and temperature (0...+50 °C). For device type **KLGFVT**, the calculated volume flow parameter can be retrieved as an alternative to the flow (configurable on the display). The measuring transducer automatically detects the required output type and converts the measurands into the required standard signal of 0 - 10 V or 4...20 mA (**Automatic Output Switching**).

Electronic duct airflow monitor **RHEASREG® KLSW** with switching output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display, to determine the flow velocity (0.1...20 m/s). The flow sensors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) (KLSW-W24, KLGF xx) 230 V AC, 50 Hz (KLSW-W230)
Current consumption:	approx. 3 VA (KLGF, KLSW-W24, KLSW-W230) approx. 4 VA (KLGFVT, KLGFVT)
Data points:	flow velocity [m/s], volume flow [m³/h], temperature [°C]
Outputs:	KLGF 1x 0 - 10 V (U variant) KLGF(V)T 2x 0 - 10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); changeover contact 24 V (max. 5 A, cos φ = 1.0) KLSW-W24 changeover contact 24 V (max. 5 A, cos φ = 1.0) KLSW-W230 changeover contact 230 V AC (max. 5 A, cos φ = 1.0)

AIR FLOW

Sensor:	calorimetric, temperature compensated, sensor breakage protection, with manual zero-point calibration (via button)
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3% of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % final value per year
Reproducibility:	± 1.0 % final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	0 / 60 s (KLGF/KLSW without display), can be activated via DIP switch 0...120 s (KLGF/KLSW with display, KLGFVT/KLGFVT), can be adjusted via potentiometer
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C

TEMPERATURE

Sensor:	NTC 10k
Measuring range:	0...+50 °C
Accuracy:	typical ± 0.5 K at +25 °C
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 120 mm / 220 mm, $v_{max} = 30$ m/s (air), optional on request made of stainless steel V2A (1.4301), Ø 16 mm
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm)
Electrical connection:	0.2 - 1.5 mm², via push-in terminal
Process connection:	by means of plastic mounting flange (included in the scope of delivery)
Ambient temperature:	storage -20...+50 °C; operation 0...+50 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	II (according to EN 60 730) with UB = 230 V (KLSW-W230) III (according to EN 60 730) with UB = 24 V (KLSW-W24, KLGF xx)
Protection type:	IP 65 (according to EN 60 529) housing; IP 20 sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	display with illumination , three-line, cutout approx. 70 x 40 mm (W x H), to display the flow velocity, volume flow and temperature

Protective tube
(NL) 120 mm



Protective tube
(NL) 220 mm





NEW

S+S REGELTECHNIK

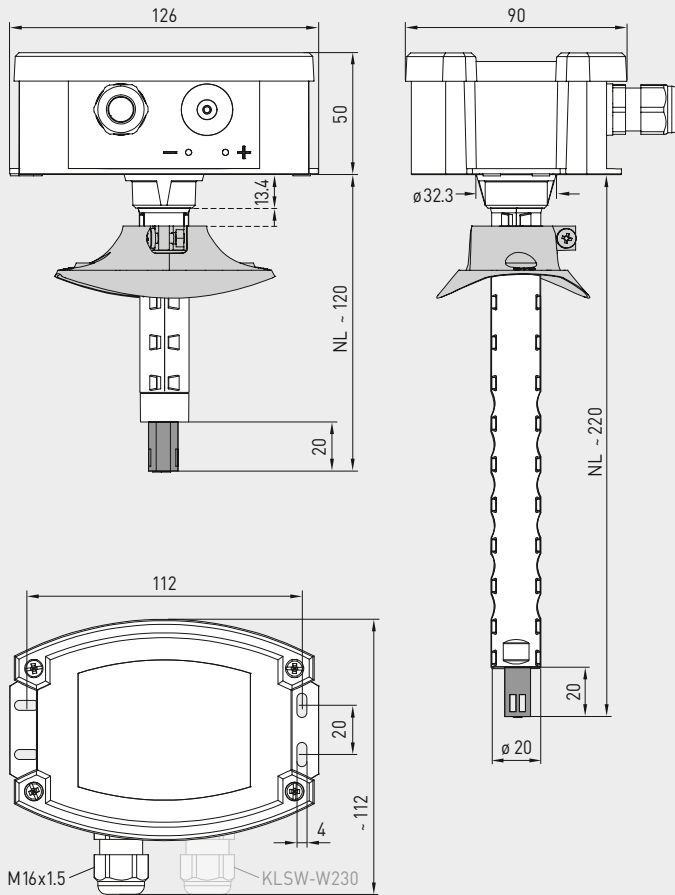
RHEASGARD® KLGF xx
RHEASREG® KLSW xx

Duct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching output



Dimensional drawing
[mm]

KLGF xx
KLSW xx



KLGF xx
KLSW xx
without display



KLSW-W230
without display



KLSW / KLGF
with display

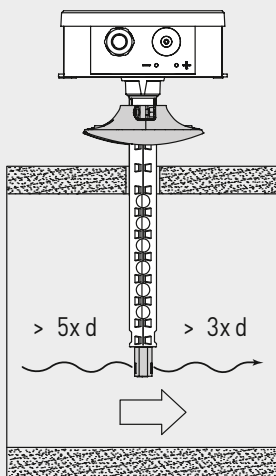


KLGFVt
with display



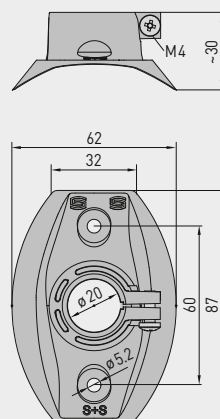
Installation diagram

KLGF xx
KLSW xx



Dimensional drawing
[mm]

MFT-20-K



MFT-20-K
Mounting flange
made of plastic



Automatic detection and switching
to standard signal 0...10V or 4...20mA



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING



RHEASGARD® KLGF xx RHEASREG® KLSWxx

Duct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching output

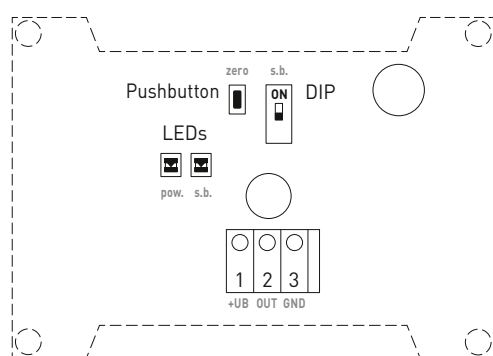
NEW



S+S REGELTECHNIK

Schematic diagram

KLGF-U



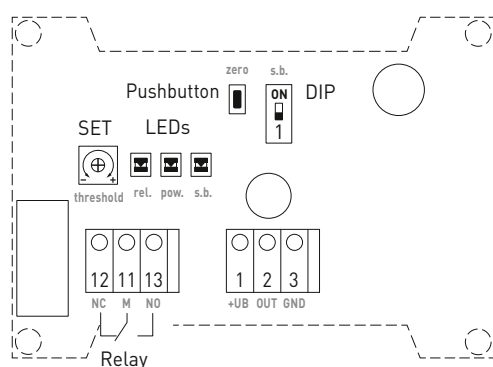
Connecting diagram

KLGF-U
without display



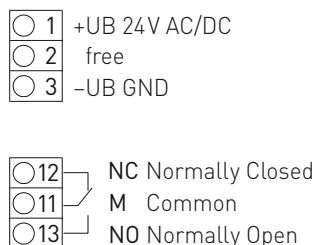
Schematic diagram

KLSW-W24



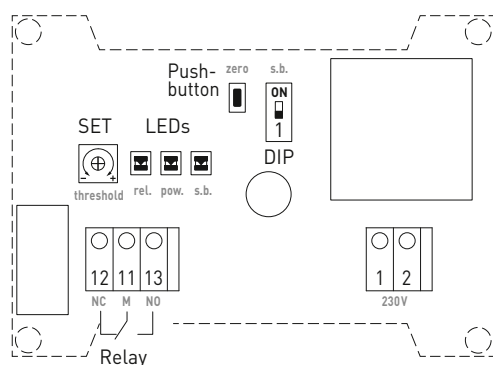
Connecting diagram

KLSW-W24
without display



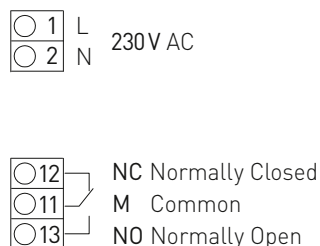
Schematic diagram

KLSW-W230



Connecting diagram

KLSW-W230
without display



KLGF-U

with output 0-10V,
UB = 24V

KLSW-W24

with changeover contact,
UB = 24V

KLSW-W230

with changeover contact,
UB = 230V

KLGF/KLSW-xx LCD
KLGF-T-W

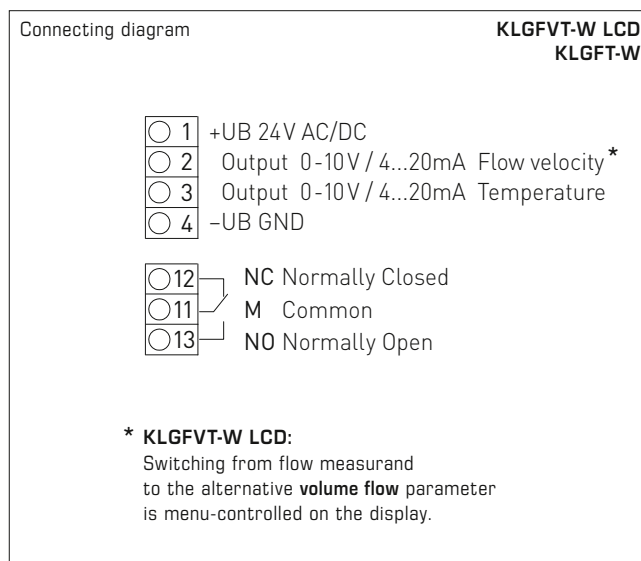
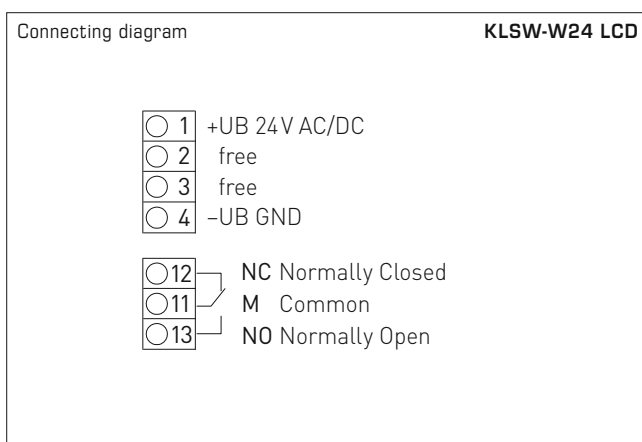
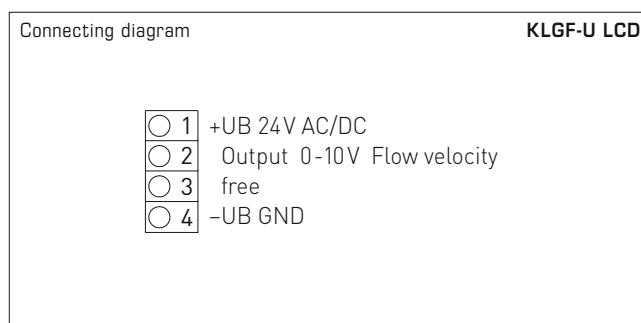
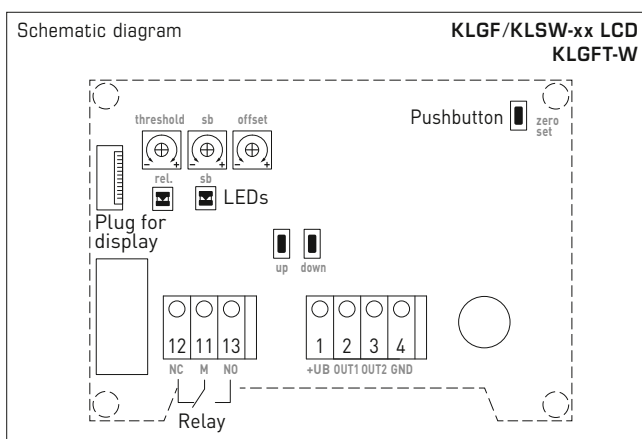
with display on/ad temperatur,
UB = 24V



**NEW**

S+S REGELTECHNIK

RHEASGARD® KLGF xx
RHEASREG® KLSWxx

Duct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching output


RHEASGARD® KLGF	Duct air flow sensor, electronic, with active output				
RHEASGARD® KLGF(V)T	Duct air flow sensor, electronic, with active and switching output				
RHEASREG® KLSW	Duct air flow monitor, electronic, with switching output				
Type / WG01	Power supply	Output active	Output switching	Display (NL)	Item no.
KLGF		U variant			
KLGF-U 120mm	24 V AC / DC	1x 0-10V	–	120 mm	1701-4111-0102-000
KLGF-U	24 V AC / DC	1x 0-10V	–	220 mm	1701-4111-0101-000
KLGF-U LCD	24 V AC / DC	1x 0-10V	–	220 mm 	1701-4111-1101-000
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 on request				
KLGF(V)T		AOS			
KLGF-T-W	24 V AC / DC	2x 0-10V / 4...20 mA	1 changeover contact	220 mm	1701-4118-0201-001
KLGFVT-W LCD	24 V AC / DC	2x 0-10V / 4...20 mA	1 changeover contact	220 mm 	1701-4118-1401-001
KLSW-W24					
KLSW-W24 120mm	24 V AC / DC	–	1 changeover contact	120 mm	1701-4113-0102-001
KLSW-W24	24 V AC / DC	–	1 changeover contact	220 mm	1701-4113-0101-001
KLSW-W24 LCD	24 V AC / DC	–	1 changeover contact	220 mm 	1701-4113-1101-001
KLSW-W230					
KLSW-W230 120mm	230V AC	–	1 changeover contact	120 mm	1701-4133-0102-001
KLSW-W230	230V AC	–	1 changeover contact	220 mm	1701-4133-0101-001
Note:	Changeover contact with automatic reset (relay opens automatically when value falls below the threshold again)				
	AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0 - 10 V or 4...20 mA				
KLGF-T, KLGFVT	T = temperature (0...+50 °C) – additional measurand V = volume flow (0...200,000 m³/h) – alternative parameter, can be configured via display!				

Vane switch, mechanical, with paddle, with switching output

Mechanical wind vane switch **RHEASREG® WFS** with switching output, in an impact-resistant plastic housing, with stainless-steel paddle, for flow monitoring of gaseous, non-aggressive media.

The flow sensor is used as a flow controller or air flow monitor in air conditioning ducts, in air intake or exhaust devices of ventilators or electric heating registers (also for contaminated, oily air).

TECHNICAL DATA

Switching capacity: (Contact load)	15 (8) A; 24...250 V AC at 24 V AC min. 150 mA
Contact:	dustproof microswitch as single-pole, potential-free changeover contact
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016)
Housing dimensions:	108 x 70 x 73.5 mm (Thor 2)
Base body:	galvanised steel
Moving arm:	brass
Vane:	stainless steel V2A (1.4301)
Cable connection:	cable gland , plastic (M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm)
Housing temperature:	-40...+85 °C
Operating difference:	≥ 1,5 m / s
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Protection class:	I (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity, EMC directive 2014 / 30 / EU, low-voltage directive 2014 / 35 / EU

FUNCTION

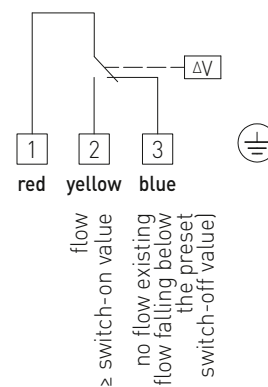
Monitor:	Contact 1 - 3 breaks when flow rate drops to the preset value. Simultaneously, contact 1 - 2 closes and can be used as signal contact.
Assembly note:	the installation is only possible in horizontal air ducts. Make sure that there is a damping section (≥ 5 times the pipe diameter) before and after the installation location. For wind speeds > 5 m/s , cut the vane/paddle at the marked spots. This will result in an increase of the default values (see table).

WFS



Connecting diagram

WFS





S+S REGELTECHNIK

RHEASREG® WFS

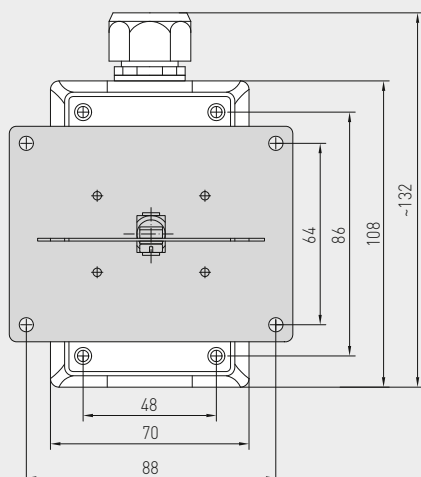
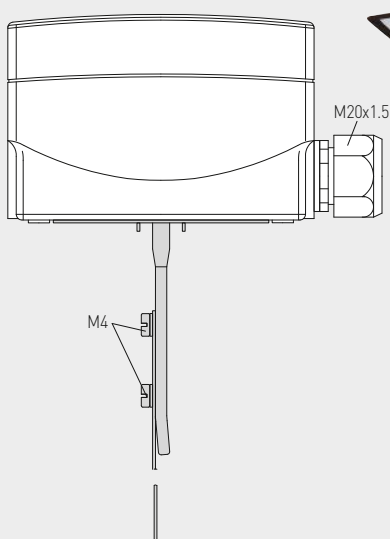
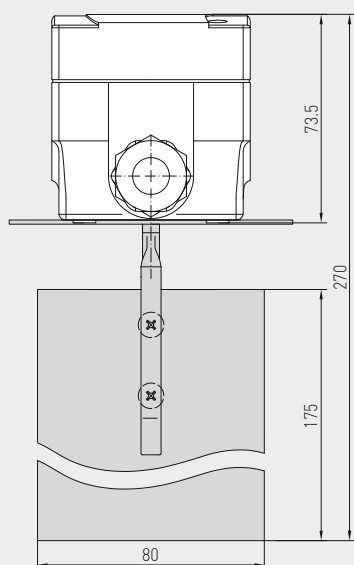
Vane switch, mechanical, with paddle,
with switching output



Dimensional drawing

WFS

WFS



RHEASREG® WFS Vane switch, mechanical, with paddle

Type / WG01	Switch-on value [m/s]		Switch-off value [m/s]		Item No.
	min.	max.	min.	max.	
WFS					
WFS-1E	2,5 (4,0)	9,2	1,0 (2,5)	8,0	1702-3020-0000-000
Note: Minimum values in brackets apply to wind speeds > 5 m/s					
Spare part					
PWFS-08	Spare paddle for WFS (Stainless steel vane)				7700-0010-2000-000

Flow monitors, mechanical, with paddle, with switching output

Mechanical paddle flow monitor **RHEASREG® SW** with switching output, in an impact-resistant plastic housing, with stainless-steel paddle, for flow monitoring of liquid and gaseous, non-aggressive media in pipes, hydraulic systems of ¾" through ½" to 8" diameter.

The flow sensor is used as a flow controller or low water alarm, e.g. for pumps in oil and cooling circuits, cooling systems, evaporators, compressors and heat exchangers, with brass or stainless-steel bodies.

TECHNICAL DATA

Switching capacity:	15 (8) A; 24...250 V AC, at 24 V AC min. 150 mA
Contact:	dustproof microswitch as potential-free single-pole changeover contact
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, colour traffic white (similar to RAL 9016)
Housing dimensions:	108 x 70 x 73.5 mm (Thor2)
Base body:	galvanised steel
Screwed socket:	brass or stainless steel (see table)
Paddle:	stainless steel V4A (1.4401)
Cable connection:	cable gland , plastic (M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm)
Housing temperature:	-40...+85 °C
Max. temperature of medium:	+120 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Protection class:	I (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity, EMC directive 2014/30/EU, low-voltage directive 2014/35/EU

FUNCTION

Monitor:	Contact COM-NO (red - yellow) breaks when flow rate drops to the preset value. Simultaneously, contact COM-NC (red - blue) closes and can be used as signal contact. Device is factory-set to the minimum switch-off value, which can be increased by turning the range adjusting screw clockwise.
Installation:	vertical in horizontal pipes, tee R x" according to DIN 2950, min. smoothing distance = 5 x pipe diameter upstream and downstream of paddle

Table of switching values

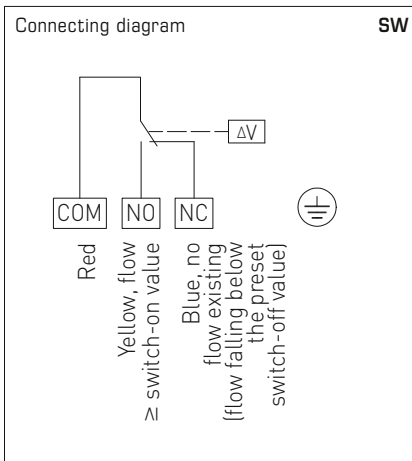
Pipe Ø DN (inches)	Paddle combination PSW-09	Factory Setting OFF / ON (m ³ /h)	Max. Setting OFF / ON (m ³ /h)
SW-1 / SW-2			
1"	1	0.6 / 1.0	2.0 / 2.1
1 ¼"	1	0.8 / 1.3	2.8 / 3.0
1 ½"	1	1.1 / 1.7	3.7 / 4.0
2"	1, 2	2.2 / 3.1	5.7 / 6.1
2 ½"	1, 2	2.7 / 4.0	6.5 / 7.0
3"	1, 2, 3	4.3 / 6.2	10.7 / 11.4
4"	1, 2, 3	11.4 / 14.7	27.7 / 29.0
5"	1, 2, 3, 4	6.1 / 8.0	17.3 / 18.4
	1, 2, 3	22.9 / 28.4	53.3 / 55.6
6"	1, 2, 3, 4	9.3 / 12.9	25.2 / 26.8
	1, 2, 3	35.9 / 43.1	81.7 / 85.1
8"	1, 2, 3, 4	12.3 / 16.8	30.6 / 32.7
	1, 2, 3	72.6 / 85.1	165.7 / 172.5
8"	1, 2, 3, 4	38.6 / 46.5	90.8 / 94.2
SW-3 / SW-4			
½"	—	0.174 / 0.48	0.846 / 0.948
¾"	—	0.138 / 0.408	0.768 / 0.858



SW

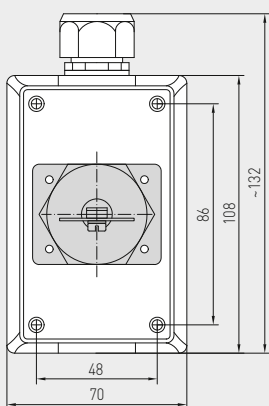
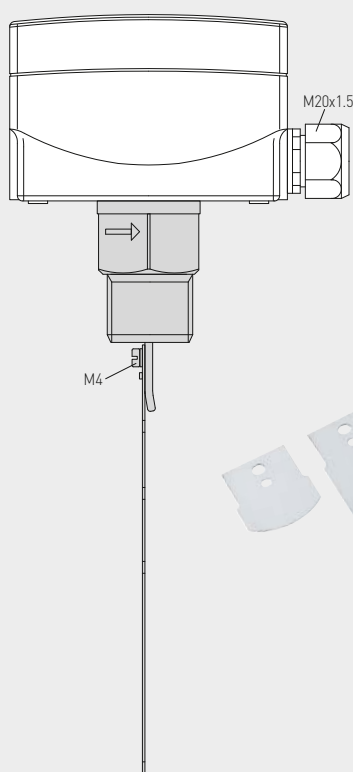
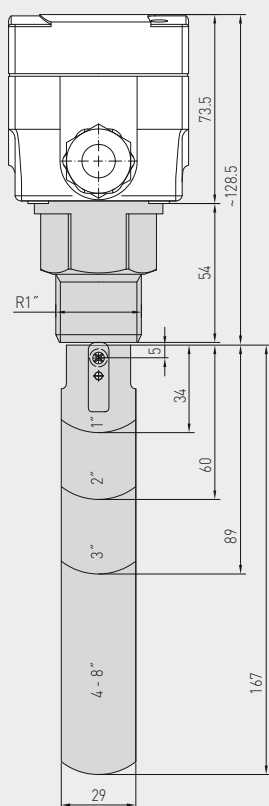
SW-3E
SW-4E

Incl. attached Tee Fitting
according to DIN 2950



Dimensional drawing

SW
PSW-09



PSW-09

Set of stainless steel
paddles (Spare part)

Pipe diameters with paddle combinations

Pipe Ø DN (inches)	(mm)	Paddle combination PSW-09
½"	15 mm	– (SW-3E incl. Tee Fitting)
¾"	20 mm	– (SW-4E incl. Tee Fitting)
1"	25 mm	1
1 ¼"	32 mm	1
1 ½"	40 mm	1
2"	50 mm	1, 2
2 ½"	65 mm	1, 2
3"	80 mm	1, 2, 3
4"	100 mm	1, 2, 3 plus 4 (shorten to 92 mm)
5"	125 mm	1, 2, 3 plus 4 (shorten to 117 mm)
6"	150 mm	1, 2, 3 plus 4 (shorten to 143 mm)
8"	200 mm	1, 2, 3 plus 4 (unshortened)

RHEASREG® SW Flow monitors, mechanical, with paddle

Type/ WG01	Pipe Ø DN	Max. Operating Pressure PN max	Medium	(Contacting Parts Made of)	Incl. attached Tee Fitting according to DIN 2950	Item No.
SW						
SW-1E	1" - 8"	11 bar	normal	(brass)	–	1702-3011-0000-000
SW-2E	1" - 8"	30 bar	aggressive	(stainless steel V4A)	–	1702-3012-0101-000
SW-3E	½"	11 bar	normal	(brass)		1702-3013-0031-000
SW-4E	¾"	11 bar	normal	(brass)		1702-3014-0041-000
Spare part						
PSW-09	Set of stainless steel paddles, 4 pieces, pipe Ø 1" - 8", for SW-1E and SW-2E (included in the scope of delivery)					7700-0010-1000-000



Accessories

S+S added value –
smart supplements, always ahead

Take advantage of our comprehensive range of accessories, which can be used together with our entire product portfolio. This keeps you always a step ahead, and best of all: If you buy and stock up, you will also save on the price.

Our standard devices normally differ in type of design and sensors. Depending on the application, you can install S+S accessories directly on site.





IMMERSION SLEEVES & ACCESSORIES



Immersion sleeves

TH08	Immersion sleeves for temperature sensors	644
TH	Immersion sleeves for temperature sensors	646
THR	Immersion sleeves for temperature controllers	648
THE	Immersion sleeves for sleeve sensors	650

Mounting accessories

MFT-20-K	Mounting flange, plastic	652
MF-xx-K	Mounting flange, plastic	652
MF-xx-M	Mounting flange, metal	653
KRD-04	Capillary tube gland bracket, plastic	652
MK-xx	Mounting brackets	653
ESSH	Welding protection sleeve	654
KVSS / KVST	Clamp connections	654
TH-Adapter-HW	Immersion sleeve adapter (Honeywell / CentraLine)	654

Accessories for differential pressure switches

ASD-06	Connection set	655
ASD-07	Connection nipple (90°)	655
ASS-UV	Connection hose, UV-resistant	655
DAL	Pressure outlet	655
DS-MW	Mounting bracket, sheet steel	655

Protection hoods

WS-01	Sun and ball-impact protection hood	656
WS-03	Weather and sun protection hood (Tyr 2)	656
WS-04	Weather and sun protection hood (Tyr 1)	656

Spare parts, small parts

SF-xx	Sinter filters, replaceable	657
PSW-09	Stainless steel paddle (SW)	657
PWFS-08	Stainless steel vane (WFS)	657
WH-20	Wall holder (KH)	657
HS-Adapter	Universal holder for small housing (top hat rails)	657
Modbus-Y	Y-adapter for cable gland	657
SPB-1	Strap for surface-contact sensor	657
WLP-1	Heat-conductive paste, silicone-free	657

Special accessories for plug-in connectors

Connection accessories, A-coded, 5-pin or 12-pin → [Online shop](#)
 Connection accessories, EtherCATP-coded, 4-pin → [Online shop](#)

Miscellaneous

Optional services, single services	658
Custom-made products	659

THERMASGARD® TH 08

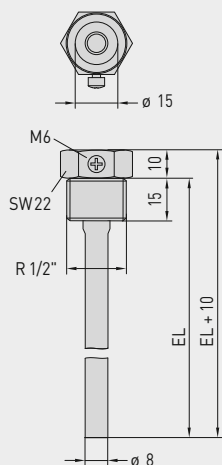
Immersion sleeves made of stainless steel or brass,
for temperature sensors and measuring transducers

TF43, TM43, TF65, TM65, TM65-Modbus (Tyr 1)



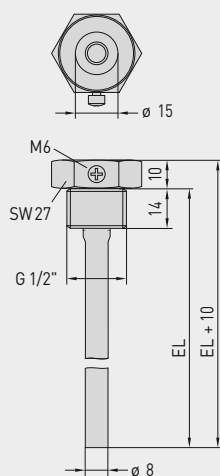
S+S REGELTECHNIK

Dimensional drawing
[mm]

TH08-MS-G xx**TH08-MS-G xx**

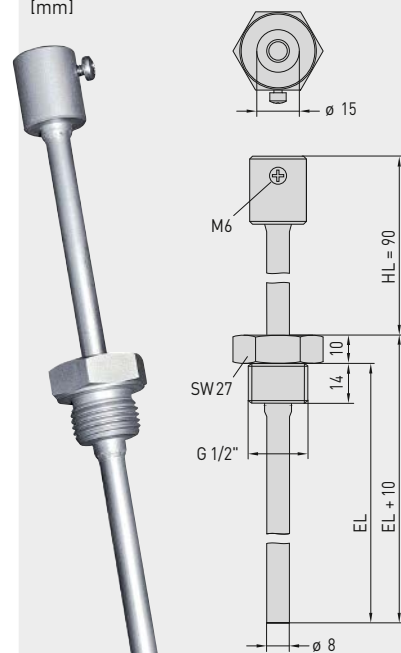
Immersion sleeve,
polished brass
thread-sealing, conical,
according to DIN 10226

Dimensional drawing
[mm]

TH08-VA xx**TH08-VA xx**

Immersion sleeve,
stainless steel V4A (1.4571)
flat sealing, cylindrical,
according to DIN 228

Dimensional drawing
[mm]

TH08-VA xx/90**TH08-VA xx/90**

Immersion sleeve,
stainless steel V4A (1.4571)
with neck tube
flat sealing, cylindrical,
according to DIN 228

THERMASGARD® TH 08 Immersion sleeve Ø 8 mm

Type / WG01	p _{max} (static)	T _{max}	Inserted length (EL)	Item No.
TH08-MS-G xx	polished brass			Ø 8 x 0.75 mm
TH08-MS-G 50MM	10 bar	+150 °C	50 mm	7100-0017-0010-132
TH08-MS-G 100MM	10 bar	+150 °C	100 mm	7100-0017-0020-132
TH08-MS-G 150MM	10 bar	+150 °C	150 mm	7100-0017-0030-132
TH08-MS-G 200MM	10 bar	+150 °C	200 mm	7100-0017-0040-132
TH08-MS-G 250MM	10 bar	+150 °C	250 mm	7100-0017-0050-132
TH08-MS-G 300MM	10 bar	+150 °C	300 mm	7100-0017-0060-132
TH08-MS-G 350MM	10 bar	+150 °C	350 mm	7100-0017-0070-132
TH08-MS-G 400MM	10 bar	+150 °C	400 mm	7100-0017-0080-132
TH08-VA xx	Stainless steel V4A (1.4571)			Ø 8 x 0.75 mm
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132
TH08-VA xx/90	Stainless steel V4A (1.4571), with neck tube (90mm)			Ø 8 x 0.75 mm
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132

Note: Inner diameter of socket 15.0 mm

INSTRUCTIONS FOR PLANNING AND INSTALLATION

The approaching flow causes the protective tube to vibrate.

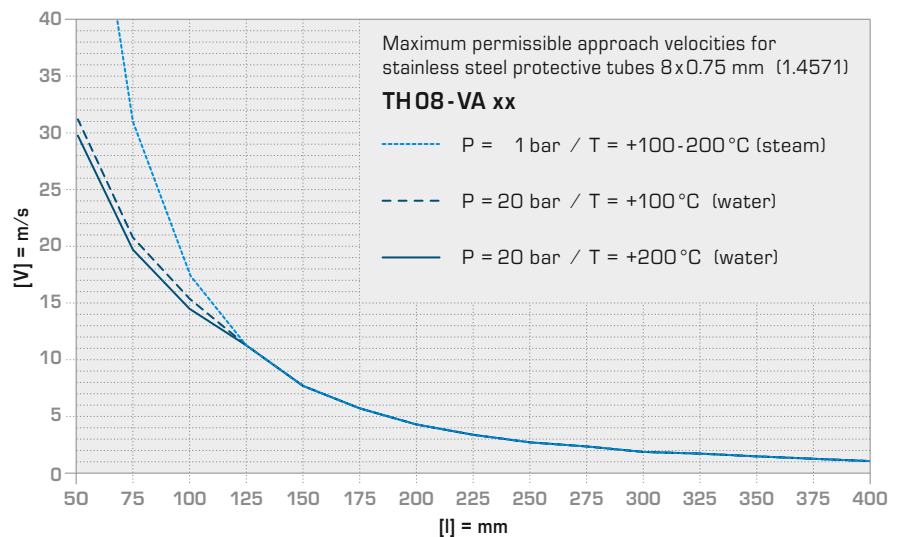
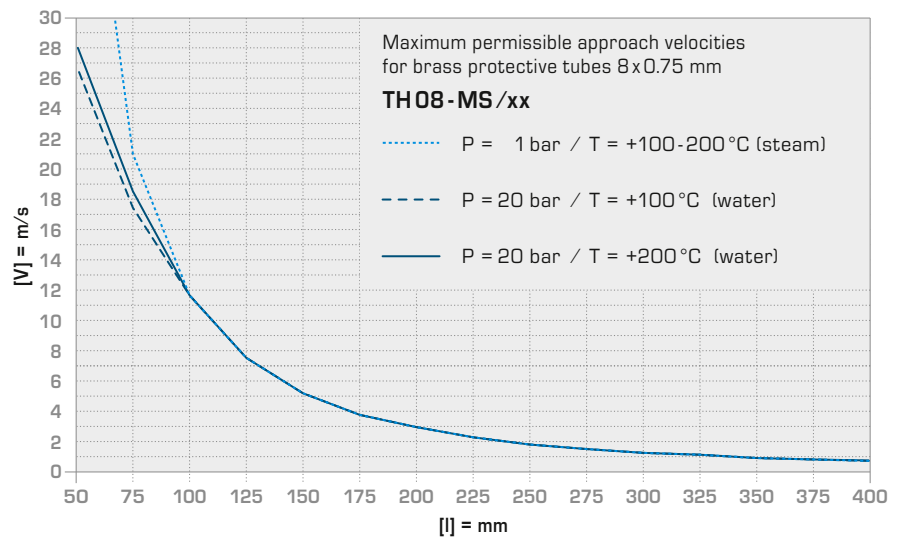
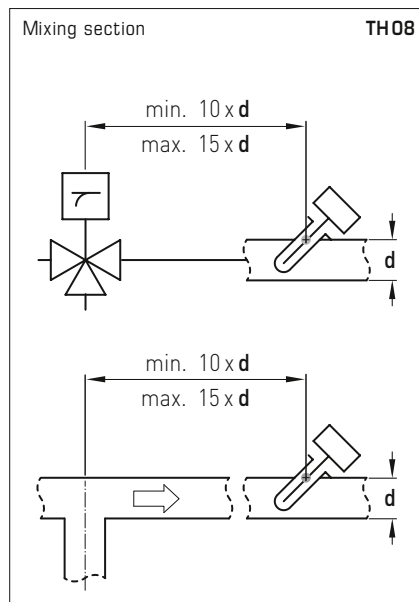
If the specified approach velocity is exceeded even by a marginal amount, a negative impact on the protective tube's service life may result (material fatigue).

Please observe permissible approach velocities for stainless steel protective tubes (see graph **TH08-VA**) as well as for brass protective tubes (see graph **TH08-MS**).

Discharge of gases and pressure surges must be avoided as they have a negative influence on the service life and may damage the protective tubes irreparably.

MIXING SECTION

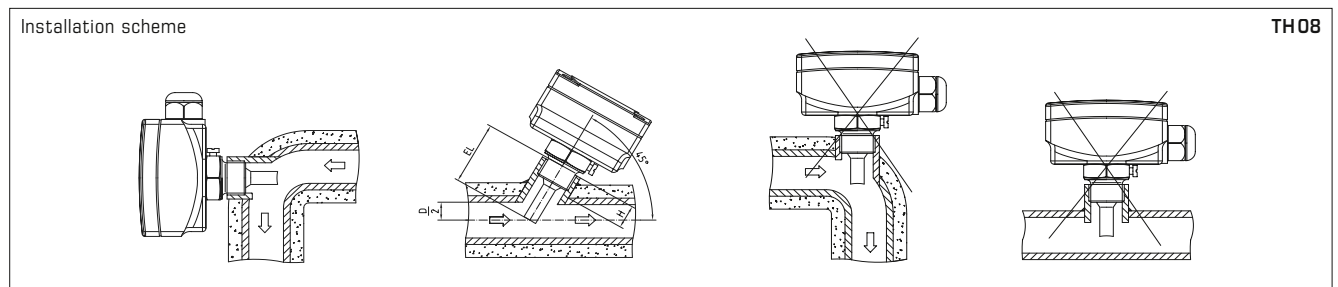
After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.



BRASS OR STAINLESS STEEL

Uncompromising quality and safety are also paramount in the design of the accessory from S+S. This is why our metal immersion sleeves for duct sensors are made using either brass or stainless steel. Brass is an alloy consisting mainly of copper and zinc, which give it mechanical strength, heat resistance and thermal conductivity, among other characteristics. This is the material of choice for most standard applications.

Highest protection against corrosion is provided by immersion sleeves made of stainless steel. Among the available qualities, we chose VA 1.4571 or AISI 316 Ti, a high-grade austenite specialty combining chromium, nickel and molybdenum with an extra titanium content. The alloy has a proven fit particularly in the design of chemical process equipment and technical instruments as well as in waste gas and water treatment. Its corrosion resistance also includes chlorides or salts and more aggressive acids, such as hydrochloric acid (HCl).



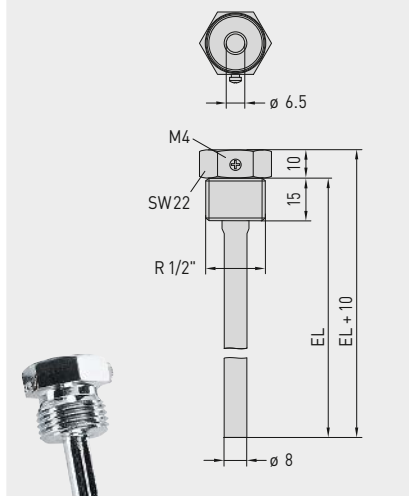
THERMASGARD® TH

Immersion sleeves made of stainless steel or brass, nickel-plated/galvanised, for temperature sensors and measuring transducers TF 54/TM 54 (form B)



S+S REGELTECHNIK

Dimensional drawing TH-MS/xx

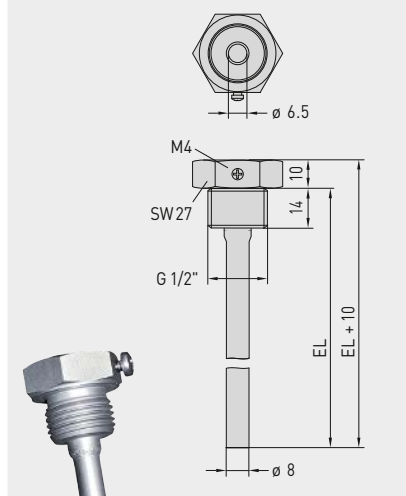


TH-MS/xx

Immersion sleeve,
nickel-plated brass /
galvanised

thread-sealing, conical,
according to DIN 10226

Dimensional drawing TH-VA/xx

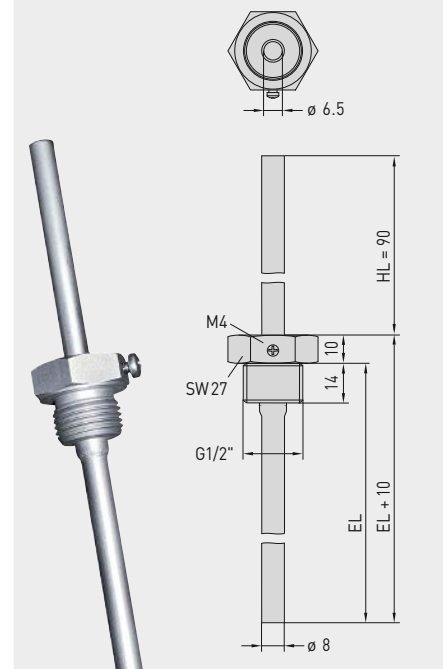


TH-VA/xx

Immersion sleeve,
stainless steel V4A (1.4571)

flat sealing, cylindrical,
according to DIN 228

Dimensional drawing TH-VA/xx/90



TH-VA/xx/90

Immersion sleeve,
stainless steel V4A (1.4571)
with neck tube

flat sealing, cylindrical,
according to DIN 228

THERMASGARD® TH Immersion sleeve Ø 8 mm

Type / WG01	p _{max} (static)	T _{max}	Inserted length (EL)	Item No.
TH-MS/xx	Brass nickel-plated /galvanised			Ø 8 x 0.75 mm
TH-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-001
TH-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-001
TH-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-001
TH-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-001
TH-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-001
TH-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-001
TH-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-001
TH-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-001
TH-VA/xx	Stainless steel V4A (1.4571)			Ø 8 x 0.75 mm
TH-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-001
TH-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-001
TH-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-001
TH-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-001
TH-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-001
TH-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-001
TH-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-001
TH-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-001
TH-VA/xx/90	Stainless steel V4A (1.4571), with neck tube (90mm)			Ø 8 x 0.75 mm
TH-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-2010-001
TH-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-2020-001
TH-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-2030-001
TH-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-2040-001
TH-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-2050-001
TH-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-2060-001

Note: Inner diameter of socket 6.5 mm

INSTRUCTIONS FOR PLANNING AND INSTALLATION

The approaching flow causes the protective tube to vibrate.

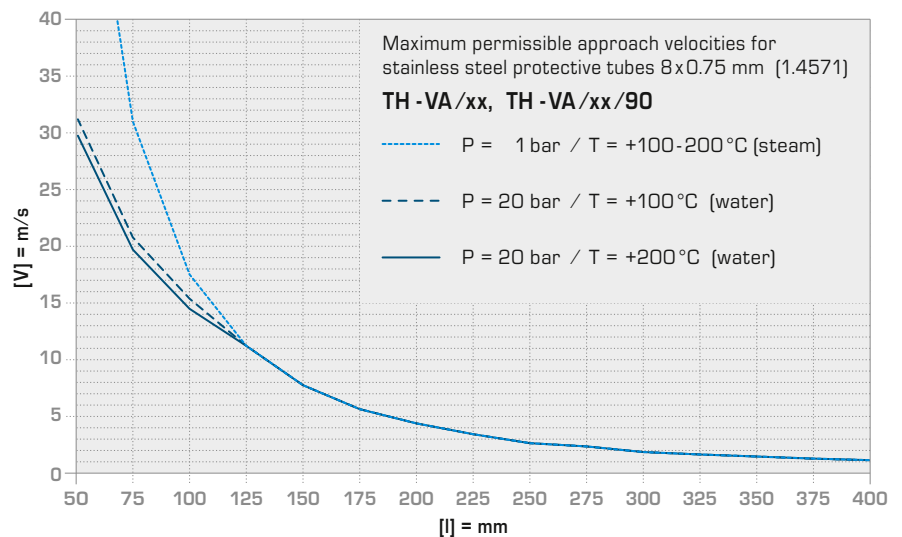
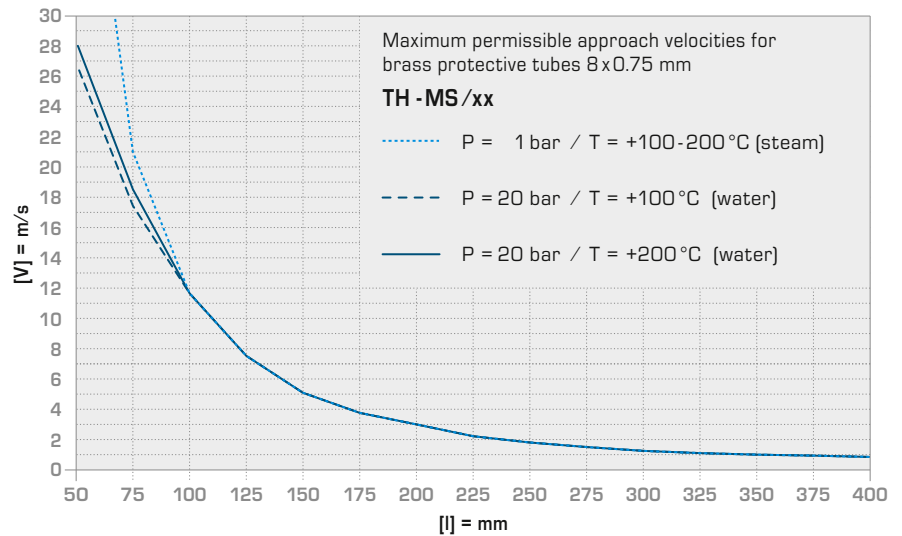
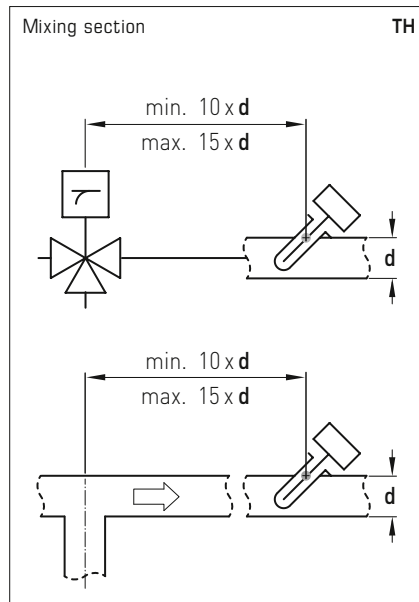
If the specified approach velocity is exceeded even by a marginal amount, a negative impact on the protective tube's service life may result (material fatigue).

Please observe permissible approach velocities for stainless steel protective tubes (see graph TH-VA) as well as for brass protective tubes (see graph TH-MS).

Discharge of gases and pressure surges must be avoided as they have a negative influence on the service life and may damage the protective tubes irreparably.

MIXING SECTION

After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.



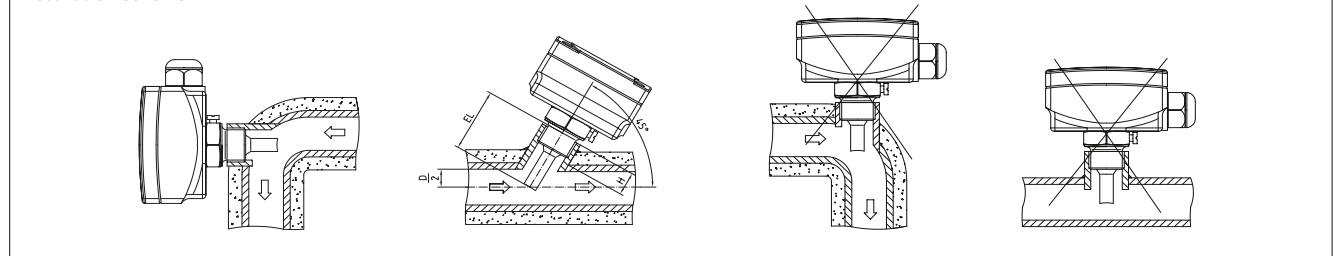
When Copper and Zinc are Not Enough

Uncompromising quality and safety are also paramount in the design of the accessory from S+S. This is why our metal immersion sleeves for duct sensors are made using either nickel plated brass or stainless steel. Brass is an alloy consisting mainly of copper and zinc, which provide good forming and machining properties, mechanical strength, temperature resistance and electrical conductivity.

In contrast to conventional products in the market, however, our brass immersion sleeves feature an additional nickel coating. This ensures their longterm corrosion resistance in minor aggressive media, from air and water to alkaline solutions and diluted acids. At the same time, the nickel layer prevents ingredients in thermally conductive compounds from stripping the copper and causing pitting.

Highest protection against corrosion is provided by immersion sleeves made of stainless steel. Among the available qualities, we chose VA 1.4571 or AISI 316 Ti, a high-grade austenite specialty combining chromium, nickel and molybdenum with an extra titanium content. The alloy has a proven fit particularly in the design of chemical process equipment and technical instruments as well as in waste gas and water treatment. Its corrosion resistance also includes chlorides or salts and more aggressive acids, such as hydrochloric acid (HCl).

Installation scheme

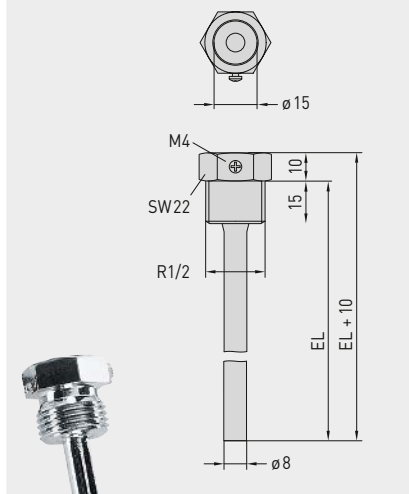


THERMASGARD® THR

Immersion sleeves made of stainless steel or brass, nickel-plated /galvanised,
for temperature controllers ETR (Thor 2)

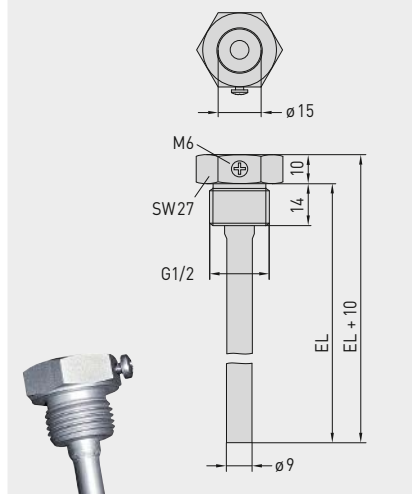


S+S REGELTECHNIK

Dimensional drawing **THR-MS-08/xx****THR-MS-08/xx**

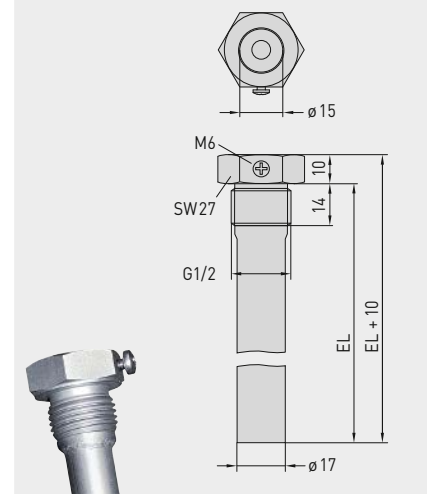
Immersion sleeve,
nickel-plated brass/
galvanised

thread-sealing, conical,
according to DIN 10226

Dimensional drawing **THR-VA-09/xx****THR-VA-09/xx**

Immersion sleeve,
stainless steel V4A [1.4571]

flat sealing, cylindrical,
according to DIN 228

Dimensional drawing **THR-VA-17/xx****THR-VA-17/xx**

Immersion sleeve,
stainless steel V4A [1.4571]

flat sealing, cylindrical,
according to DIN 228

When Copper and Zinc are Not Enough

Uncompromising quality and safety are also paramount in the design of the accessory from S+S. This is why our metal immersion sleeves for duct sensors are made using either nickel plated brass or stainless steel. Brass is an alloy consisting mainly of copper and zinc, which provide good forming and machining properties, mechanical strength, temperature resistance and electrical conductivity.

In contrast to conventional products in the market, however, our brass immersion sleeves feature an additional nickel coating. This ensures their longterm corrosion resistance in minor aggressive media, from air and water to alkaline solutions and diluted acids. At the same time, the nickel layer prevents ingredients in thermally conductive compounds from stripping the copper and causing pitting.

Highest protection against corrosion is provided by immersion sleeves made of stainless steel. Among the available qualities, we chose VA 1.4571 or AISI 316 Ti, a high-grade austenite specialty combining chromium, nickel and molybdenum with an extra titanium content. The alloy has a proven fit particularly in the design of chemical process equipment and technical instruments as well as in waste gas and water treatment. Its corrosion resistance also includes chlorides or salts and more aggressive acids, such as hydrochloric acid (HCl).

THERMASGARD® THR Immersion sleeve Ø 8 / 9 / 17 mm for **THERMASREG® ETR** (Thor 2)

Type / WG01	p _{max} (static)	T _{max}	Time Constant for Medium:			Inserted Length [EL]	Item No. Ø
			Air	Water	Oil		
THR-MS-08/xx	Brass nickel-plated /galvanised						Ø 8 x 0.5 mm
THR-MS-08/100	10 bar	+150 °C	106 s	18 s	53 s	100 mm	7100-0011-3022-000
THR-MS-08/150	10 bar	+150 °C	106 s	18 s	53 s	150 mm	7100-0011-3404-000
THR-MS-08/200	10 bar	+150 °C	106 s	18 s	53 s	200 mm	7100-0011-3403-000
THR-VA-09/xx	Stainless steel V4A (1.4571)						Ø 9 x 1.0 mm
THR-VA-09/100	25 bar	+150 °C	92 s	17 s	41 s	100 mm	7100-0012-3022-000
THR-VA-09/150	25 bar	+150 °C	92 s	17 s	41 s	150 mm	7100-0012-3032-000
THR-VA-09/200	25 bar	+150 °C	92 s	17 s	41 s	200 mm	7100-0012-3042-000
THR-VA-17/xx	Stainless steel V4A (1.4571)						Ø 17 x 1.0 mm
THR-VA-17/150	25 bar	+150 °C	–	45 s	55 s	150 mm	7100-0012-3033-000
THR-VA-17/200	25 bar	+150 °C	–	45 s	55 s	200 mm	7100-0012-3404-000
Ordering example:	THR-MS-08 / 100 (Brass immersion sleeve, Ø=8 mm, EL = 100 mm) THR-VA-09 / 150 (Stainless steel immersion sleeve, Ø=9 mm, EL = 150 mm) THR-VA-17 / 200 (Stainless steel immersion sleeve, Ø=17 mm, EL = 200 mm)						
Note:	inner diameter of socket 15.0 mm						

INSTRUCTIONS FOR PLANNING AND INSTALLATION

The approaching flow causes the protective tube to vibrate.

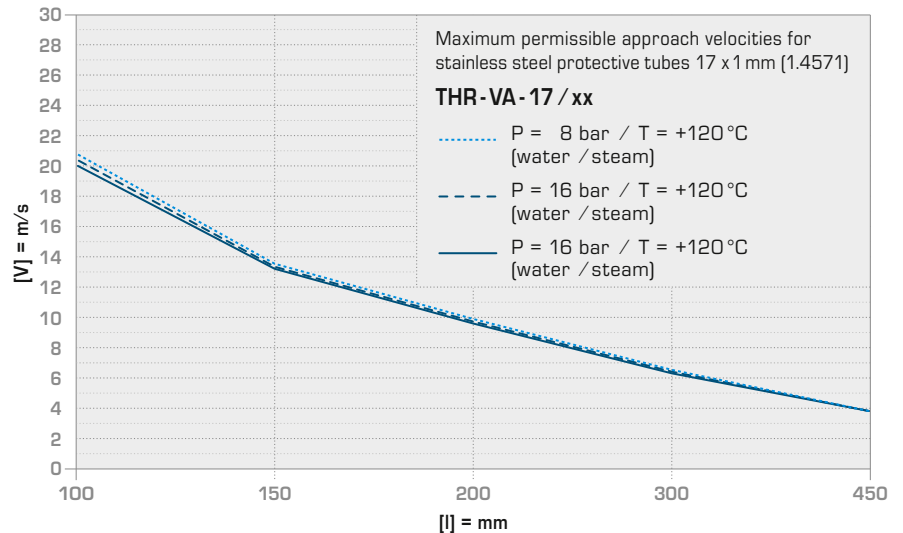
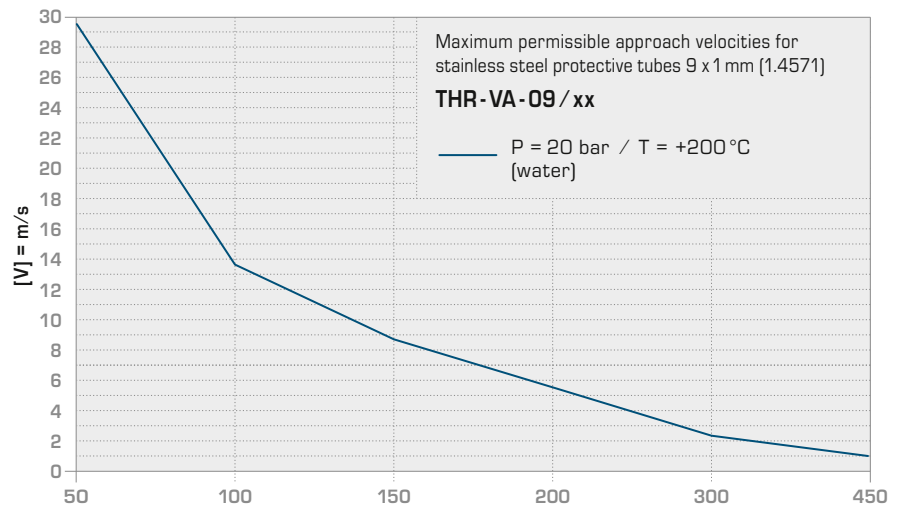
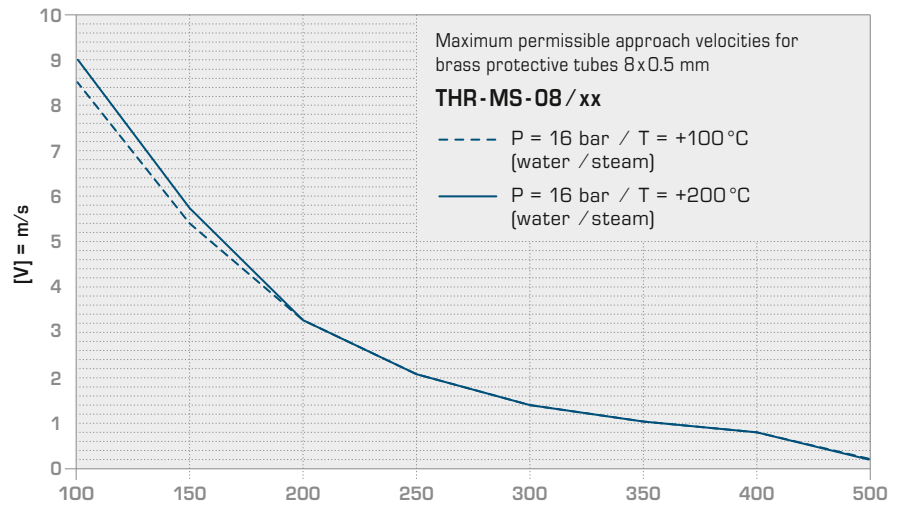
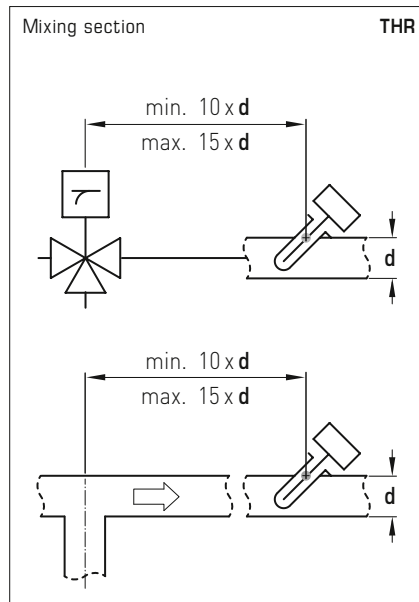
If the specified approach velocity is exceeded even by a marginal amount, a negative impact on the protective tube's service life may result (material fatigue).

Please observe permissible approach velocities for stainless steel protective tubes (see graph **THR-VA**) as well as for brass protective tubes (see graph **THR-MS**).

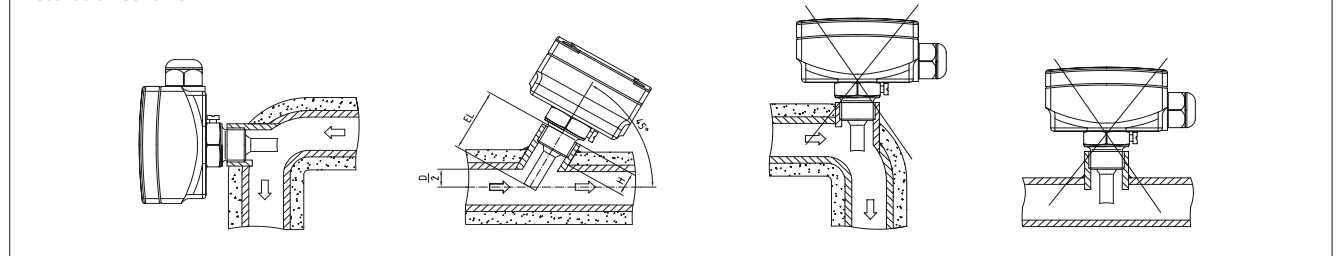
Discharge of gases and pressure surges must be avoided as they have a negative influence on the service life and may damage the protective tubes irreparably.

MIXING SECTION

After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.



Installation scheme



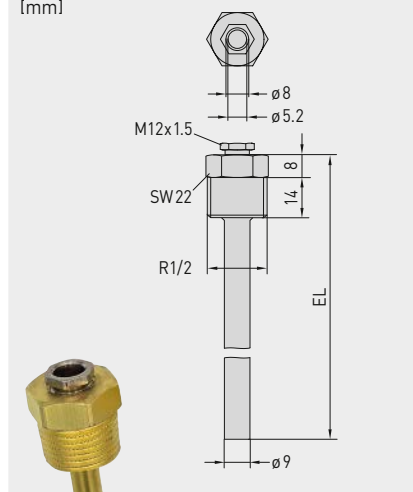
THERMASGARD® THE

Immersion sleeves made of stainless steel or brass,
with adjusting screw, for sleeve sensor HTF / HFTM

S+S REGELTECHNIK

Dimensional drawing
[mm]

THE -MS-G xx



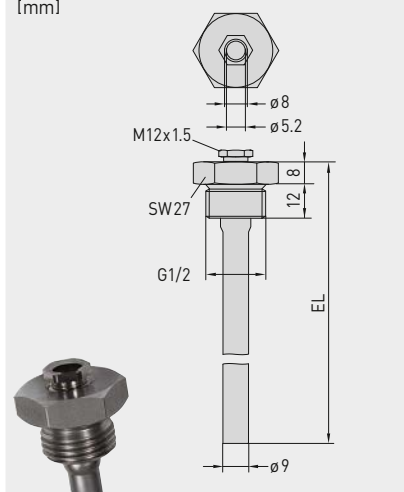
THE-MS-G xx

Immersion sleeve,
polished brass

with adjusting screw,
thread-sealing, conical,
according to DIN 10226

Dimensional drawing
[mm]

THE -VA xx



THE-VA xx

Immersion sleeve,
stainless steel V4A (1.4571)

with adjusting screw,
flat sealing, cylindrical,
according to DIN 228

THERMASGARD® THE Immersion sleeve Ø 9 mm for THERMASGARD® HTF / HFTM

Type / WG01	p _{max} (static)	T _{max}	Inserted Length (EL)	Item No.
THE-MS-G xx	polished brass			Ø 9 x 1.0 mm
THE-MS-G 50MM	16 bar	+130 °C	50 mm	7100-0017-6010-002
THE-MS-G 100MM	16 bar	+130 °C	100 mm	7100-0017-6020-002
THE-MS-G 150MM	16 bar	+130 °C	150 mm	7100-0017-6030-002
THE-MS-G 200MM	16 bar	+130 °C	200 mm	7100-0017-6040-002
THE-MS-G 250MM	16 bar	+130 °C	250 mm	7100-0017-6050-002
THE-VA xx	Stainless steel V4A (1.4571)			Ø 9 x 1.0 mm
THE-VA 50MM	40 bar	+200 °C	50 mm	7100-0012-6010-002
THE-VA 100MM	40 bar	+200 °C	100 mm	7100-0012-6020-002
THE-VA 150MM	40 bar	+200 °C	150 mm	7100-0012-6030-002
THE-VA 200MM	40 bar	+200 °C	200 mm	7100-0012-6040-002
THE-VA 250MM	40 bar	+200 °C	250 mm	7100-0012-6050-002
THE-VA 300MM	40 bar	+200 °C	300 mm	7100-0012-6060-002
THE-VA 400MM	40 bar	+200 °C	400 mm	7100-0012-6080-002
Ordering example:	THE-MS-G 150MM (Brass immersion sleeve, Ø = 9 mm, EL = 150 mm) THE-VA 150MM (Stainless steel immersion sleeve, Ø = 9 mm, EL = 150 mm) Other inserted lengths on request			
Note:	inner diameter of socket 5.2 mm, with adjusting screw M12 x 1.5			

INSTRUCTIONS FOR PLANNING AND INSTALLATION

The approaching flow causes the protective tube to vibrate.

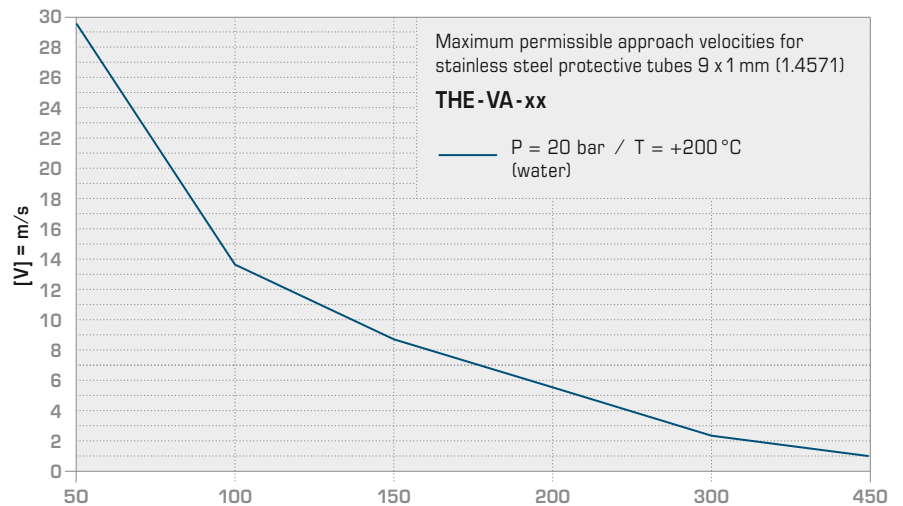
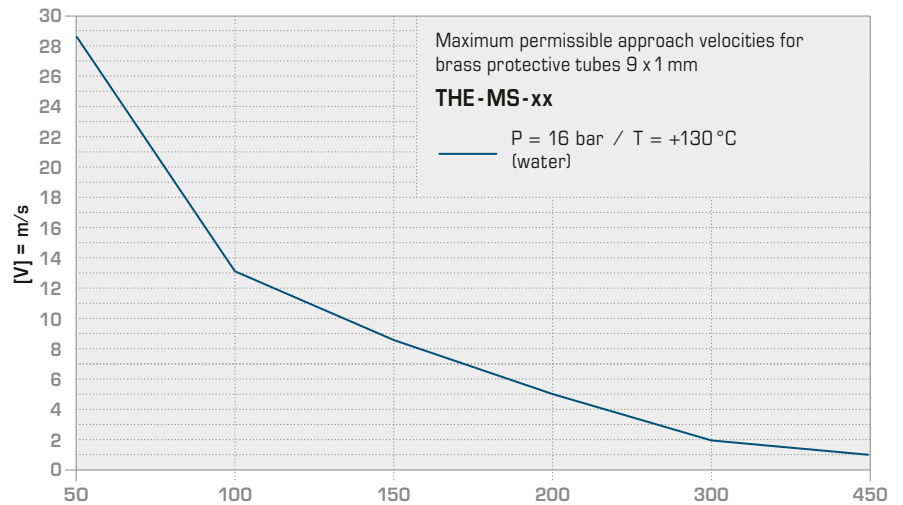
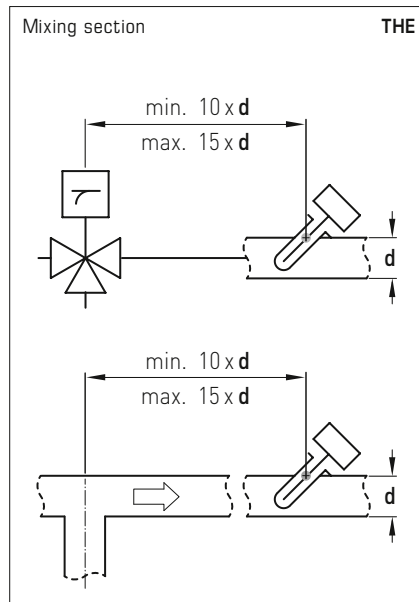
If the specified approach velocity is exceeded even by a marginal amount, a negative impact on the protective tube's service life may result (material fatigue).

Please observe permissible approach velocities for stainless steel protective tubes (see graph **THE-VA**) as well as for brass protective tubes (see graph **THE-MS**).

Discharge of gases and pressure surges must be avoided as they have a negative influence on the service life and may damage the protective tubes irreparably.

MIXING SECTION

After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.

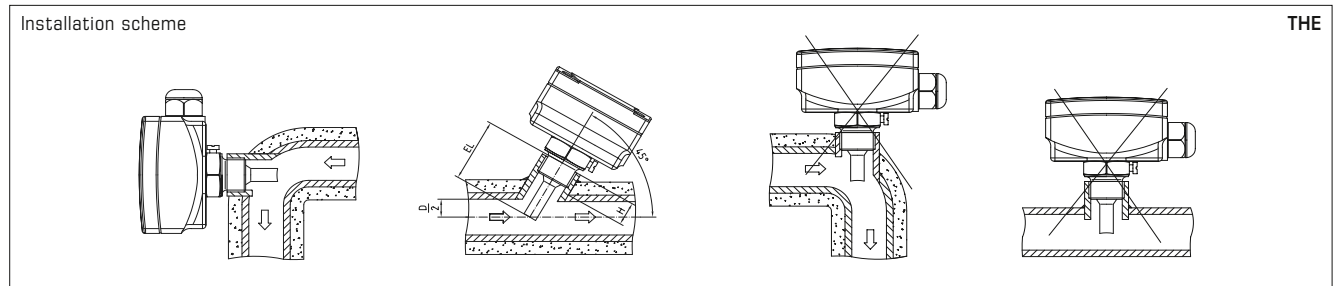


BRASS OR STAINLESS STEEL

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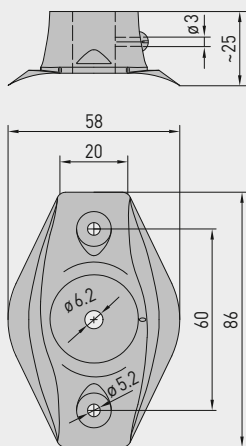
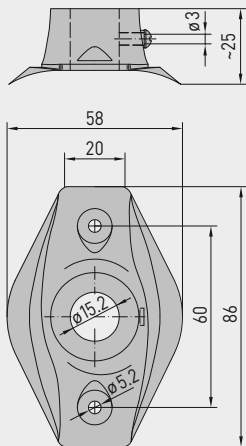
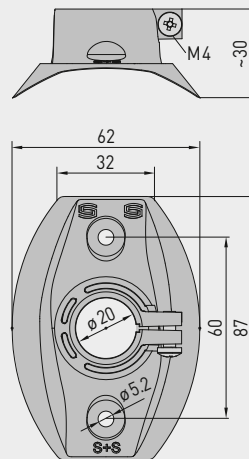
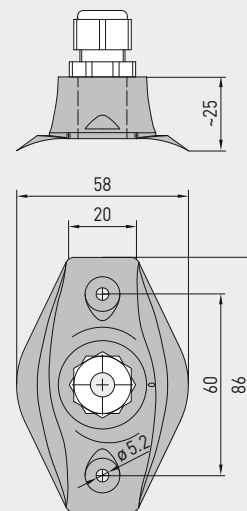
Installation scheme



Mounting flange, plastic

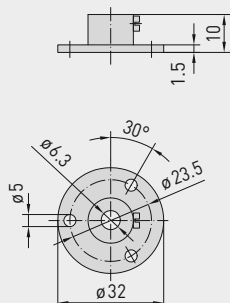
Capillary tube gland bracket

S+S REGELTECHNIK

Dimensional drawing **MF-06-K**Dimensional drawing **MF-15-K**Dimensional drawing **MFT-20-K**Dimensional drawing **KRD-04****MF-06-K**Mounting flange,
plastic**MF-15-K**Mounting flange,
plastic**MFT-20-K**Mounting flange,
plastic**KRD-04**Capillary tube gland
bracket, plastic

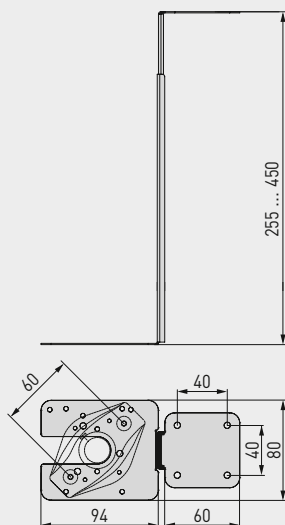
Type / WG01	Mounting flange, plastic	Tube Gland	T _{max}	Item No.
MF-xx-K	for metal protective tubes!			
MF-06-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for rod sensors MWTF/MWTM	Ø 6.2 mm	+100 °C	7100-0030-1000-000
MF-10-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for duct air flow monitors KLGF/KLSW	Ø 10.2 mm	+100 °C	7100-0031-1000-000
MF-14-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for duct humidity sensors KFF/KFTF and pendulum room humidity sensors RPFF/RPFTF as well as for duct air flow monitors KLGF/KLSW	Ø 14.2 mm	+100 °C	7100-0030-2000-000
MF-15-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for temperature sensors TF (series Tyr 1) and temperature measuring transducers TM (series Tyr 1)	Ø 15.2 mm	+100 °C	7100-0032-0000-000
MF-20-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for duct sensors KH	Ø 20.2 mm	+100 °C	7100-0030-4000-000
MFT-20-K	for PLEUROFORM multi-channel pipes!			
MFT-20-K	Mounting flange, plastic, approx. 62 x 87 x 30 mm for duct sensors (series Tyr 1 / Tyr 2)	Ø 20 mm	+100 °C	7000-0031-0000-000

Type / WG01	Capillary tube gland bracket	Item No.
KRD-04	Capillary tube gland bracket, plastic, approx. 58 x 86 x 25 mm (M 16 x 1.5) for frost protection thermostats (e.g. for air ducts) and rod sensors MWTF/MWTM	7100-0030-7000-000

Dimensional drawing **MF-06-M**


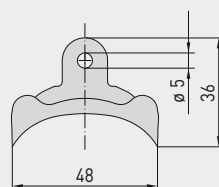
MF-06-M

Mounting flange, metal


Dimensional drawing **KMW-F**


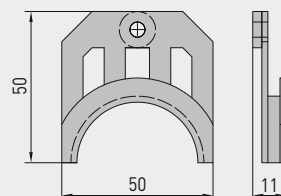
KMW-F

Duct mounting angle, metal


Dimensional drawing **MK-05-M**


MK-05-M

Galvanised steel mounting clamps


Dimensional drawing **MK-05-K**


MK-05-K

Mounting clamps, plastic



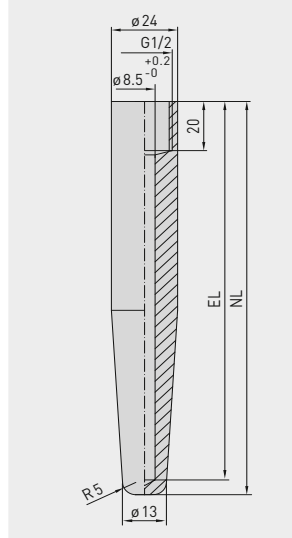
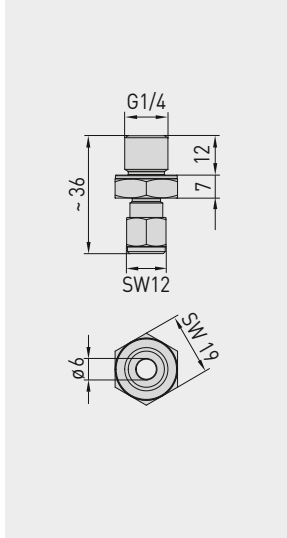
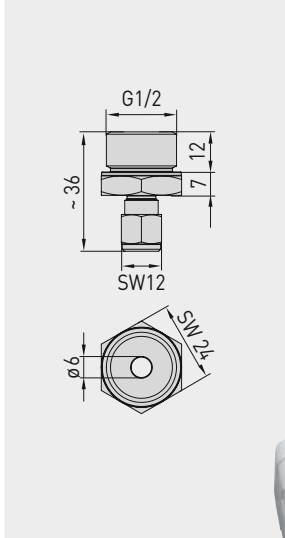
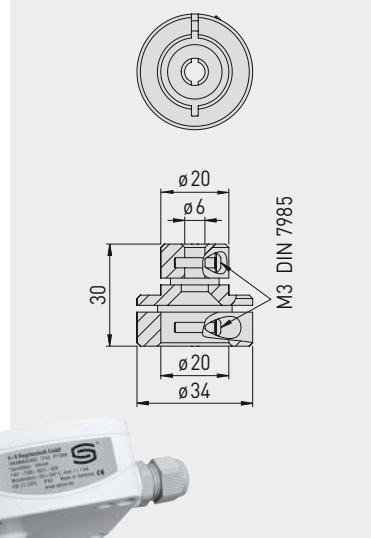
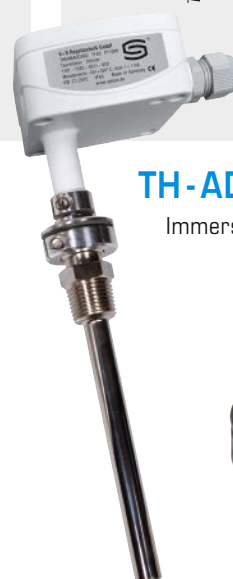
Type / WG01	Mounting flange, metal	Tube Gland	T _{max}	Item No.
MF-xx-M	for metal protective tubes!			
MF-06-M	Mounting flange, metal (galvanised steel), Ø 32 mm, for temperature sensors TF (form B) temperature measuring transducers TM (form B), rod sensors MWTF / MWTM	Ø 6.3 mm	+700 °C	7100-0030-5000-100

Type / WG01	Duct mounting angle, metal	Item No.
KMW-F	flexible for duct sensors	
KMW-F 450MM	for installing duct sensors in the ventilation duct or ventilation unit material: galvanised sheet steel, DX51D+Z 275 MB-C, t=1,0mm adjustable from 255...450mm, incl. fixing screws	7100-0030-0100-450

Type / WG01	Mounting clamps	Item No.
MK-05-M	Galvanised steel mounting clamps (6 pieces) for rod sensors MWTF / MWTM	7100-0034-0000-000
MK-05-K	Plastic mounting clamps (6 pieces) for frost protection thermostats	7100-0034-1000-000

Mounting accessories for Immersion sensor

S+S REGELTECHNIK

Dimensional drawing **ESSH****ESSH**Welding protective
sleeveDimensional drawing **KVSS****KVSS**Clamp union
with cutting ringDimensional drawing **KVST****KVST**Clamp union
with clamp ringDimensional drawing **TH-ADAPTER-HW****TH-ADAPTER-HW**Immersion sleeve adapter,
metal

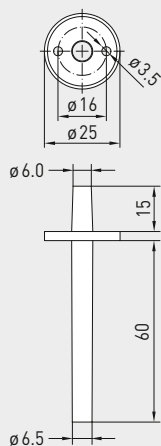
Type / WG01	Welding protective sleeve	Item No.
	Welding protecting sleeves, G 1/2" straight internal pipe thread, stainless steel V4A (1.4571), other materials on request,	
ESSH 100MM	for immersion sleeves (EL) = 100 mm, P _{max} = 100 bar	7100-0052-0020-001
ESSH 150MM	for immersion sleeves (EL) = 150 mm, P _{max} = 100 bar	7100-0052-0030-001
ESSH 200MM	for immersion sleeves (EL) = 200 mm, P _{max} = 100 bar	7100-0052-0040-001

Type / WG01	Clamp union	Item No.
KVST	Clamp union with clamp ring PTFE, Ø 6 mm	7100-0032-0110-000
KVSS	Clamp union with cutting ring VA, Ø 6 mm	7100-0032-1000-000

Type / WG01	Immersion sleeve adapter, metal	Item No.
TH-ADAPTER-HW	Metal immersion sleeve adapter (adaptation Ø 20 mm / Ø 6 mm) for mounting S+S temperature sensors from the TF and TM series in immersion sleeves by Honeywell / CentraLine of the types VFFT, VFL, VFNT, VFLN	7100-0037-0001-000

Dimensional drawing

ASD-06



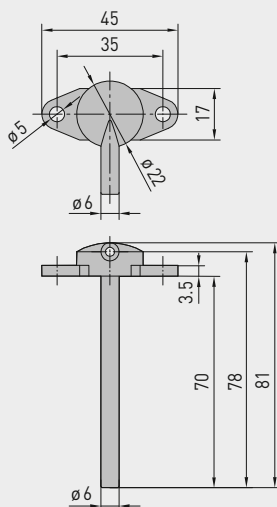
ASD-06

Connection set
(straight nipples)



Dimensional drawing

ASD-07



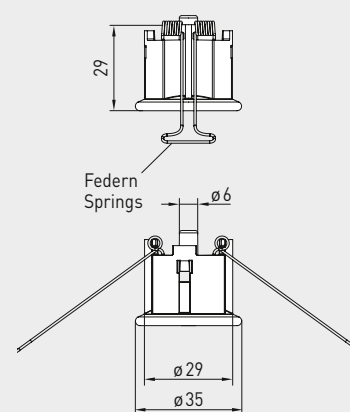
ASD-07

Connection nipples
(at 90 degree angle)



Dimensional drawing

DAL



DAL

Pressure outlet



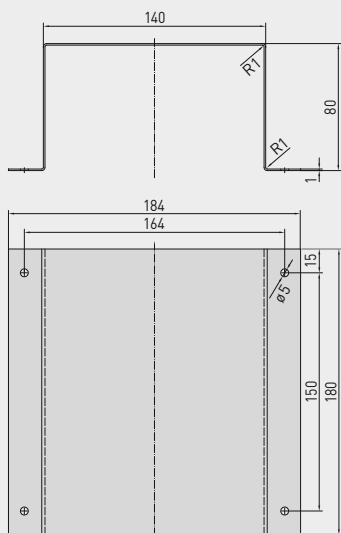
Type / WG01	Accessories for differential pressure switches	Item No.
ASD-06	Connection set consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose (soft, UV-resistant), 4 Philips head screws (no pre-drilling required)	7100-0060-3000-000
ASD-07	2 connection nipples (at 90 degree angle) made of ABS	7100-0060-7000-000
ASS-UV 100M	Connecting hose, UV-resistant, Ø 6 mm, 1 roll (100 m)	7100-0060-3101-000
DAL-01	Pressure outlet for ceiling and in-wall installation, colour pure white (similar to RAL 9010) as a pressure reference point, Ø 6 mm	7300-0060-3000-001
DAL-02	for hose attachment, Ø 6 mm	7300-0060-3000-100
DAL-03	as a pressure reference point, with sinter filter made of stainless steel V4A (1.4404), Ø 6 mm	7300-0060-3000-200

Type / WG01	Accessories for differential pressure switches DS1, DS2	Item No.
DS-MW-Z	Sheet steel mounting angle in Z-Form	7100-0063-0000-000
DS-MW-L	Sheet steel mounting angle in L-Form	7100-0063-1000-000
DS-MW-U	Sheet steel mounting angle in U-Form	7100-0060-9000-000

Protection hoods

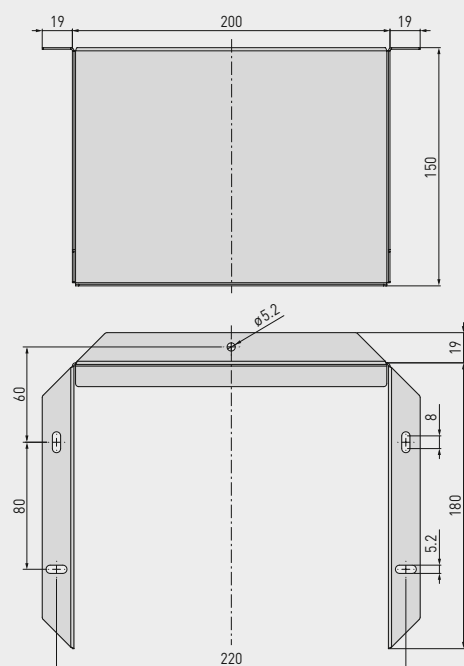
Dimensional drawing

WS-01



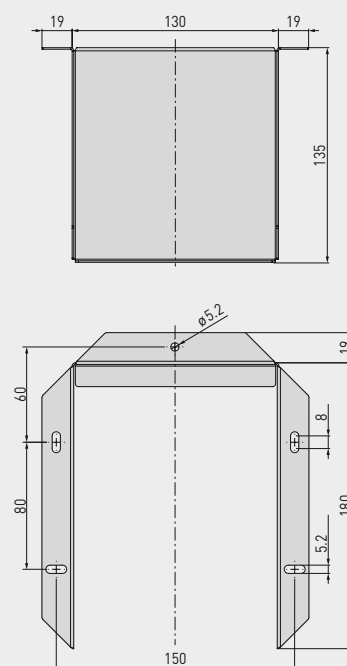
Dimensional drawing

WS-03



Dimensional drawing

WS-04



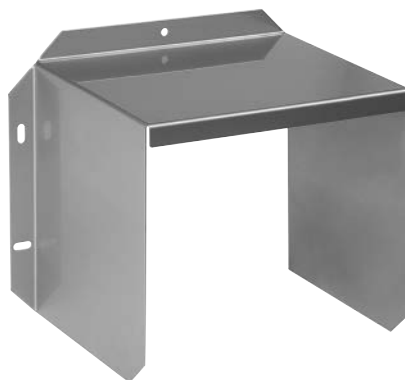
WS-01

Sun and ball-impact protection hood



WS-03

Weather and sun protection hood

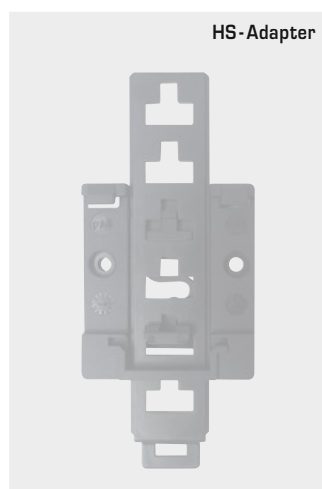


WS-04

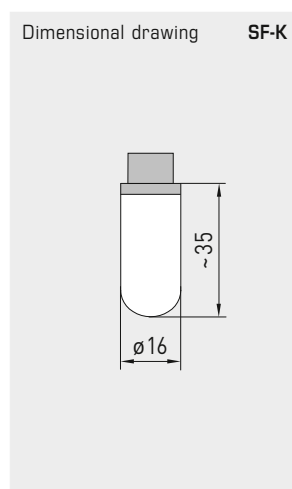
Weather and sun protection hood



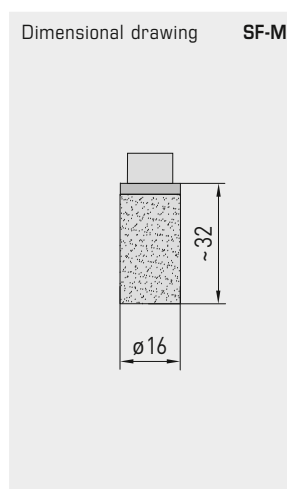
Type / WG01	Protection hoods	Item No.
WS-01	Sun and ball-impact protection hood, 184 x 180 x 80 mm, stainless steel V2A (1.4301)	7100-0040-2000-000
WS-03	Weather and sun protection hood, 200 x 180 x 150 mm, stainless steel V2A (1.4301)	7100-0040-6000-000
WS-04	Weather and sun protection hood, 130 x 180 x 135 mm, stainless steel V2A (1.4301)	7100-0040-7000-000



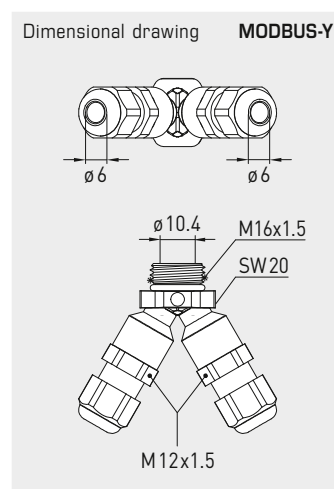
HS-Adapter



Dimensional drawing SF-K



Dimensional drawing SF-M



Dimensional drawing MODBUS-Y

HS-Adapter

Universal holder
for small housing
on top-hat rails

SF-K

Plastic sinter filter

SF-M

Metal sinter filter

MODBUS-Y

Y-adapter as a bypass
for bus connection



Type / WG01	Spare parts, small parts and special accessories	Item No.
SF-K	Plastic sinter filter, Ø 16 mm, L = 35 mm, exchangeable for humidity sensors	7000-0050-2310-000
SF-M	Metal sinter filter, Ø 16 mm, L = 32 mm, exchangeable, stainless steel V4A (1.4404) for humidity sensors	7000-0050-2200-100
PSW-09	1 set of stainless steel paddles 1-8" (4 pieces), 29 x 34/60/89/157 mm for flow monitors SW	7700-0010-1000-000
PWFS-08	Stainless steel vane for vane switch WFS	7700-0010-2000-000
WH-20	Wall bracket for duct hygrometers KH	1200-0010-4000-000
HS-ADAPTER	Universal holder for small housings made from plastic PA6, black, for installation on 35mm top-hat rails, incl. fixing screws	7100-0038-0000-000
SPB1	Strap for surface-contact sensors	7100-0035-0000-000
WLP-1	Heat-conductive paste, silicone-free (2 ml)	7100-0060-1000-000
MODBUS-Y	Y-adapter for cable gland M16 x 1.5 (on 2 x M12 x 1.5), made of plastic	7000-0005-0002-100

Optional services

Individual components / WG01		Item No.
FET		7100-0022-4000-000
KTY 81-210		7100-0022-0000-000
LM235Z	(TCR = 10 mV / K; 2.73 V at 0°C), KP10	7100-0022-1000-000
NI1000	(according to DIN EN 43760, class B, TKR = 6180 ppm / K)	7100-0020-9000-000
NI1000TK5000	(according to DIN EN 43760, class B, TKR = 5000 ppm / K), LG-Ni 1000	7100-0021-0000-000
NTC 1,8 KOHM	NTC 1.8 K	7100-0021-2000-000
NTC 10 KOHM PRECON	NTC 10 K Precon	7100-0021-9000-000
NTC 20 KOHM	NTC 20 K	7100-0021-6000-000
NTC 30 KOHM	NTC 30 K	7100-0021-7000-000
NTC 50 KOHM	NTC 50 K	7100-0021-8000-000
PT100 KLASSE B	(according to DIN EN 60751, class B)	7100-0020-1000-000
PT100 1/2 DIN	(according to DIN EN 60751, class B)	7100-0020-2000-000
PT100 1/3 DIN	(according to DIN EN 60751, class B)	7100-0020-3000-000
PT1000 KLASSE B	(according to DIN EN 60751, class B)	7100-0020-5000-000
PT1000 1/2 DIN	(according to DIN EN 60751, class B)	7100-0020-6000-000
PT1000 1/3 DIN	(according to DIN EN 60751, class B)	7100-0020-7000-000
PT1000 1/10 DIN	(according to DIN EN 60751, class B)	7100-0020-8000-000
Note:	Other sensors on request.	

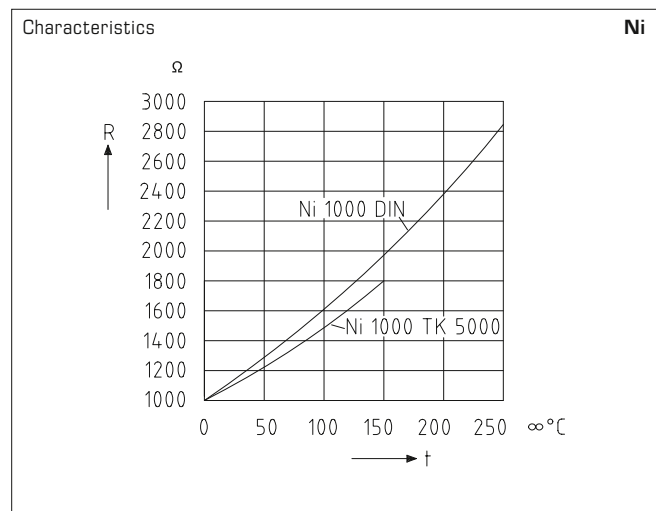
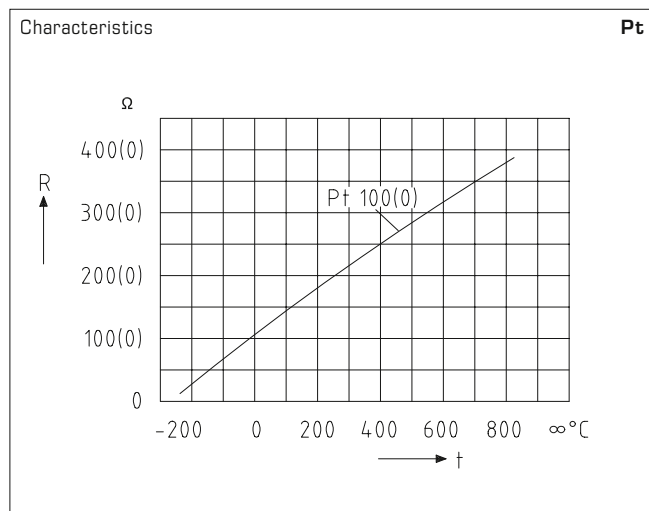
Optional services / WG01		Unit
Double sensor		plus 50 % of instrument price
1 / 2 DIN	(according to DIN EN 60751, class B)	Per piece
1 / 3 DIN	(according to DIN EN 60751, class B)	Per piece
1 / 10 DIN	(according to DIN EN 60751, class B)	Per piece
Connection type	4-wire connection with ceramic base, head form B	Per piece
	4-wire connection with circuit board, box head	Per piece
Protection class	IP 65 at head form B	Per piece
	IP 68 (Sensor sleeve watertight compound-filled) for cable sensors	Per piece



Custom-made products (for 25 or more pieces)		Unit	
Silicone-free sensor production		Per piece	on request!
Factory test certificate (per device)	1-point certificate	One-time cost	on request!
	2-point certificate	One-time cost	on request!
	3-point certificate	One-time cost	on request!
	Each additional test point	One-time cost	on request!
Custom-made products	Setup costs for custom-made products	One-time cost	on request!
Special paintwork	Set-up costs for special paintwork	one-off (net)	
	plus costs for special paintwork	from 25 piece	per piece
		from 50 piece	per piece
Special print (with stereotype)	Set-up costs incl. stereotype production, 1 colour	one-off (net)	
	Set-up costs incl. stereotype production, 2 colour	one-off (net)	
	plus costs for special print	from 25 piece	per piece / colour
		from 50 piece	per piece / colour
		from 100 piece	per piece / colour
		from 250 piece	per piece / colour
Printing customer logo on housing cover (for 200 covers of one housing series)	Setup costs for printing on housing cover	One-time cost	on request!
	Plus printing costs, 2-colour, printing on housing cover	Per piece	on request!
Labelling with customer logo	Setup costs for labelling	One-time cost	on request!
	Plus costs for labelling	Per piece	on request!

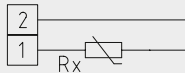
Characteristics and wiring of terminal connections of some passive temperature sensors

S+S REGELTECHNIK

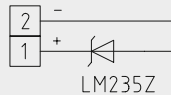


Wiring of terminal connections room devices and box head

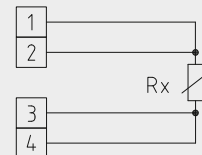
Connecting diagram **1 x two-wire connection standard**



Connecting diagram **1 x two-wire connection LM235Z (KP 10)**

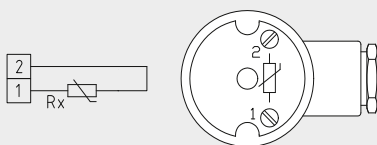


Connecting diagram **1 x four-wire connection (optional)**

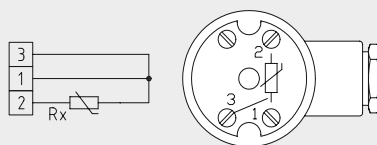


Wiring of terminal connections head form B

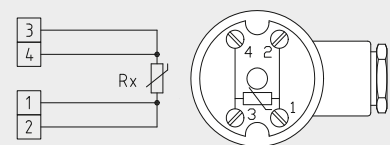
Connecting diagram **1 x two-wire connection**



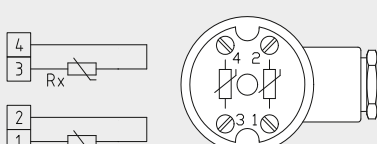
Connecting diagram **1 x three-wire connection**



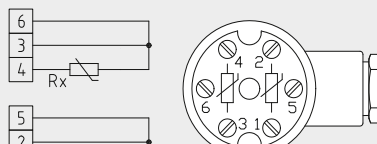
Connecting diagram **1 x four-wire connection**



Connecting diagram **2 x two-wire connection**



Connecting diagram **2 x three-wire connection**



Sensor type	Manufacturer *	RTF	ATF	TF 65 + MF-15-K	TF 65 + TH 08	ALTF	HTF
10K3A1 NTC 10 kOhm	Aquatrol	●	●	●	●	●	●
	Honeywell	T 8120 B	T 7416 A T 7043 E	●	T 7106 A T 7043 F	T 7044 C	T 7076 D
	Johnson	●	●	TE - 6361 V TE - 636 GV-1	●	●	●
	Satchwell	●	DOT10 K2 DOS10 K2	DDT10 K1	DWT10 K1 DST10 K1	●	●
	Seachange	SEN / PTR / ROM	SEN / PR / OAT	SEN / PR / DCT	SEN / PR / IMM	SEN / PR / CLP	SEN / FL
	Trend	TE - TS	TE - TO	TE - TD	TE - TI	TE - TC	●
10K4A1 NTC 10 kOhm Precon	Andover	TTS - S Series	●	TT - O Series	TT - I Series	TT - ST	●
	Delta Controls	●	●	●	●	●	●
	Siebe	●	●	●	●	●	●
	York (< 40°C)	●	●	●	●	●	●
20K6A1 NTC 20 kOhm	Honeywell	T 7460 H T 7470 A DRF 20 - S RF 20 T 4712	AF 20 DAF 20 T 7416 A1022	LF 20	VF 20 T VF 20 NT VF 20 L VF 20 LN WPF 20 T 7425 A	VF 20 A WPF 20 A	KFT 20 KFT 20 B DKF 20
PT 100 DIN EN 60 751 Klasse B	Sauter	EGT430 / F011	●	EGT466 / F011 EGT447 / F011	●	●	EGT456 / F011
	Serck	●	●	●	●	●	●
	Siemens / Landis & Staefa	QAA100 QAA2010	QAC2010	FK-TP / 200 QAM2110	QAE2110	QAD2010	QAP2010
PT 1000 DIN EN 60 751 Klasse B	Honeywell	T 7412	T 7416 A1014	T 7411	T 7413	T 7414	●
	Sauter	EGT430 / F101	EGT401 / F101	EGT446 / F101 EGT447 / F101	–	EGT411 / F101	EGT456 / F101
	Serck	●	●	●	●	●	●
	Siebe	TS - 5811	●	●	●	●	●
	Cylon	●	●	●	●	●	●
Ni 1000 DIN EN 43 760	Sauter	EGT330 / F101	EGT301 / F101	EGT346 / F101 EGT347 / F101 EGT348 / F101	EGT346 / F101 EGT347 / F101 EGT348 / F101	EGT311 / F101	EGT354 / F101 EGT356 / F101
Ni 1000 / TCR Ni1000 TK500	Siemens / Landis & Staefa	QAA24 QAA25 QAA26 QAA27 QAA64	QAC22	QAM2120	QAE2120	QAD22 QAD26	QAP21 QAP22 QAZ21
SAT 1	Satchwell	DRT DU, DUS, DUSF	DOT0002 DOS0002	DDT0001	DWT0001 DST0001	●	DDU
FeT (T1)	Landis & Staefa	QAA2040 FR - T1	FW - T1	QAM2140 FK - T1	QAE2140 FT - T1	FA - T1	QAP2040 FTK - T1
TAC 1 NTC 1.8 kOhm	TAC Schneider	●	●	●	●	●	●
2.2 K3 A1 NTC 2.2 kOhm	Ambiflex	RTN3060	ETN3060	DTN3060	ITN3060	CTN3060	●
	Johnson	TE - 6344 P	TE - 6343 P	TE - 6341 P TE - 6341 V TE - 634 GV - 1	TE - 6342 P	–	–
3 K3 A1 NTC 3 kOhm	Alerton	MS-1000 Series TS-1050	●	●	●	●	●
3 K6 A1 NTC 30 kOhm	Drayton	A 701	A 702	●	A 703	A 704	●
LM235Z (KP10)	Kieback & Peter	TR TD	TA TAD	TLS TLD	TV, TVD TDN, TVP	TAV TAVD	TEV TKV

* Manufacturer names are brands and / or trademarks of the respective companies.

Range of preferential items permanently available from stock in standard design with S+S company logo

THERMASGARD® TF 43

Temperature sensors (basic device)

Type/WG03B	Output	Item No.
TF 43 PT1000 xx	passive	IP54
TF43 Pt1000 50mm		1101-7010-5011-000
TF43 Pt1000 100mm		1101-7010-5021-000
TF43 Pt1000 150mm		1101-7010-5031-000
TF43 Pt1000 200mm		1101-7010-5041-000
TF43 Pt1000 250mm		1101-7010-5051-000
TF43 Pt1000 300mm		1101-7010-5061-000
TF43 Pt1000 350mm		1101-7010-5071-000
TF43 Pt1000 400mm		1101-7010-5081-000
TF 43 Ni1000 xx	passive	IP54
TF43 Ni1000 50mm		1101-7010-9011-000
TF43 Ni1000 100mm		1101-7010-9021-000
TF43 Ni1000 150mm		1101-7010-9031-000
TF43 Ni1000 200mm		1101-7010-9041-000
TF43 Ni1000 250mm		1101-7010-9051-000
TF43 Ni1000 300mm		1101-7010-9061-000
TF43 Ni1000 350mm		1101-7010-9071-000
TF43 Ni1000 400mm		1101-7010-9081-000
TF 43 Ni1000TK xx	passive	IP54
TF43 NiTK 50mm		1101-7011-0011-000
TF43 NiTK 100mm		1101-7011-0021-000
TF43 NiTK 150mm		1101-7011-0031-000
TF43 NiTK 200mm		1101-7011-0041-000
TF43 NiTK 250mm		1101-7011-0051-000
TF43 NiTK 300mm		1101-7011-0061-000
TF43 NiTK 350mm		1101-7011-0071-000
TF43 NiTK 400mm		1101-7011-0081-000
TF 43 LM235Z xx	passive	IP54
TF43 LM235Z 50mm		1101-7012-1011-000
TF43 LM235Z 100mm		1101-7012-1021-000
TF43 LM235Z 150mm		1101-7012-1031-000
TF43 LM235Z 200mm		1101-7012-1041-000
TF43 LM235Z 250mm		1101-7012-1051-000
TF43 LM235Z 300mm		1101-7012-1061-000
TF43 LM235Z 350mm		1101-7012-1071-000
TF43 LM235Z 400mm		1101-7012-1081-000
TF 43 NTC 1,8K xx	passive	IP54
TF43 NTC1,8K 50mm		1101-7011-2011-000
TF43 NTC1,8K 100mm		1101-7011-2021-000
TF43 NTC1,8K 150mm		1101-7011-2031-000
TF43 NTC1,8K 200mm		1101-7011-2041-000
TF43 NTC1,8K 250mm		1101-7011-2051-000
TF43 NTC1,8K 300mm		1101-7011-2061-000
TF43 NTC1,8K 350mm		1101-7011-2071-000
TF43 NTC1,8K 400mm		1101-7011-2081-000
TF 43 NTC10K xx	passive	IP54
TF43 NTC10K 50mm		1101-7011-5011-000
TF43 NTC10K 100mm		1101-7011-5021-000
TF43 NTC10K 150mm		1101-7011-5031-000
TF43 NTC10K 200mm		1101-7011-5041-000
TF43 NTC10K 250mm		1101-7011-5051-000
TF43 NTC10K 300mm		1101-7011-5061-000
TF43 NTC10K 350mm		1101-7011-5071-000
TF43 NTC10K 400mm		1101-7011-5081-000
TF 43 NTC20K xx	passive	IP54
TF43 NTC20K 50mm		1101-7011-6011-000
TF43 NTC20K 100mm		1101-7011-6021-000
TF43 NTC20K 150mm		1101-7011-6031-000
TF43 NTC20K 200mm		1101-7011-6041-000
TF43 NTC20K 250mm		1101-7011-6051-000
TF43 NTC20K 300mm		1101-7011-6061-000
TF43 NTC20K 350mm		1101-7011-6071-000
TF43 NTC20K 400mm		1101-7011-6081-000



Basic device
(without accessories)



Immersion / screw-in
temperature sensor
with immersion sleeve
(accessories)



Duct temperature sensor
with mounting flange
(accessories)

THERMASGARD® TM 43

Temperature measuring transducer (basic device),
calibratable, with multi-range switching


Type / WG01B	Output	Item No.
TM 43 - U xx	active	IP 54
TM43-U 50mm	0 -10 V	1101-7111-0019-900
TM43-U 100mm	0 -10 V	1101-7111-0029-900
TM43-U 150mm	0 -10 V	1101-7111-0039-900
TM43-U 200mm	0 -10 V	1101-7111-0049-900
TM43-U 250mm	0 -10 V	1101-7111-0059-900
TM43-U 300mm	0 -10 V	1101-7111-0069-900
TM 43 - U LCD xx	active	IP 54 (display)
TM43-U 50mm LCD	0 -10 V	1101-7111-2019-900
TM43-U 100mm LCD	0 -10 V	1101-7111-2029-900
TM43-U 150mm LCD	0 -10 V	1101-7111-2039-900
TM43-U 200mm LCD	0 -10 V	1101-7111-2049-900
TM43-U 250mm LCD	0 -10 V	1101-7111-2059-900
TM43-U 300mm LCD	0 -10 V	1101-7111-2069-900
TM 43 - I xx	active	IP 54
TM43-I 50mm	4...20 mA	1101-7112-0019-900
TM43-I 100mm	4...20 mA	1101-7112-0029-900
TM43-I 150mm	4...20 mA	1101-7112-0039-900
TM43-I 200mm	4...20 mA	1101-7112-0049-900
TM43-I 250mm	4...20 mA	1101-7112-0059-900
TM43-I 300mm	4...20 mA	1101-7112-0069-900
TM 43 - I LCD xx	active	IP 54 (display)
TM43-I 50mm LCD	4...20 mA	1101-7112-2019-900
TM43-I 100mm LCD	4...20 mA	1101-7112-2029-900
TM43-I 150mm LCD	4...20 mA	1101-7112-2039-900
TM43-I 200mm LCD	4...20 mA	1101-7112-2049-900
TM43-I 250mm LCD	4...20 mA	1101-7112-2059-900
TM43-I 300mm LCD	4...20 mA	1101-7112-2069-900

ACCESSORIES

for basic device TF43/TM43



Type / WG01B	Item No.	
Immersion sleeves	p_{max} (static)	
TH08-MS-G xx	(T_{max} +150 °C)	polished brass
TH08-MS-G 50MM	10 bar	7100-0017-0010-132
TH08-MS-G 100MM	10 bar	7100-0017-0020-132
TH08-MS-G 150MM	10 bar	7100-0017-0030-132
TH08-MS-G 200MM	10 bar	7100-0017-0040-132
TH08-MS-G 250MM	10 bar	7100-0017-0050-132
TH08-MS-G 300MM	10 bar	7100-0017-0060-132
TH08-MS-G 350MM	10 bar	7100-0017-0070-132
TH08-MS-G 400MM	10 bar	7100-0017-0080-132
TH08-VA xx	(T_{max} +600 °C)	stainless steel V4A (1.4571)
TH08-VA 50MM	40 bar	7100-0012-0010-132
TH08-VA 100MM	40 bar	7100-0012-0020-132
TH08-VA 150MM	40 bar	7100-0012-0030-132
TH08-VA 200MM	40 bar	7100-0012-0040-132
TH08-VA 250MM	40 bar	7100-0012-0050-132
TH08-VA 300MM	40 bar	7100-0012-0060-132
TH08-VA 350MM	40 bar	7100-0012-0070-132
TH08-VA 400MM	40 bar	7100-0012-0080-132
Mounting flanges		plastic
MF-15-K Ø 15,2 mm	(T_{max} +100 °C)	7100-0032-0000-000

Range of preferential items permanently available from stock
in standard design with S+S company logo

THERMASGARD® ATF 01

Outside temperature sensors / wet room temperature sensors

Type / WG03B	Output	Item No.
ATF 01 xx	passive	IP 54
ATF01 Pt1000		1101-1030-5001-000
ATF01 Ni1000		1101-1030-9001-000
ATF01 NiTK		1101-1031-0001-000
ATF01 LM235Z		1101-1032-1001-000
ATF01 NTC1,8K		1101-1031-2001-000
ATF01 NTC10K		1101-1031-5001-000
ATF01 NTC20K		1101-1031-6001-000



THERMASGARD® ATM2-SD

Outside temperature / wet room temperature measuring transducers
calibratable, with multi-range switching

Type / WG01B	Output	Item No.
ATM 2 - SD	active	IP 54
ATM2-SD-U	0 -10 V	1101-1191-0009-900
ATM2-SD-I	4...20 mA	1101-1192-0009-900



THERMASGARD® ALTF 02

Surface contact temperature sensors / tube contact temperature sensors,
compact variant

Type / WG03B	Output	Item No.
ALTF02 xx	passive	IP 54
ALTF02 Pt1000		1101-1010-5001-000
ALTF02 Ni1000		1101-1010-9001-000
ALTF02 NiTK		1101-1011-0001-000
ALTF02 LM235Z		1101-1012-1001-000
ALTF02 NTC1,8K		1101-1011-2001-000
ALTF02 NTC10K		1101-1011-5001-000
ALTF02 NTC20K		1101-1011-6001-000



THERMASGARD® ALTM1-SD

Surface contact / tube contact temperature measuring transducers,
compact variant,
calibratable, with multi-range switching

Type / WG01B	Output	Item No.
ALTM1 - SD	active	IP 54
ALTM1-SD-U	0 -10 V	1101-6141-0219-920
ALTM1-SD-I	4...20 mA	1101-6142-0219-920



THERMASGARD® ALTF 1

Surface contact temperature sensors / tube contact temperature sensors,
with detached sensor head,
(L = 50 mm, cable material: PVC, cable length: 1.5 m, without housing)

Type / WG03B	Output	Item No.
ALTF 1 xx	passive	IP65
ALTF1 Pt1000 PVC 1,5M		1101-6020-5211-110
ALTF1 Ni1000 PVC 1,5M		1101-6020-9211-110
ALTF1 NiTK PVC 1,5M		1101-6021-0211-110
ALTF1 LM235Z PVC 1,5M		1101-6022-1211-110
ALTF1 NTC1,8K PVC 1,5M		1101-6021-2211-110
ALTF1 NTC10K PVC 1,5M		1101-6021-5211-110
ALTF1 NTC20K PVC 1,5M		1101-6021-6211-110

THERMASGARD® ALTM2-SD

Surface contact / tube contact temperature measuring transducers,
with detached sensor head,
calibratable, with multi-range switching
(L = 50 mm, cable material: silicone, cable length: 1.5 m, with housing)

Type / WG01B	Output	Item No.
ALTM2-SD	active	IP54
ALTM2-SD-U	0 -10 V	1101-6151-0219-920
ALTM2-SD-I	4...20 mA	1101-6152-0219-920

THERMASGARD® HTF 50

Sleeve temperature sensors / cable temperature sensors
(L = 50 mm, cable material: PVC, cable length: 1.5 m, without housing)

Type / WG03B	Output	Item No.
HTF 50 xx	passive	IP65
HTF50 Pt1000 PVC 1,5M		1101-6030-5211-110
HTF50 Ni1000 PVC 1,5M		1101-6030-9211-110
HTF50 NiTK PVC 1,5M		1101-6031-0211-110
HTF50 LM235Z PVC 1,5M		1101-6032-1211-110
HTF50 NTC1,8K PVC 1,5M		1101-6031-2211-110
HTF50 NTC10K PVC 1,5M		1101-6031-5211-110
HTF50 NTC20K PVC 1,5M		1101-6031-6211-110

THERMASGARD® HFTM-SD

Sleeve sensors with temperature measuring transducer,
calibratable, with multi-range switching
(L = 50 mm, cable material: PVC, cable length: 1.5 m, with housing)

Type / WG01B	Output	Item No.
HFTM-SD	active	IP54
HFTM-SD-U	0 -10 V	1101-6161-0219-920
HFTM-SD-I	4...20 mA	1101-6162-0219-920



Range of preferential items permanently available from stock
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THERMASGARD® RTF1-SD

Room temperature sensors without operating elements

Type/WG03B	Output	Item No.
RTF1-SD xx	passive	IP30
RTF1-SD Pt1000		1101-40D0-5000-000
RTF1-SD Ni1000		1101-40D0-9000-000
RTF1-SD NiTK		1101-40D1-0000-000
RTF1-SD LM235Z		1101-40D2-1000-000
RTF1-SD NTC1,8K		1101-40D1-2000-000
RTF1-SD NTC10K		1101-40D1-5000-000
RTF1-SD NTC10K (B=3695K)		1101-40D1-9000-000
RTF1-SD NTC20K		1101-40D1-6000-000

THERMASGARD® RTM1-SD

Room temperature measuring transducers without operating elements

Type/WG01B	Output	Item No.
RTM1-SD	active	IP30
RTM1-SD-U	0 -10 V	1101-41D1-0000-200
RTM1-SD-I	4...20 mA	1101-41D2-0000-200

THERMASGARD® MWTF-SD

Mean value / rod / duct temperature sensor
including mounting flange
(Measuring rod: reinforced thermoplastic tube, NL = 3m / 6m)

Type/WG03B	Output	Item No.
MWTF-SD xx	passive	IP54
MWTF-SD Pt1000 3m		1101-3050-5231-200
MWTF-SD Pt1000 6m		1101-3050-5261-200

THERMASGARD® MWTM-SD

Mean value / rod / duct temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
(Measuring rod: reinforced thermoplastic tube, NL = 3m / 6m)

Type/WG01B	Output	Item No.
MWTM-SD-U	active	IP54
MWTM-SD-U 3m	0 -10 V	1101-3131-0239-90K
MWTM-SD-U 6m	0 -10 V	1101-3131-0269-90K
MWTM-SD-I	active	IP54
MWTM-SD-I 3m	4...20 mA	1101-3132-0239-90K
MWTM-SD-I 6m	4...20 mA	1101-3132-0269-90K

THERMASREG® FST

Frost protection thermostats, mechanical, one-step,
with switching output
(length of capillary 3m / 6m, incl. mounting clamps)

Type/WG03B	Output	Item No.
FST-xxD	switching	IP65
FST-1D 6m		1102-1021-0102-000
FST-5D 3m		1102-1022-0102-000





HYGRASGARD® RFTF - SD

Room humidity and temperature sensors ($\pm 2\%$),
calibratable

Type / WG01B	Output	Item No.
RFTF-SD	active (2x)	IP30
RFTF-SD-U	0-10 V	1201-41D1-1000-000
RFTF-SD-I	4...20 mA	1201-41D2-1000-000



HYGRASGARD® KFTF - SD

Duct humidity and temperature sensors ($\pm 2\%$),
including mounting flange,
calibratable, with multi-range switching

Type / WG01B	Output	Item No.
KFTF-SD	active (2x)	IP54
KFTF-SD-U	0-10 V	1201-3181-1000-029



HYGRASGARD® AFTF - SD

On-wall humidity and temperature sensors ($\pm 2\%$),
calibratable, with multi-range switching

Type / WG01B	Output	Item No.
AFTF-SD	active (2x)	IP65
AFTF-SD-A	0-10 V / 4...20 mA	1201-112E-1000-100
(automatically via AOS)		



HYGRASREG® KW - SD

Condensation control switches
including strap

Type / WG01B	Output	Item No.
KW-SD	switching	IP54
KW-W-SD	changeover contact	1202-1075-0001-020

Range of preferential items permanently available from stock in standard design with S+S company logo

PREMASGARD® 212x-SD

Pressure, differential pressure and volume flow measuring transducers, with/without display, including connection set, adjustable, calibratable, with multi-range switching

Type / WG01B	Output	Item No.
max. - 1000...+ 1000 Pa	active	IP 54
PREMASGARD 2121-SD	0-10 V / 4...20 mA	1301-11B7-0010-000
PREMASGARD 2121-SD LCD (Display)	0-10 V / 4...20 mA	1301-11B7-2010-000
max. - 5000...+ 5000 Pa	active	IP 54
PREMASGARD 2125-SD	0-10 V / 4...20 mA	1301-11B7-0050-000
PREMASGARD 2125-SD LCD (Display)	0-10 V / 4...20 mA	1301-11B7-2050-000
max. - 100...+ 100 Pa	active	IP 54
PREMASGARD 2120-SD	0-10 V / 4...20 mA	1301-11B7-0110-000
PREMASGARD 2120-SD LCD (Display)	0-10 V / 4...20 mA	1301-11B7-2110-000



PREMASREG® DS 2

Mechanical differential pressure switches for air, with/without connection set

Type / WG03B	Pressure range	Item No.
DS2 incl. connection set		IP 54
DS-205 F	20 ... 300 Pa	1302-4026-0000-000
DS-205 B	50 ... 500 Pa	1302-4022-0000-000
DS-205 D	100 ... 1000 Pa	1302-4027-0000-000
DS-205 E	500 ... 2000 Pa	1302-4028-0000-000
DS2 without connection set		IP 54
DS-205 F	20 ... 300 Pa	1302-4026-1000- M40
DS-205 B	50 ... 500 Pa	1302-4022-1000- M40
DS-205 D	100 ... 1000 Pa	1302-4027-1000- M40
DS-205 E	500 ... 2000 Pa	1302-4028-1000- M40

M40 = Special price per piece in the multi-pack (40 pieces)



AERASGARD® KC02-SD

Duct CO2 sensors, including mounting flange

Type / WG02B	Output	Item No.
KC02-SD	active	IP 65
KC02-SD-U	0-10 V	1501-3160-1001-600



AERASGARD® RC02-SD

Room CO2 sensors, self-calibrating

Type / WG02B	Output	Item No.
RC02-SD	active	IP 30
RC02-SD-U	0-10 V	1501-61A0-1001-200



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