HYGRASGARD® AFTF-SD-Modbus

On-wall-humidity- and temperature sensors (± 2.0 %), compact form,
for mixture ratio, relative / absolute humidity, dew point, enthalpy
and temperature, calibratable, with Modbus connection

S+S REGELTECHNIK

AFTF-SD-Modbus
compact form

Calibratable outdoor humidity- and temperature sensor HYGRASGARD® AFTF-SD-Modbus with Modbus connection, enclosure made from impact-resistant plastic with quick-locking screws, **with /without optional display.**

The universal on-wall sensor is used to determine various characteristic variables in humidity measurement. It is used to measure the relative humidity and the temperature of the surrounding air. These measurands are used to calculate various parameters internally. The Modbus can be used to retrieve the following parameters: relative humidity [% r. H.], absolute humidity [g /m³], mixture ratio [g /kg], dew point temperature [°C], enthalpy [kJ /kg] (ignoring atmospheric air pressure) and ambient temperature [°C].

It is used in non-aggressive dust-free environments in refrigeration, air conditioning, ventilation and clean room technology, hotels, technical rooms, meeting rooms and convention centres. The measuring transducers are designed for exact detection of temperature and humidity. A digital long-term stable sensor is used as measuring element for humidity and temperature measurement. Fine adjustment by the user is possible.
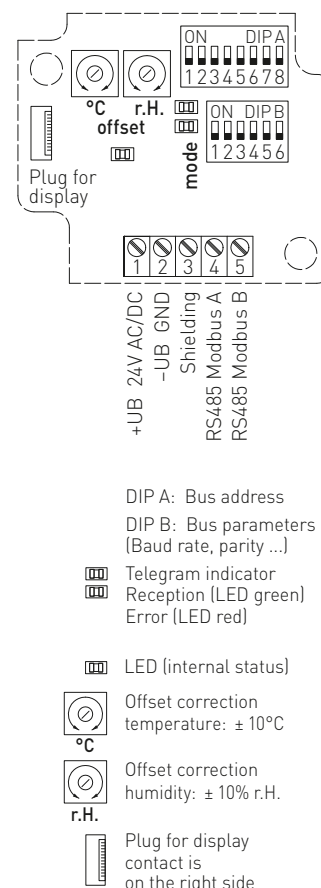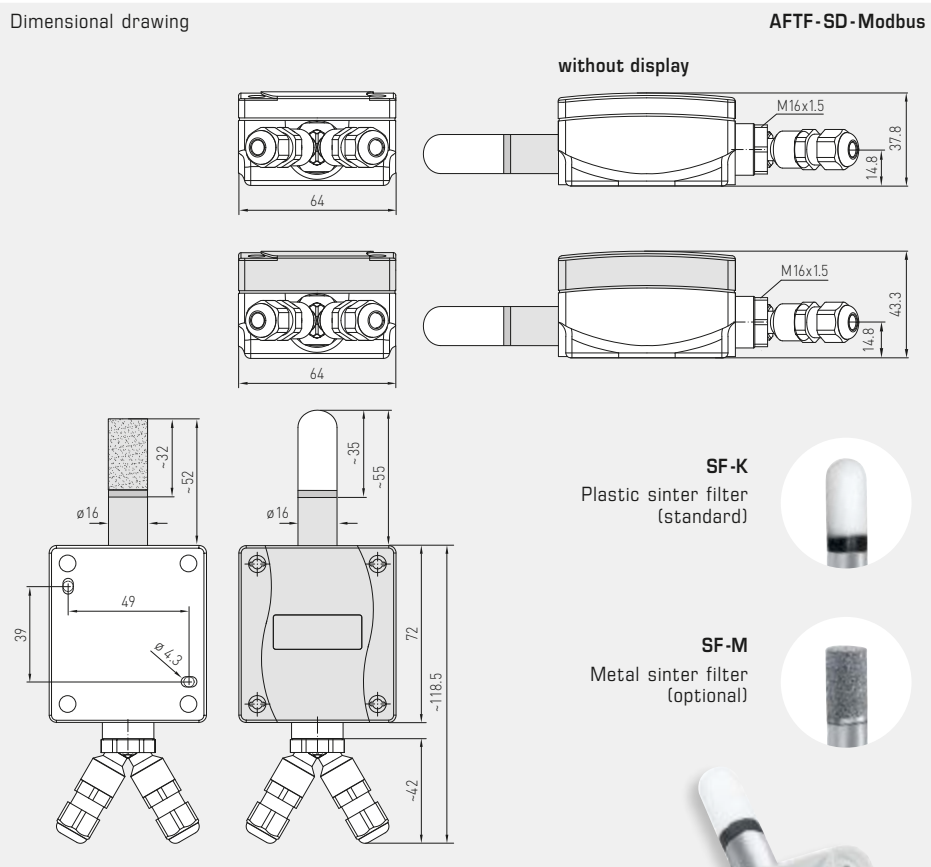
TECHNICAL DATA

Voltage supply:	24 V AC (± 20 %) and 15…36 V DC
Power consumption:	< 1 VA / 24 V DC, < 2.2 VA / 24 V AC
Sensors:	**digital humidity sensor** **with integrated temperature sensor,** low hysteresis, high long-term stability
Sensor protection:	**plastic** sinter filter, Ø 16 mm, L = 35 mm, exchangeable (optional **metal** sinter filter, Ø 16 mm, L = 32 mm)
Measuring range:	0…100 % r.H. (humidity) −35…+80 °C (temperature)
Deviation, humidity:	typically **± 2.0** % (20…80 % r. H.) at +25 °C, otherwise ± 3.0 %
Temperature deviation:	± 0.2 K at +25 °C
Zero point offset:	± 10 % r.H. (humidity) ± 10 °C (temperature)
Ambient temperature:	−30…+70 °C
Medium:	clean air and non-aggressive, non-combustible gases
Bus protocol:	Modbus (RTU mode), address range 0…**247** selectable
Enclosure:	plastic, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover for display is transparent!
Enclosure dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable gland:	2x M 12 x 1.5 (Y-adapter); with strain relief, exchangeable, max. inner diameter 6 mm
Protective tube:	stainless steel, Ø 16 mm, NL = 55 mm
Process connection:	by screws
Long-term stability:	± 1 % / year
Permissible air humidity:	< 95 % r. H., non-precipitating air
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, according to EN 61326
Optional:	**two-line display with illumination,** programmable, cutout approx. 36 x 15 mm (W x H), for displaying the actual humidity and actual temperature or a selectable parameter or an individually programmable display value (The Modbus interface allows the display to be individually configured in the 7-segment area and in the dot-matrix area.)
ACCESSORIES	see table
MODBUS-Y	**Y-adapter** for cable gland M16x1.5 (on 2x M12x1.5), plastic (included in the scope of delivery)

Schematic diagram   **HYGR**ASGARD® **MODBUS**

ON   DIP A
1 2 3 4 5 6 7 8
°C   r.H.
offset   ON DIP B
mode   1 2 3 4 5 6
Plug for display

1 2 3 4 5
+UB 24V AC/DC
−UB GND
Shielding
RS485 Modbus A
RS485 Modbus B

DIP A: Bus address
DIP B: Bus parameters (Baud rate, parity …)
Telegram indicator Reception (LED green) Error (LED red)
LED (internal status)
Offset correction temperature: ± 10°C °C
Offset correction humidity: ± 10% r.H. r.H.
Plug for display contact is on the right side

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Dimensional drawing

AFTF - SD - Modbus

without display

M16x1.5

37.8

14.8

64

M16x1.5

43.3

14.8

64

~32

~52

ø16

~35

~55

ø16

49

39

ø 4.3

72

~118.5

~42

AFTF - SD - Modbus
compact form
with display

SF-K
Plastic sinter filter
(standard)

SF-M
Metal sinter filter
(optional)

WS-04
Weather and sun
protection hood
(optional)

HYGRASGARD® **AFTF - SD - Modbus** – On-wall- humidity- and temperature sensor/s (± 2.0 %), compact form

Type / WG01	Measuring Range / Readout Humidity (switchable)	Temperature	Output	Display	Item No.	Price
AFTF - SD - Modbus						
AFTF-SD-MODBUS	0 …100 % r. H. (standard) 0...80 g / kg (MR) 0...80 g / m³ (A.H.) 0...85 kJ / kg (ENT.) −20...+80 °C (DP)	−35...+80 °C	Modbus		1201-1226-1000-100	
AFTF-SD-MODBUS DISPLAY	(5 x as above)	(1 x as above)	Modbus	■	1201-1226-1200-100	
Accessories						
KA-2	**Modbus communication adapter** with USB/RS485 interface for system connection or/and as an active bus termination resistance				on request	
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel **V4A** (1.4404)				7000-0050-2200-100	
WS-01	**Sun and ball-impact protection hood,** 184 x 180 x 80 mm, stainless steel				7100-0040-2000-000	
WS-04	**Weather and sun protection hood,** 130 x 180 x 135 mm, stainless steel				7100-0040-7000-000	
	For further information, see last chapter Accessories!					