

**On-wall-humidity- and temperature sensors ($\pm 2.0\%$),
for mixture ratio, relative/absolute humidity, dew point, enthalpy
and temperature, calibratable, with Modbus connection**

Calibratable outside humidity and temperature sensor **HYGRASGARD® AFTF-Modbus-T3**, with Modbus connection, in an impact-resistant plastic housing with quick-locking screws, optionally with /without display, with a plasticsinter filter (exchangeable), to exactly detect the relative humidity (0...100% RH) and the temperature ($-35...+80\text{ }^\circ\text{C}$) and to detect various parameters in humidity measurement. International system of units **SI** (default) can be switched to **Imperial** (via Modbus). The on-wall sensor is applied in a non-aggressive, dust-free environment. It is used in the refrigeration, air conditioning and clean room technology, engineering rooms, hotels and conference facilities.

A long-term stable, **digital humidity and temperature sensor** guarantee exact measurement results. These measurands are used to internally calculate the following parameters that can be retrieved via Modbus: relative humidity, absolute humidity, mixture ratio, dew point, enthalpy (ignoring atmospheric air pressure) and ambient temperature.

Innovative Modbus sensor with galvanically separated RS485-Modbus-interface, selectable bus termination resistance, DIP switch for setting the bus parameters and bus address in current-free state, internal LEDs for telegram status display, two separate push-in terminals and large three-line display (illuminated; with customised programming in the 7-segment and dot-matrix range). The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

AFTF-Modbus-T3

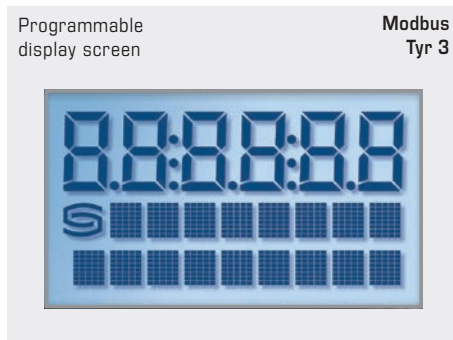
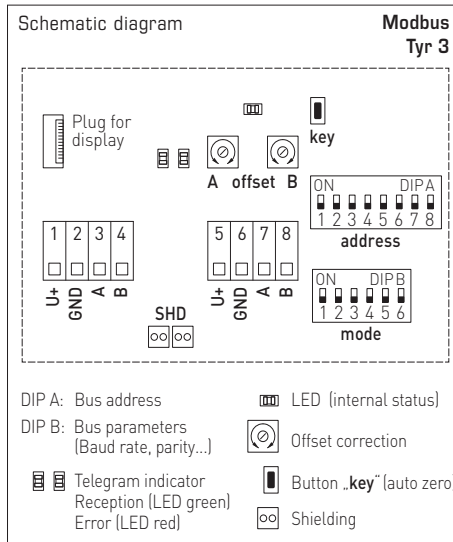


Device version with **M12 connector** (optional on request)



TECHNICAL DATA

| | |
|---------------------------|---|
| Voltage supply: | 24 V AC ($\pm 20\%$); 15...36 V DC |
| Power consumption: | < 1.2 W / 24 V DC; < 1.8 VA / 24 V AC |
| System of units: | SI (default) or Imperial (switchable via Modbus) |
| Data points: | temperature [$^\circ\text{C}$] [$^\circ\text{F}$], relative humidity [% RH], dew point [$^\circ\text{C}$] [$^\circ\text{F}$], absolute humidity [g/m^3] [gr/ft^3], mixing ratio [g/kg] [gr/lb], enthalpy [kJ/kg] [Btu/lb] |
| Sensor: | digital humidity sensor with integrated temperature sensor , low hysteresis, high long-term stability |
| Protective tube: | stainless steel V2A (1.4301), \varnothing 13 mm, NL = 46 mm |
| Sensor protection: | plastic sinter filter , \varnothing 13 mm, L = 28 mm |
| Measuring range: | 0...100% RH (humidity) $-35...+80\text{ }^\circ\text{C}$ (temperature) |
| Deviation, humidity: | typically $\pm 2.0\%$ (20...80% RH) at $+25\text{ }^\circ\text{C}$, otherwise $\pm 3.0\%$ |
| Temperature deviation: | typically $\pm 0.4\text{ K}$ at $+25\text{ }^\circ\text{C}$ |
| Zero point offset: | $\pm 10\%$ RH (humidity) $\pm 5\text{ }^\circ\text{C}$ (temperature) |
| Ambient temperature: | $-30...+70\text{ }^\circ\text{C}$ |
| Medium: | clean air and non-aggressive, non-combustible gases |
| Bus protocol: | Modbus (RTU mode), address range 0... 247 selectable |
| Baud rate: | 9600, 19200, 38400 Baud |
| Signal filtering: | 4 s / 32 s |
| 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: | 108 x 78.5 x 43.3 mm (Tyr 3 without display) 108 x 78.5 x 45.8 mm (Tyr 3 with display) |
| Cable connection: | cable gland , plastic (2x M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request) |
| Process connection: | by screws |
| Electrical connection: | 0.2 - 1.5 mm ² , using push-in terminals |
| Permissible air humidity: | < 95% RH, non-precipitating air |
| Protection class: | III (according to EN 60 730) |
| Protection type: | IP 65 (according to EN 60 529) |
| Standards: | CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU |
| Features: | Display with illumination , three-line, programmable, cutout approx. 51 x 29 mm (W x H), for displaying the actual humidity and actual temperature (cyclic) or a selectable parameter (static) or an individually programmable display value |





S+S REGELTECHNIK

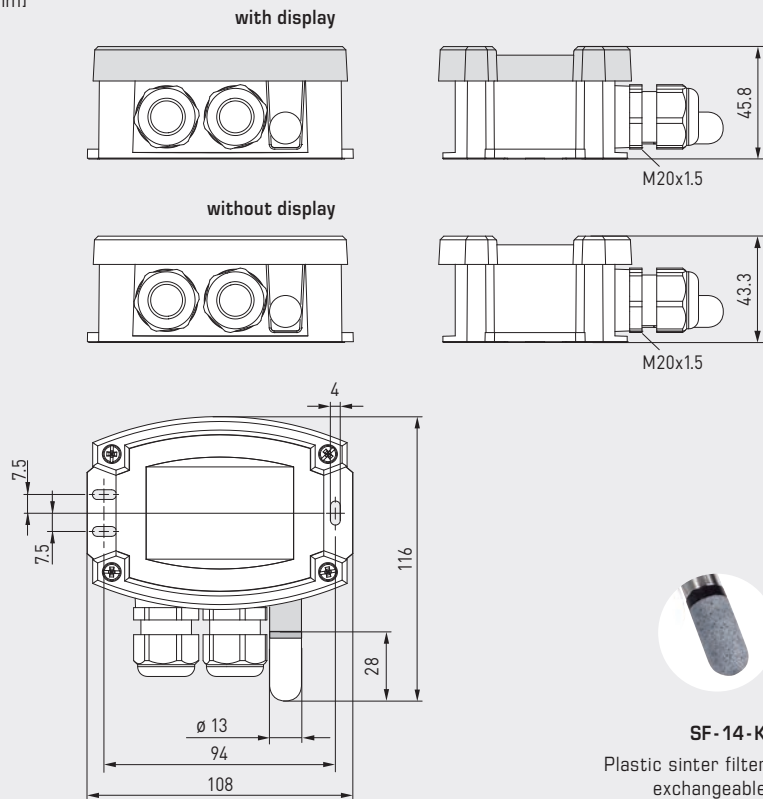
HYGRASGARD® AFTF - Modbus - T3

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Dimensional drawing
[mm]

AFTF - Modbus - T3

AFTF - Modbus - T3
with display



SF-14-K
Plastic sinter filter
exchangeable

WS-04
Weather and sun
protection hood
(optional)



HYGRASGARD® AFTF - Modbus - T3 On-wall-humidity- and temperature sensors ($\pm 2.0\%$)

| Type / WG01 | Measuring Range / Readout Humidity (switchable) | Temperature | Output | Item No. | Price |
|---------------------------|---|----------------|--------|----------------------|-----------------|
| AFTF - Modbus - T3 | | | | | |
| AFTF-Modbus-T3 | 0 ... 100% RH (default) 0 ... 80 g/kg (MV) 0 ... 80 g/m ³ (a.F.) 0 ... 85 kJ/kg (ENT.) -20 ... +80 °C (TP) | -35 ... +80 °C | Modbus | 1201-12C6-1000-000 | 211,10 € |
| AFTF-Modbus-T3 LCD | (5x as above) | (1x as above) | Modbus | ■ 1201-12C6-1400-000 | 266,11 € |
| Optional: | Cable connection with M12 connector according to DIN EN 61076-2-101 on request | | | | |
| Note: | System of units SI (default) or imperial (can be changed via Modbus). | | | | |
| ACCESSORIES | | | | | |
| KA2-Modbus | Communication adapter (USB/RS485) for system connection | | | 1906-1200-0000-100 | 213,99 € |
| LA-Modbus | Line termination device (with terminating resistor) as an active bus termination | | | 1906-1300-0000-100 | 79,81 € |
| WS-01 | Sun and ball-impact protection hood , 184 x 180 x 80 mm, stainless steel V2A (1.4301) | | | 7100-0040-2000-000 | 31,77 € |
| WS-04 | Weather and sun protection hood , 130 x 180 x 135 mm, stainless steel V2A (1.4301) | | | 7100-0040-7000-000 | 37,49 € |

For further information, see last chapter Accessories!