

# HYGRASGARD® RPFTF - Modbus

## HYGRASGARD® RPFTF - 20 - Modbus



S+S REGELTECHNIK

Pendulum room humidity and temperature sensors ( $\pm 1.8\%$  /  $\pm 2.0\%$ ),  
for mixture ratio, relative/absolute humidity, dew point, enthalpy  
and temperature, calibratable, with Modbus connection

Calibratable pendulum room humidity and temperature sensor **HYGRASGARD® RPFTF-Modbus** ( $\pm 2.0\%$ ) or **RPFTF-20-Modbus** ( $\pm 1.8\%$ ), with plastic sinter filter (optional metal sinter filter), with Modbus connection, enclosure made from impact-resistant plastic with quick-locking screws, **with/without optional display**.

The universal pendulum room 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/m<sup>3</sup>], 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. The sensor is suitable for ceiling and duct installation, or for integration into equipment.

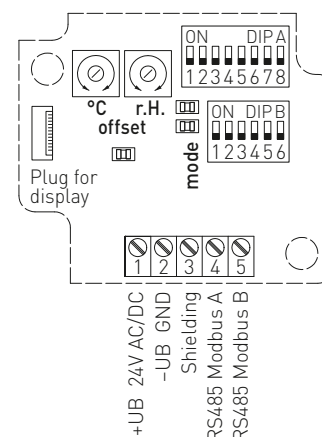
**RPFTF-Modbus** ( $\pm 2.0\%$ )  
**RPFTF-20-Modbus** ( $\pm 1.8\%$ )



### TECHNICAL DATA

Voltage supply:	24 V AC ( $\pm 20\%$ ) and 15...36 V DC
Power consumption:	< 1 VA / 24 V DC, < 2.2 VA / 24 V AC
Sensors:	<b>digital humidity sensor with integrated temperature sensor</b> , low hysteresis, high long-term stability
Sensor protection:	<b>plastic</b> sinter filter, $\varnothing$ 16 mm, L = 35 mm, exchangeable (optional <b>metal</b> sinter filter, $\varnothing$ 16 mm, L = 32 mm)
Measuring range:	0...100% r.H. (humidity) -35...+80 °C (temperature)
Deviation, humidity:	<b>RPFTF-Modbus:</b> typically $\pm 2.0\%$ (20...80% r.H.) at +25 °C, otherwise $\pm 3.0\%$ <b>RPFTF-20-Modbus:</b> typically $\pm 1.8\%$ (10...90% r.H.) at +25 °C, otherwise $\pm 2.0\%$
Temperature deviation:	$\pm 0.2$ K at +25 °C
Zero point offset:	$\pm 10\%$ r.H. (humidity) $\pm 10$ °C (temperature)
Ambient temperature:	-30...+70 °C
Medium:	clean air and non-aggressive, non-combustible gases
Bus protocol:	Modbus (RTU mode), address range 0... <b>247</b> selectable
Signal filtering:	4 s / 32 s
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
Connection cable:	PVC, LiYY, 6 x 0.14 mm <sup>2</sup> , cable length (KL) = approx. 2 m (other lengths optional)
Protective tube:	<b>stainless steel</b> , $\varnothing$ 16 mm, NL = 142 mm
Permissible air humidity:	<95% r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	IP 65 (according to EN 60529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326
Optional:	two-line <b>display with illumination</b> , 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.)
<b>ACCESSORIES</b>	see table
<b>MODBUS-Y</b>	<b>Y-adapter</b> for cable gland M16x1.5 (on 2x M12x1.5), plastic (included in the scope of delivery)

### Schematic diagram HYGRASGARD® MODBUS



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:  $\pm 10$  °C

Offset correction  
humidity:  $\pm 10\%$  r.H.

Plug for display  
contact is  
on the right side

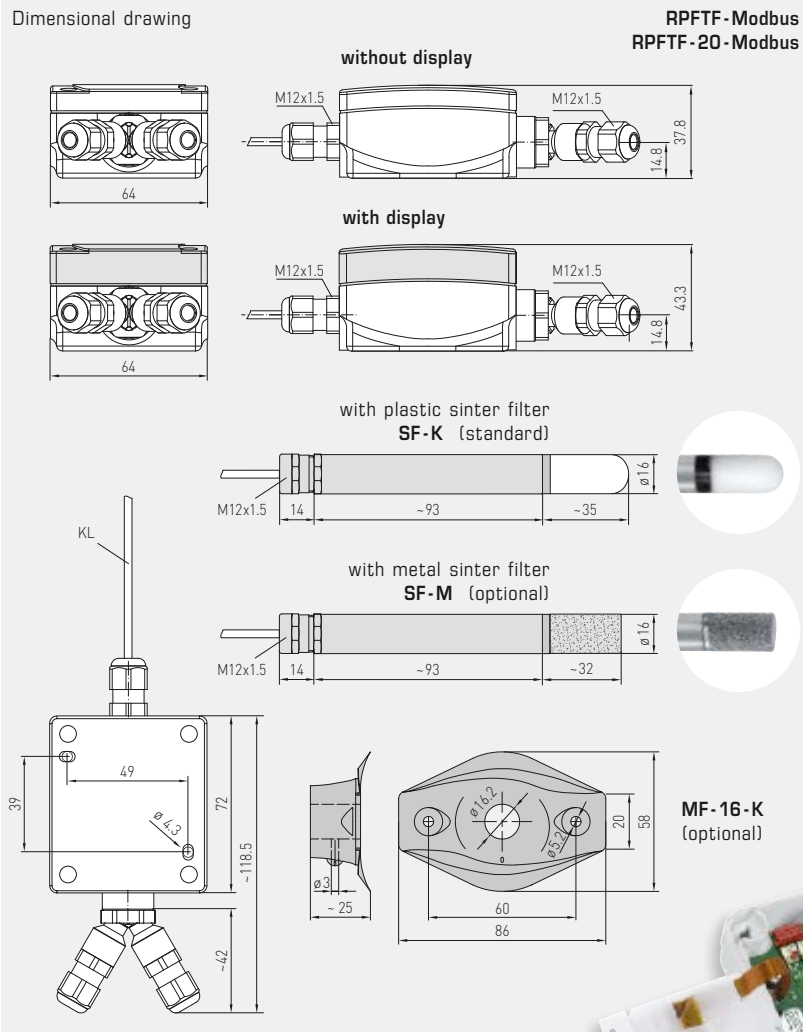


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Dimensional drawing



**MF-06-K**

Mounting flange,  
plastic  
(optional)



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RPFTF - Modbus ( $\pm 2.0\%$ )  
RPFTF - 20 - Modbus ( $\pm 1.8\%$ )  
with display



HYGRASGARD® RPFTF - Modbus – Pendulum room humidity and temperature sensors ( $\pm 2.0\%$ )  
HYGRASGARD® RPFTF - 20 - Modbus – Pendulum room humidity and temperature sensors ( $\pm 1.8\%$ )

Type / WG01	Measuring Range / Readout Humidity (switchable)	Temperature	Output	Display	Item No.	Price
<b>RPFTF - Modbus</b>						<b>(<math>\pm 2.0\%</math>)</b>
RPFTF-MODBUS	0 ...100% r. H. (standard) 0...80 g/kg (MR) 0...80 g/m <sup>3</sup> (A.H.) 0...85 kJ/kg (ENT.) -20...+80 °C (DP)	-35...+80 °C	Modbus		1201-1276-1000-000	
RPFTF-MODBUS DISPLAY	(5 x as above)	(1 x as above)	Modbus	■	1201-1276-1200-000	
<b>RPFTF - 20 - Modbus</b>						<b>(<math>\pm 1.8\%</math>)</b>
RPFTF-20-MODBUS	(5 x as above)	(1 x as above)	Modbus		1201-1276-1000-101	
RPFTF-20-MODBUS DISPLAY	(5 x as above)	(1 x as above)	Modbus	■	1201-1276-1200-101	
Extra charge:	per running metre of connecting lead (PVC)				on request	
<b>Accessories</b>						
<b>KA-2</b>	<b>Modbus communication adapter</b> with USB/RS485 interface				on request	
<b>SF-M</b>	<b>Metal sinter filter</b> , $\varnothing$ 16 mm, L = 32 mm, exchangeable, stainless steel V4A (1.4404)				7000-0050-2200-100	
<b>MF-16-K</b>	<b>Mounting flange</b> made of plastic				7100-0030-0000-000	