

# HYGRASGARD® KFTF - Modbus

## HYGRASGARD® KFTF - 20 - Modbus



S+S REGELTECHNIK

Duct humidity- and temperature sensors ( $\pm 1.8\%$  /  $\pm 2.0\%$ ), incl. mounting flange, for mixture ratio, relative / absolute humidity, dew point, enthalpy and temperature, calibratable, with Modbus connection

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

The universal duct 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.

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



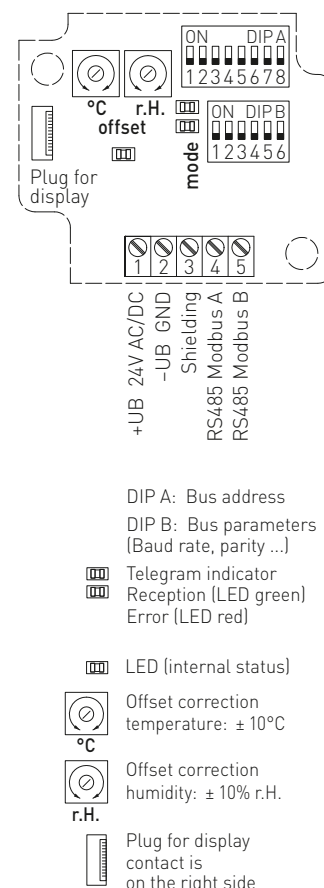
**MFT-20-K**  
Mounting flange,  
plastic



### 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
Sensor:	<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>KFTF-Modbus:</b> typically $\pm 2.0\%$ (20...80% r.H.) at +25 °C, otherwise $\pm 3.0\%$ <b>KFTF-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
Protective tube:	<b>PLEUROFORM™</b> , material polyamide (PA6), with torsion protection, $\varnothing$ 20 mm, NL = 235 mm, $v_{max} = 30$ m/s (air) (on request, optional <b>stainless steel</b> , $\varnothing$ 16 mm)
Process connection:	by mounting flange, plastic (included in the scope of delivery)
Long-term stability:	$\pm 1\%$ / 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:	<b>two-line 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)
<b>MFT-20-K</b>	<b>Mounting flange</b> , 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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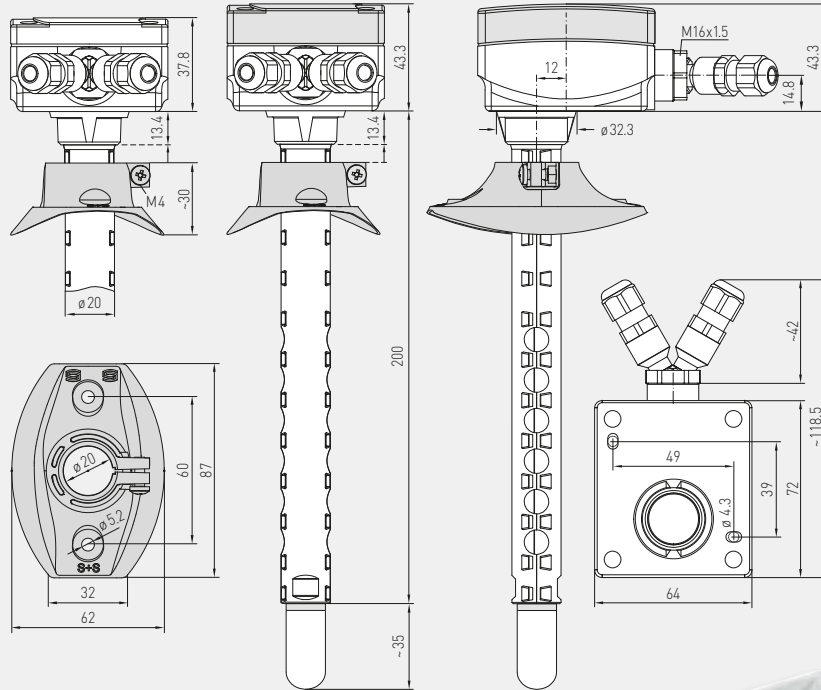
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Dimensional drawing

without display

with display



KFTF-Modbus  
KFTF-20-Modbus

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



**SF-K**  
Plastic sinter filter  
(standard)



**SF-M**  
Metal sinter filter  
(optional)  
**stainless steel protective tube**  
(optional on request)



HYGRASGARD® KFTF - Modbus – Duct humidity- and temperature sensors ( $\pm 2.0\%$ )  
HYGRASGARD® KFTF - 20 - Modbus – Duct humidity- and temperature sensors ( $\pm 1.8\%$ )

Type / WG01	Measuring Range / Readout Humidity (switchable)	Temperature	Output	Display	Item No.	Price
					<b>(<math>\pm 2.0\%</math>)</b>	
<b>KFTF - Modbus</b>						
KFTF 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		1201-3216-1000-029	
KFTF MODBUS DISPLAY	(5 x as above)	(1 x as above)	Modbus	■	1201-3216-1200-029	
					<b>(<math>\pm 1.8\%</math>)</b>	
<b>KFTF - 20 - Modbus</b>						
KFTF-20 MODBUS	(5 x as above)	(1 x as above)	Modbus		1201-3216-1000-030	
KFTF-20 MODBUS DISPLAY	(5 x as above)	(1 x as above)	Modbus	■	1201-3216-1200-030	
<b>Accessories</b>						
<b>KA-2</b>	<b>Modbus communication adapter</b> with USB/RS485 interface for system connection or/and as an active bus termination resistance					on request
<b>SF-M</b>	<b>Metal sinter filter</b> , Ø 16 mm, L = 32 mm, exchangeable, stainless steel V4A (1.4404)					7000-0050-2200-100

For further information, see last chapter Accessories!

