

**Duct humidity and temperature sensor ( $\pm 2.0\%$ ),  
for mixture ratio, relative/absolute humidity, dew point, enthalpy  
and temperature, Bluetooth-enabled, with EtherCATP port**

Networkable duct humidity and temperature sensor **HYGRASGARD® KFTF-EtherCATP** with M8 plug-in connector (EtherCATP-encoded), Bluetooth-enabled, in an impact-resistant plastic housing with quick-locking screws, optionally with /without display and bar graph, with plastic sinter filter (replaceable), incl. mounting flange.

The sensor is used to detect various parameters in humidity measurement. It measures the **relative humidity** (0...100% RH) and the **temperature** ( $-35...+80^{\circ}\text{C}$ ) of the ambient air. These measurands are used internally to calculate further output values: **absolute humidity** (0...80g/m<sup>3</sup>), **mixture ratio** (0...80g/kg), **dew point temperature** ( $-20...+80^{\circ}\text{C}$ ) and **enthalpy** (0...85kJ/kg) while ignoring atmospheric air pressure. A long-term stable, digital sensor guarantees exact measurement results. The sensor is factory-calibrated.

**EtherCATP-enabled measuring transducer** for industrial requirements with maximum reliability: includes easy PLC integration using the device's ESI configuration file, diagnostics (such as communication failure counter), advanced settings options, access to historical data (min / max) and establishing the sensor's service interval. Optionally with large illuminated display (3-line, customised programming in the 7-segment and dot-matrix range) and bar graph (7-digit, LEDs freely configurable) for graphical display, e.g., as a traffic light indicator.



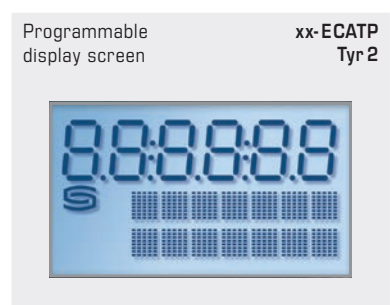
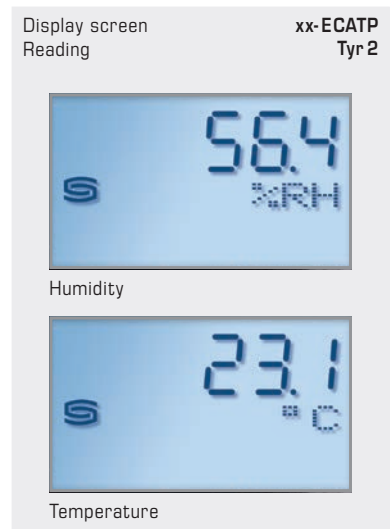
KFTF-EtherCATP

**TECHNICAL DATA**

Power supply:	24 V DC via EtherCATP (U <sub>S</sub> )
Power consumption:	< 3 W
Bus protocol:	<b>EtherCAT</b>
Radio technology:	<b>Bluetooth</b> (LE)
Data points:	temperature [°C], relative humidity [% RH], dew point [°C], absolute humidity [g/m <sup>3</sup> ], mixture ratio [g/kg], enthalpy [kJ/kg]
Sensor:	<b>Digital humidity sensor with integrated temperature sensor</b> , low hysteresis, high long-term stability
Measuring range:	0...100 % RH (humidity) $-35...+80^{\circ}\text{C}$ (temperature)
Accuracy in humidity:	typically $\pm 2.0\%$ (20...80 % RH) at $+25^{\circ}\text{C}$ , otherwise $\pm 3.0\%$
Accuracy in temperature:	typically $\pm 0.4\text{ K}$ at $+25^{\circ}\text{C}$
Long-term stability:	$\pm 1\%$ per year
Medium:	clean air and non-aggressive, non-combustible gases
Sensor protection:	plastic sinter filter, $\varnothing 14\text{mm}$ , $l = 35\text{mm}$ , replaceable (optionally <b>metal</b> sinter filter, $\varnothing 16\text{mm}$ , $l = 32\text{mm}$ )
Protective tube:	<b>PLEUROFORM™</b> , material polyamide (PA6), with torsion protection, $\varnothing 20\text{mm}$ , $NL = 235\text{mm}$ (optionally 100mm), $v_{\text{max}} = 30\text{ m/s}$ (air) (option on request in stainless steel <b>V2A</b> (1.4301), $\varnothing 16\text{mm}$ )
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 dimension:	126 x 90 x 50mm (Tyr 2)
Cable connection:	<b>M8 connector</b> , EtherCATP-encoded
Process connection:	by plastic mounting flange (included in the delivery scope)
Ambient temperature:	$-30...+70^{\circ}\text{C}$
Permitted humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	<b>IP 54</b> (according to EN 60 529)
Standards:	CE conformity, according to EMC Directive 2014 / 30 / EU, according to RED 2014 / 53 / EU
Equipment:	<b>Display with illumination</b> , 3-line, customised programming, cutout approx. W 51 x H 29mm, to display actual humidity, actual temperature and/or an alternative characteristic value or a customised display value. <b>Bar graph</b> , 7-digit, LEDs freely configurable, to graphically display the reading.
<b>ACCESSORIES</b>	see table



**EtherCATP**  
Cable connection and  
LED status display

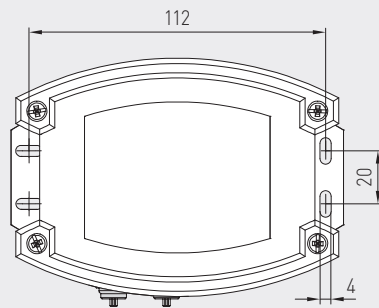
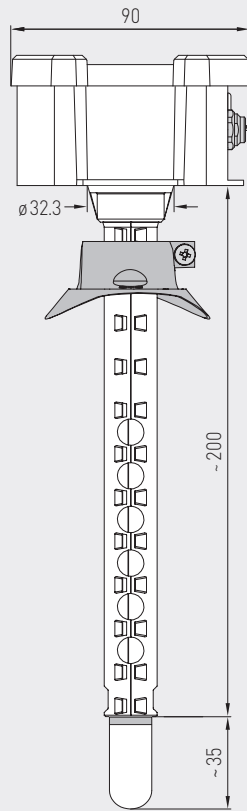
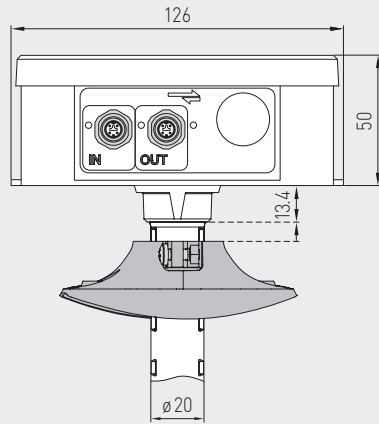




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Dimensional drawing  
(mm)

KFTF-EtherCAT P



MB-plug-in connector  
EtherCAT P-encoded

SF-K  
Plastic sinter filter  
(standard)



SF-M  
Metal sinter filter  
(optional)



Protective tube made from  
stainless steel  
(optional on request)

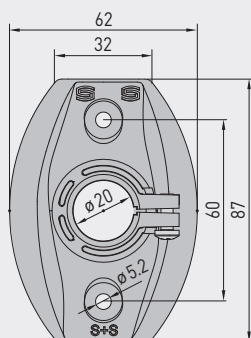
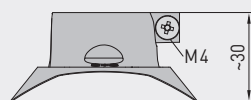


KFTF-EtherCAT P  
with display and bar graph



Dimensional drawing  
(mm)

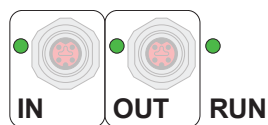
MFT-20-K



MFT-20-K  
Mounting flange,  
plastic  
(included in the scope  
of delivery)

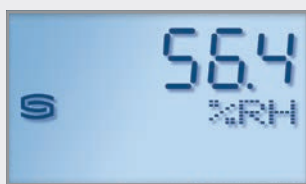


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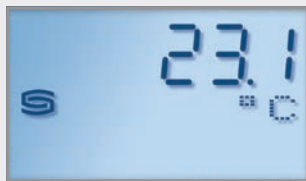


EtherCAT P	LED status display
<b>1. LED</b>	<b>"IN"</b>
off	no connection to upstream EtherCAT module
illuminated	LINK: connection to upstream EtherCAT module
blinking	ACT: communication with upstream EtherCAT module
<b>2. LED</b>	<b>"OUT"</b>
off	no connection to downstream EtherCAT module
illuminated	LINK: connection to downstream EtherCAT module
blinking	ACT: communication with downstream EtherCAT module
<b>3. LED</b>	<b>"RUN"</b>
off	EtherCAT module is in "Init" state
quickly blinking	EtherCAT module is in "Pre-Operational" state
slowly blinking	EtherCAT module is in "Safe-Operational" state
illuminated	EtherCAT module is in "Operational" state
<b>The status LEDs are next to the cable connection.</b>	

Display screen Reading xx-ECATP Tyr 2

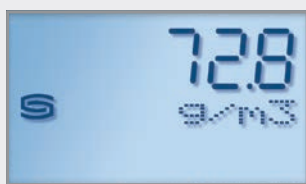


Humidity

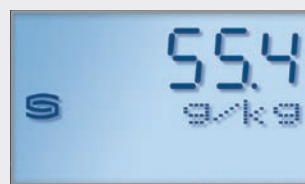


Temperature

Display screen alternative output variables xx-ECATP Tyr 2



Absolute humidity



Mixture ratio



Dew point



Enthalpy

Programmable display screen xx-ECATP Tyr 2



Use the EtherCAT interface to program the **LCD display**.  
With only one output value selected, the display is static;  
with several values selected, the display is cyclical with one after the other.

In the **first line** the value is displayed and in the **second line** the corresponding unit. The **third line** is empty by default if there are no customised inputs.

The entire display in the 7-segment range as well as in the dot-matrix range can be **customised**.



S+S REGELTECHNIK

HYGRASGARD® KFTF-EtherCAT P

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KFTF-EtherCAT P  
with display and bar graph



HYGRASGARD® KFTF-EtherCAT P		Duct humidity and temperature sensor ( $\pm 2.0\%$ ), with EtherCAT port				
Type / WG02	Measuring Range / Readout	Temperature	Output	Bar graph Display	Item No.	Price
<b>KFTF-ECATP xx</b>						
KFTF-ECATP	0 ... 100% RH (default) 0 ... 80 g / kg (MV) 0 ... 80 g / m <sup>3</sup> (a.F.) 0 ... 85 kJ / kg (ENT.) -20 ... +80 °C (TP)	-35 ... +80 °C	EtherCAT P		2003-4221-9100-001	<b>416,79 €</b>
KFTF-ECATP LCD	0 ... 100% RH (default) 0 ... 80 g / kg (MV) 0 ... 80 g / m <sup>3</sup> (a.F.) 0 ... 85 kJ / kg (ENT.) -20 ... +80 °C (TP)	-35 ... +80 °C	EtherCAT P	<input type="checkbox"/> <input checked="" type="checkbox"/>	2003-4222-9100-001	<b>466,34 €</b>
Optional:	shortened protective tube <b>PLEUROFORM™</b> , NL = 100 mm				on request	
<b>Note:</b>	Cable connection with <b>M8 plug-in connector</b> (EtherCATP-encoded)					

ACCESSORIES			
<b>MFT-20-K</b>	<b>Mounting flange</b> , plastic (included in the scope of delivery)	7000-0031-0000-000	<b>10,24 €</b>
<b>SF-K</b>	<b>Plastic sinter filter</b> , Ø 16 mm, L = 35 mm, exchangeable	7000-0050-2310-000	<b>13,78 €</b>
<b>SF-M</b>	<b>Metal sinter filter</b> , Ø 16 mm, L = 32 mm, exchangeable, stainless steel <b>V4A</b> (1.4404)	7000-0050-2200-100	<b>45,34 €</b>

For further information, see last chapter Accessories!