

**Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output (Automatic Output Switching)**

**Patented quality product** (patent no. DE 10 2015 015 941 B4)

Calibratable temperature measuring transducer with sleeve sensor **THERMASGARD® HFTM**, with eight switchable measuring ranges (max. -20...+150 °C), aktivem Ausgang, housing made from impact-resistant plastic with quick-release screws, with cable gland or M12 connector according to DIN EN 61076-2-101, optionally with /without display. The standard display can be changed from SI [°C] to imperial [°F] units via DIP switch.

The measuring transducer converts the measured variables into a standard signal of 0-10V or 4...20 mA. The unit with **Automatic Output Switching (AOS)** detects the required output type and automatically switches to U or I output. Alternatively, a **type version (2-wire)** with 2-wire connection and I output is available.

The temperature transmitter with remote sensor is used to detect temperatures in liquid and gaseous media e.g. if installed in an immersion sleeve or as a duct sensor. A direct, permanent use in liquids is possible in combination with immersion sleeves **THE** (see chapter Accessories). The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

**HFTM**  
with cable gland



**HFTM - Q**  
with M12 connector



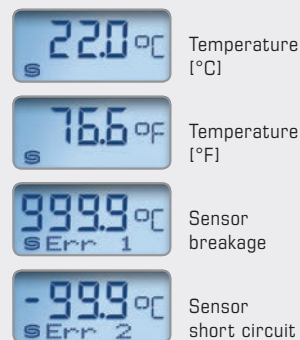
**TECHNICAL DATA**

<b>HFTM - I</b>	
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3V
Working resistance:	$R_b$ (Ohm) = $(U_b - 14 V) / 0.02 A$
Connection type:	2-wire connection
Output:	<b>4...20 mA</b>
<b>HFTM - A (AOS)</b>	
Power supply:	24 V AC / DC (± 10%)
Load resistance:	$R_L = 25...450 \text{ Ohm}$ with AOS I variant $R_L > 15 \text{ kOhm}$ with AOS U variant
Connection type:	3-wire connection
Output:	<b>automatic 0-10 V / 4...20 mA</b> (via <b>Automatic Output Switching</b> – the unit detects the required output type and automatically switches to U or I output)

<b>GENERAL</b>	
Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
System of units:	<b>SI</b> (default) or <b>Imperial</b> (switchable via DIP switch)
Data points:	Temperature [°C] [°F]
Measuring ranges:	<b>multi-range switching with 8 measuring ranges</b> , see table (other ranges optional) <b>with manual zero point correction (± 10K)</b>
Sensor:	Pt1000, DIN EN 60751, class B ( <b>Perfect Sensor Protection</b> ) at IP68)
Accuracy, temperature:	typically ± 0.2K at +25 °C
Insulating resistance:	≥ 100 MΩ, at +20 °C (500V DC)
Sensor protection:	sensor sleeve, stainless steel V4A (1.4571), Ø = 6 mm, nominal length NL = 50 mm (optional 30...400 mm)
Sensor cable:	Silicone, SiHF, 2x0.25mm <sup>2</sup> ; cable length (KL) = 1.5m (other lengths and jacket materials, e.g. PTFE or glass fibre with steel mesh, available on request)
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimension:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable connection:	<b>cable gland</b> , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) <b>or</b> <b>M12 connector</b> (male, 5-pin, A-code) according to DIN EN 61076-2-101
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> , via terminal screws
Ambient temperature:	measuring transducer -30...+70 °C
Permissible humidity:	< 95% RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type housing:	<b>IP65</b> (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)
Protection type sensor:	<b>IP65</b> (according to EN 60 529) <b>sleeve</b> humidity-tight (standard) <b>IP68</b> (according to EN 60 529) <b>sleeve</b> water-tight (optional) <b>IP54</b> (according to EN 60 529) with <b>glass fibre</b> cable (optional)
Standards:	CE conformity according to EMC directive 2014 / 30 / EU
Optional:	two-line <b>display with illumination</b> , cutout approx. 36 x 15 mm (W x H), for displaying the <b>ACTUAL</b> temperature and the internal diagnostics (sensor breakage, sensor short circuit)

**ACCESSORIES** (see table)

Display and internal diagnostics  
**THERMASGARD®**  
**Measuring transducer with display**



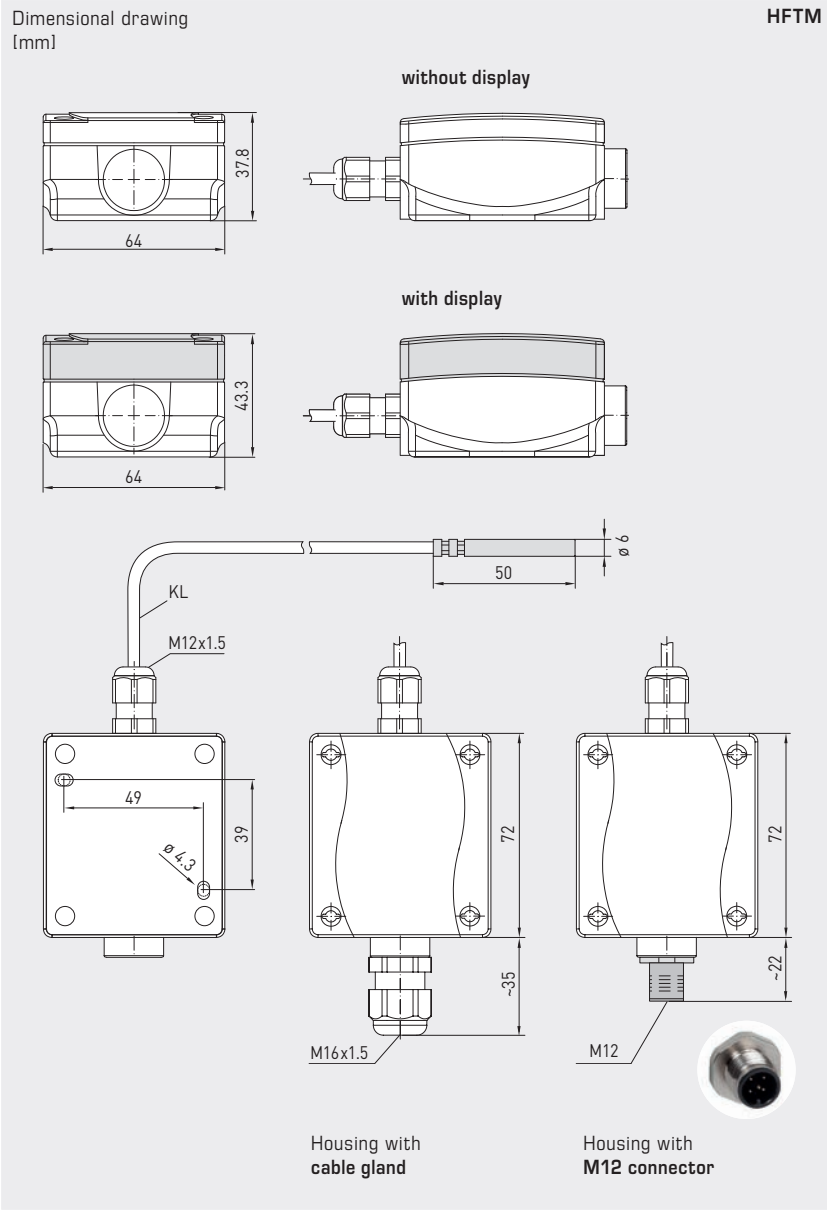


**NEW**

S+S REGELTECHNIK

Thermasgard® HFTM

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output (Automatic Output Switching)



High-performance encapsulation against vibration, mechanical stress and humidity

**PS-PROTECTION**  
PERFECT SENSOR PROTECTION

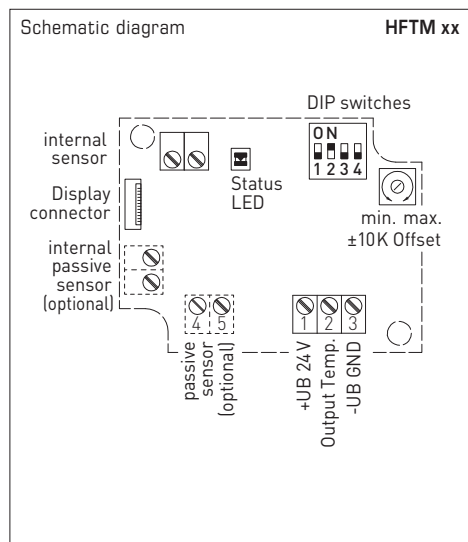
Automatic detection and switching to standard signal 0...10V or 4...20 mA

**AOS-PATENTED**  
AUTOMATIC OUTPUT SWITCHING

-  **IP 65** (standard) humidity-tight
-  **IP 68** (optional) water-tight Perfect Sensor Protection
-  **IP 54** (optional) with glass fibre cable



Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output (Automatic Output Switching)



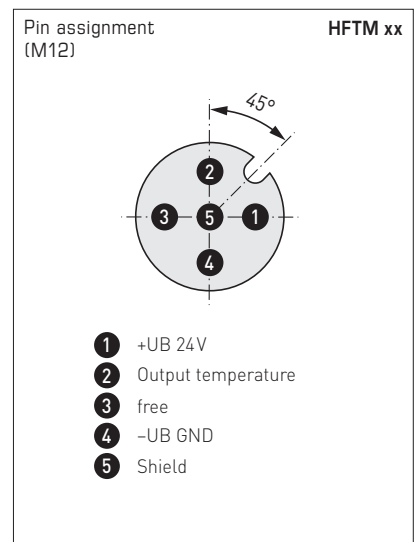
**2-wire connection\* HFTM - I**

- 1 +UB 24V DC
- 2 Output Temp. 4...20mA
- 3 -UB GND (optional for backlighting)

\* 2-wire connection for devices with / without display (not illuminated)  
3-wire connection for devices with illuminated display

**3-wire connection (AOS) HFTM - A**

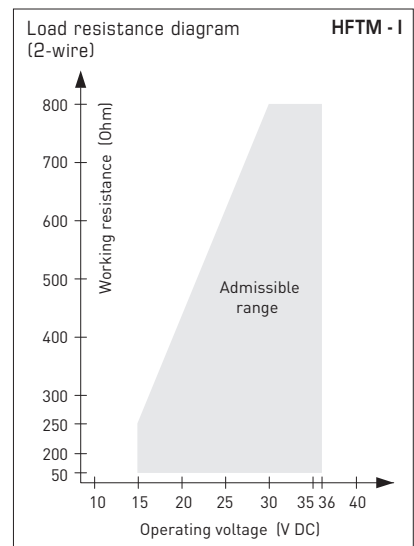
- 1 +UB 24V AC/DC
- 2 Output Temp. 0-10V / 4...20mA
- 3 -UB GND



Measuring ranges [°C]	DIP 1	DIP 2	DIP 3	Measuring ranges [°F]
-20... +150 °C	ON	ON	ON	-4... +302 °F
-50... +50 °C	OFF	ON	ON	-58... +122 °F
-20... +80 °C	ON	OFF	ON	-4... +176 °F
-30... +60 °C	OFF	OFF	ON	-22... +140 °F
0... +40 °C	ON	ON	OFF	32... +104 °F
<b>0... +50 °C*</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>	<b>32... +122 °F*</b>
0... +100 °C	ON	OFF	OFF	32... +212 °F
0... +150 °C	OFF	OFF	OFF	32... +302 °F

Display [°C] / [°F]	DIP 4
Imperial [°F]	ON
<b>SI (default) [°C]</b>	<b>OFF</b>

**Display switchable**  
Temperature [°C] → [°F]  
The display value depends on the set unit system (DIP 4).



For further technical information, see the operating instructions





**NEW**

S+S REGELTECHNIK

THERMASGARD® HFTM

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output (Automatic Output Switching)

**HFTM-Q**  
with M12 connector



**HFTM**  
with cable gland

THERMASGARD® HFTM		Sleeve sensor with temperature measuring transducer (with cable gland)				
Type / WG01	Output	Type	Display	Item No.	Price	
<b>HFTM-I</b>	<b>(2-wire)</b>					
HFTM-I	4...20 mA	Remote sensor		1101-1152-0219-920	<b>115,32 €</b>	
HFTM-I LCD	4...20 mA	Remote sensor	■	1101-1152-2219-920	<b>171,51 €</b>	
<b>HFTM-A</b>	<b>(3-wire AOS)</b>					
HFTM-A	0-10 V / 4...20 mA	Remote sensor		1101-115E-0219-920	<b>115,32 €</b>	
HFTM-A LCD	0-10 V / 4...20 mA	Remote sensor	■	1101-115E-2219-920	<b>171,51 €</b>	
<b>Automatic Output Switching (AOS):</b>	Patented analogue interface (patent no. DE 10 2015 015 941 B4) Unit automatically detects the required output type 0-10 V or 4...20 mA.					
<b>Housing variant:</b>	Cable connection with cable gland					
Extra charge:	other measuring ranges optional Protection type <b>IP68</b> (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (silicone / PTFE / glass fibre) Other lengths of protection sleeve optional				<b>28,03 €</b> <b>3,75 €</b> on request on request	

THERMASGARD® HFTM-Q		Sleeve sensor with temperature measuring transducer (with M12 connector)				
Type / WG01I	Output	Type	Display	Item No.	Price	
<b>HFTM-I Q</b>	<b>(2-wire)</b>					
HFTM-I Q	4...20 mA	Remote sensor	●	2001-2111-2100-001	<b>161,56 €</b>	
HFTM-I Q LCD	4...20 mA	Remote Sensor	● ■	2001-2112-2100-001	<b>217,75 €</b>	
<b>HFTM-A Q</b>	<b>(3-wire AOS)</b>					
HFTM-A Q	0-10 V / 4...20 mA	Remote sensor	●	2001-2111-B100-001	<b>161,56 €</b>	
HFTM-A Q LCD	0-10 V / 4...20 mA	Remote Sensor	● ■	2001-2112-B100-001	<b>217,75 €</b>	
<b>Automatic Output Switching (AOS):</b>	Patented analogue interface (patent no. DE 10 2015 015 941 B4) Unit automatically detects the required output type 0-10 V or 4...20 mA.					
<b>Housing variant "Q":</b>	Cable connection with <b>M12 connector</b> (male, 5-pin, A-code)					
Extra charge:	see table above!					

ACCESSORIES	
<b>THE-xx</b>	Immersion sleeve, stainless steel <b>V4A</b> (1.4571) or polished brass, Ø = 9 mm
	<b>Special accessories for M12 connector</b> see chapter Accessories!