

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.

TECHNICAL DATA

HFTM - I

Power supply:	15...36V DC, depending on working resistance, residual ripple stabilised ± 0.3V
Working resistance:	$R_g \text{ (Ohm)} = (U_g - 14V) / 0.02A$
Connection type:	2-wire connection
Output:	4...20 mA

HFTM - A (AOS)

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:	automatic 0-10V / 4...20 mA (via Automatic Output Switching – the unit detects the required output type and automatically switches to U or I output)

GENERAL

Power consumption:	< 1.0VA / 24V DC; < 2.2VA / 24V AC
System of units:	SI (default) or Imperial (switchable via DIP switch)
Data points:	Temperature [°C] [°F]
Measuring ranges:	multi-range switching with 8 measuring ranges , see table (other ranges optional) with manual zero point correction (± 10K)
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection) at IP68)
Deviation, 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, 2x 0.25mm²; 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:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector (male, 5-pin, A-code) according to DIN EN 61076-2-101
Electrical connection:	0.14 - 1.5 mm², 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:	IP65 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)
Protection type sensor:	IP65 (according to EN 60 529) sleeve humidity-tight (standard) IP68 (according to EN 60 529) sleeve water-tight (optional) IP54 (according to EN 60 529) with glass fibre cable (optional)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC directive 2014 / 30 / EU
Optional:	two-line display with illumination , cutout approx. 36 x 15 mm (W x H), for displaying the ACTUAL temperature and the internal diagnostics (sensor breakage, sensor short circuit)

ACCESSORIES

(see table)

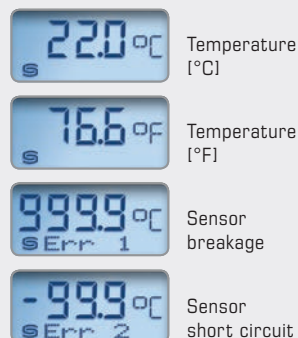
HFTM
with cable gland



HFTM - Q
with M12 connector



Display and internal diagnostics
THERMASGARD®
Measuring transducer with display



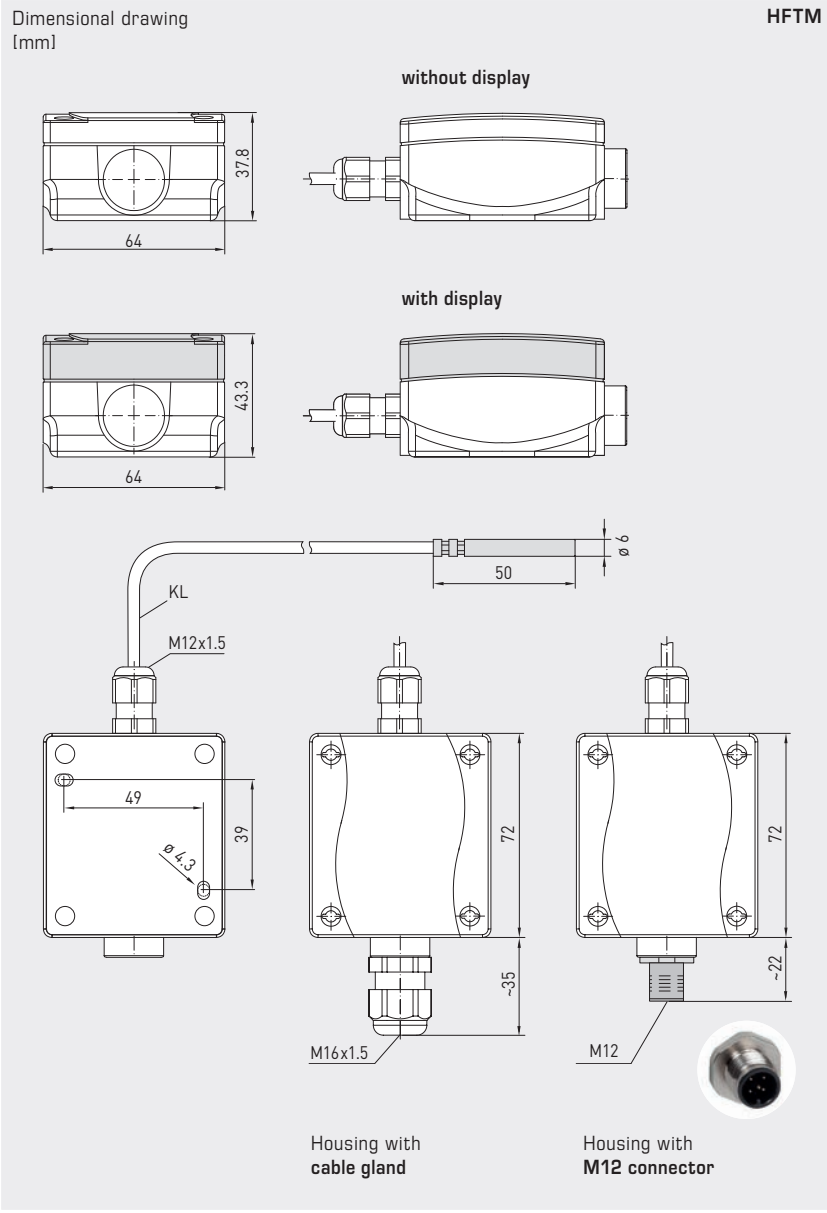


NEW

S+S REGELTECHNIK

Thermasgard® HFTM

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



HFTM
with cable gland
and display



HFTM-Q
with M12 connector
and display



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

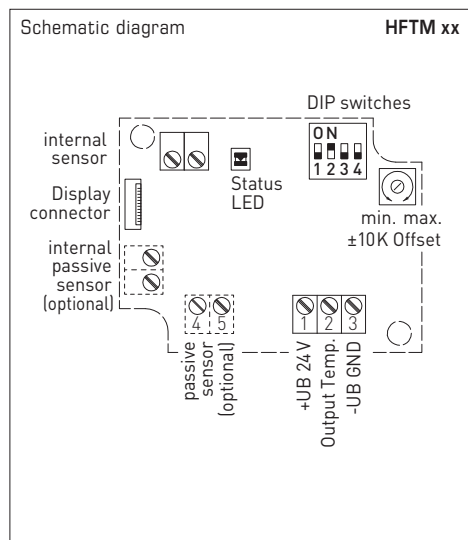


IP 68 (optional)
water-tight
Perfect Sensor Protection



IP 54 (optional)
with glass fibre cable

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



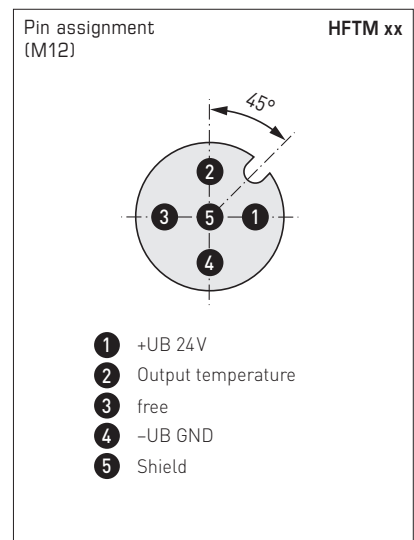
2-wire connection* **HFTM - I**

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**

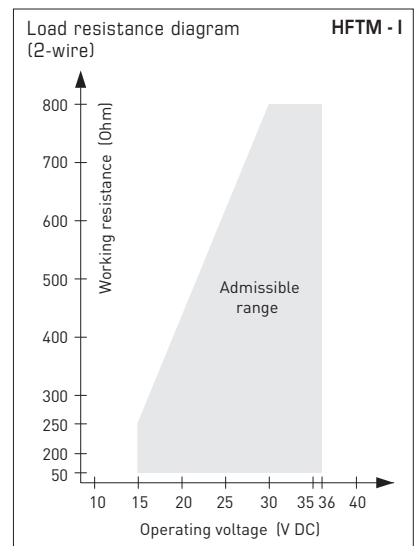
1	+UB 24V AC/DC
2	Output Temp. 0-10V / 4...20mA
3	-UB GND



Measuring ranges [°C] (adjustable)	DIP 1	DIP 2	DIP 3
-20...+ 150 °C	ON	ON	ON
-50... + 50 °C	OFF	ON	ON
-20... + 80 °C	ON	OFF	ON
-30... + 60 °C	OFF	OFF	ON
0... + 40 °C	ON	ON	OFF
0... + 50 °C (default)	OFF	ON	OFF
0...+ 100 °C	ON	OFF	OFF
0...+ 150 °C	OFF	OFF	OFF

Display (switchable)	DIP 4	
Imperial	°F	ON
SI (default)	°C	OFF

Display
Temperature [°C] → [°F]
The display value depends on the set unit system (DIP4).



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	
HFTM-I	(2-wire)					
HFTM-I	4...20 mA	Remote sensor		1101-1152-0219-920	107,65 €	
HFTM-I LCD	4...20 mA	Remote sensor	■	1101-1152-2219-920	160,11 €	
HFTM-A	(3-wire AOS)					
HFTM-A	0-10 V / 4...20 mA	Remote sensor		1101-115E-0219-920	107,65 €	
HFTM-A LCD	0-10 V / 4...20 mA	Remote sensor	■	1101-115E-2219-920	160,11 €	
Automatic Output Switching (AOS):	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.					
Housing variant:	Cable connection with cable gland					
Extra charge:	other measuring ranges optional Protection type IP68 (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (silicone / PTFE / glass fibre) Other lengths of protection sleeve optional				26,16 € 3,50 € on request on request	

THERMASGARD® HFTM-Q		Sleeve sensor with temperature measuring transducer (with M12 connector)				
Type / WG01I	Output	Type	Display	Item No.	Price	
HFTM-I Q	(2-wire)					
HFTM-I Q	4...20 mA	Remote sensor	●	2001-2111-2100-001	150,82 €	
HFTM-I Q LCD	4...20 mA	Remote Sensor	● ■	2001-2112-2100-001	203,28 €	
HFTM-A Q	(3-wire AOS)					
HFTM-A Q	0-10 V / 4...20 mA	Remote sensor	●	2001-2111-B100-001	150,82 €	
HFTM-A Q LCD	0-10 V / 4...20 mA	Remote Sensor	● ■	2001-2112-B100-001	203,28 €	
Automatic Output Switching (AOS):	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.					
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)					
Extra charge:	see table above!					

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