

**Sleeve sensor with temperature measuring transducer,
calibratable, with multi-range switching and
active output**

Calibratable temperature measuring transducer with sleeve sensor **THERMASGARD® HFTM** with eight switchable measuring ranges, continuous output, housing made from impact-resistant plastic with quick-release screws, optionally **with/without display**, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

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

Power supply:	24 V AC / DC (± 10 %) for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_a \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant, see working resistance diagram
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection at IP68) sensor external
Measuring ranges:	multi-range switching with 8 switchable measuring ranges see table (other measuring ranges optional) with manual zero point correction (± 10 K)
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	0 - 10 V or 4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
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
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 dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
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, 2x0.25mm²; cable length (KL) = 1.5m (other lengths and jacket materials, e.g. PTFE or glass fibre with steel mesh, available on request)
Ambient temperature:	measuring transducer -30...+70 °C
Permitted humidity:	< 95 % RH, non-precipitating air
Protection class:	III (according to EN 60730)
Protection type housing:	IP 65 (according to EN 60529) Housing tested, TÜV SÜD, Report No.713139052 (Tyr 1)
Protection type sensor:	IP 65 (according to EN 60529) sleeve humidity-tight (standard) IP 68 (according to EN 60529) sleeve water-tight (optional) IP 54 (according to EN 60529) with glass fibre cable (optional)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	display with illumination , two-line, cut-out approx. 36x15 mm (B x H), to display the actual temperature and internal diagnostics (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)
ACCESSORIES	(see table)

HFTM
with cable gland



HFTM-Q
with M12 connector





S+S REGELTECHNIK

THERMASGARD® HFTM

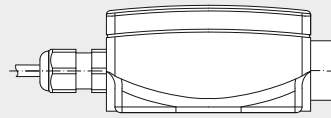
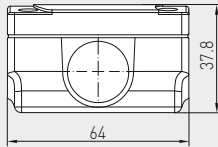
Sleeve sensor with temperature measuring transducer,
calibratable, with multi-range switching and
active output



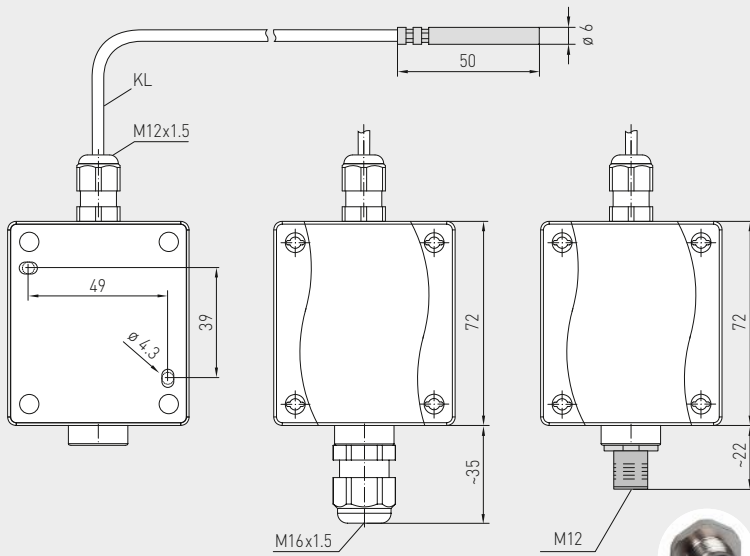
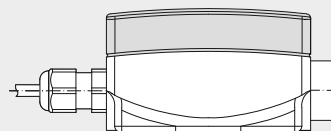
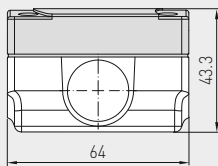
Dimensional drawing

HFTM

without display



with display



Housing with
cable gland

Housing with
M12 connector

HFTM
with cable gland
and display



HFTM-Q
with M12 connector
and display



Display and internal diagnostics

THERMASGARD®
Measuring transducer with display



Standard



Measuring range
exceeded



Measuring range
not reached



Sensor
breakage



Sensor
short circuit



IP65 (standard)
humidity-tight



IP68 (optional)
water-tight
Perfect Sensor Protection



IP54 (optional)
with glass fibre cable

High-performance encapsulation against
vibration, mechanical stress and humidity

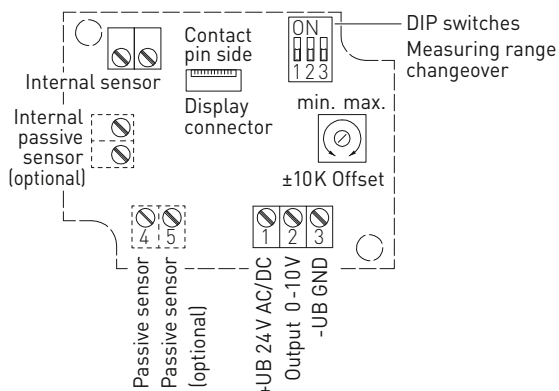


PS-PROTECTION
PERFECT SENSOR PROTECTION

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

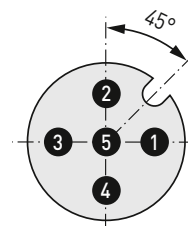
Schematic diagram

HFTM-U



Pin assignment (M12)

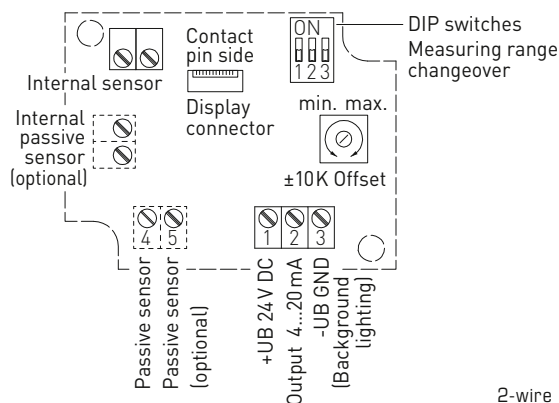
HFTM-U



- 1 +UB 24V AC/DC
- 2 Output temperature 0-10V [°C]
- 3 free
- 4 -UB GND
- 5 Shield

Schematic diagram *

HFTM-I

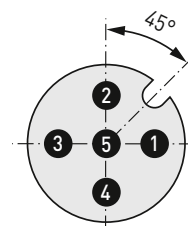


Connection*:

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

Pin assignment (M12)

HFTM-I



- 1 +UB 24V DC
- 2 Output temperature 4...20mA [°C]
- 3 free
- 4 -UB GND (optional for LCD backlighting)
- 5 Shield

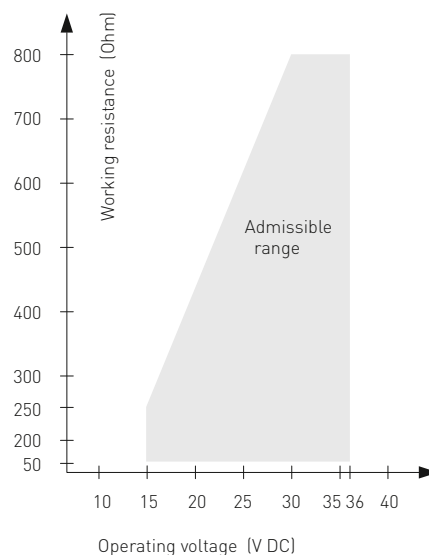
Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
-20... +150 °C	ON	ON	ON
-50... +50 °C	OFF	ON	ON
-20... +80 °C	ON	OFF	ON
-30... +60 °C	OFF	OFF	ON
0... +40 °C	ON	ON	OFF
0... +50 °C (default)	OFF	ON	OFF
0... +100 °C	ON	OFF	OFF
0... +150 °C	OFF	OFF	OFF

HFTM-xx
with display,
hinged



Load resistance diagram
4...20 mA

HFTM-I





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THERMASGARD® HFTM

Sleeve sensor with temperature measuring transducer,
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active output

HFTM-Q
with M12 connector

HFTM
with cable gland

THERMASGARD® HFTM

Sleeve sensor with temperature measuring transducer
(with cable gland)

Type / WG01	Sensor	Output	Type	Display	Item No.
HFTM					
HFTM-I	Pt1000	4...20 mA	Remote sensor		1101-1152-0219-920
HFTM-I LCD	Pt1000	4...20 mA	Remote sensor	■	1101-1152-2219-920
HFTM-U	Pt1000	0-10 V	Remote sensor		1101-1151-0219-920
HFTM-U LCD	Pt1000	0-10 V	Remote sensor	■	1101-1151-2219-920
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				on request on request

THERMASGARD® HFTM-Q

Sleeve sensor with temperature measuring transducer
(with M12 connector)

Type / WG01I	Sensor	Output	Type	Display ● = Q	Item No.
HFTM-Q					
HFTM-I Q	Pt1000	4...20 mA	Remote sensor	●	2001-2111-2100-001
HFTM-I Q LCD	Pt1000	4...20 mA	Remote sensor	● ■	2001-2112-2100-001
HFTM-U Q	Pt1000	0-10 V	Remote sensor	●	2001-2111-1100-001
HFTM-U Q LCD	Pt1000	0-10 V	Remote sensor	● ■	2001-2112-1100-001
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 see chapter Accessories!
	Special accessories for M12 connector see chapter Accessories!