

TEMPERATUR AKTIV



RØR- & KANALFØLERE

**Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output**

Patented quality product (Immersion sensor patent no. DE 10 2012 017 500.0)

Calibratable temperature measuring transducer **THERMASGARD® TM 43** with eight switchable measuring ranges, continuous linear output, straight protective tube, housing made from impact-resistant plastic with snap-on lid.

Calibratable temperature measuring transducer **THERMASGARD® TM 65** with eight switchable measuring ranges, continuous linear output, straight protective tube, housing made from impact-resistant plastic with quick-locking screws, **with/without optional display**.

For the detection of temperatures in liquid or gaseous media. For aggressive media, stainless steel immersion sleeves must be used. It is used e.g. in piping systems, in heating technology, in storage tanks, in district heating compact stations, in hot-water and cold-water systems, in oil and lubricant circulation systems, in mechanical, apparatus and plant engineering as well as in the entire industrial sector. 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
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection)
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) with manual zero point correction (± 10 K)
Deviation, temperature:	typically ± 0.2 K at +25 °C
Output:	0 - 10 V or 4...20 mA
Ambient temperature:	measuring transducer -30...+70 °C
Connection type:	2- or 3-wire connection
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016), TM 43 with snap-on lid TM 65 with quick-locking screws (slotted / Phillips head combination), housing cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 / Tyr 01 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 according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm² via terminal screws on circuit board
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	TM 43 IP54 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) TM 65 IP65 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state
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 (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)

ACCESSORIES

MF-15-K	Mounting flange , plastic, 56.8 x 84.3 mm, Ø = 15.2 mm tube gland, $T_{max} = +100 \text{ °C}$
TH08-ms / xx	Immersion sleeve, brass, nickel-plated , Ø = 8 mm, $T_{max} = +150 \text{ °C}$, $p_{max} = 10 \text{ bar}$
TH08-VA / xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 8 mm, $T_{max} = +600 \text{ °C}$, $p_{max} = 40 \text{ bar}$
TH08-VA / xx / 90	Immersion sleeve, stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, $T_{max} = +600 \text{ °C}$, $p_{max} = 40 \text{ bar}$

High-performance encapsulation against
vibration, mechanical stress and humidity



TM 43
with snap-on lid
(IP 54)



Display and internal diagnostics
THERMASGARD®
Measuring transducer with display



Standard



Measuring range
exceeded



Measuring range
not reached



Sensor
breakage



Sensor
short circuit



S+S REGELTECHNIK

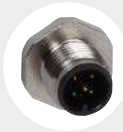
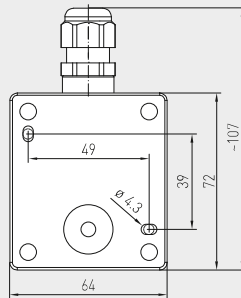
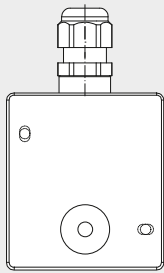
THERMASGARD® TM 43
THERMASGARD® TM 65

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

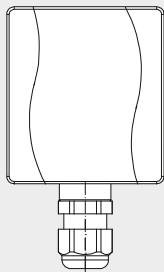
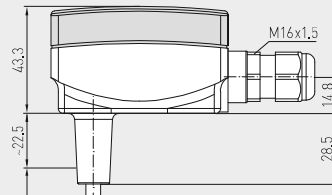
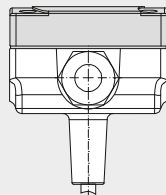
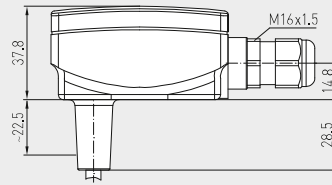
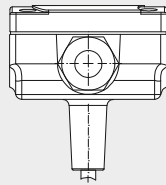


Dimensional drawing

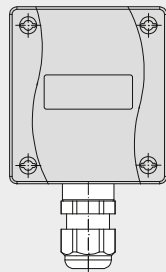
TM 43
TM 65



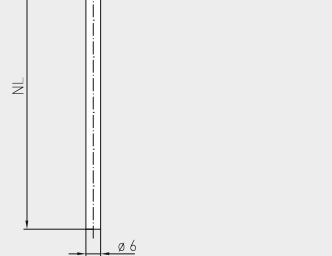
M12 connector
(optional on request)



with snap-on lid



with quick-locking
screws



TM 65

with quick-locking screws
(IP 65)



TM 65

with display and
quick-locking screws
(IP 65)



PATENTED

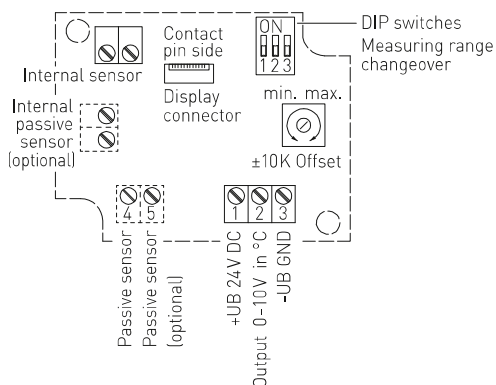


TM 65

Basic device
with accessories

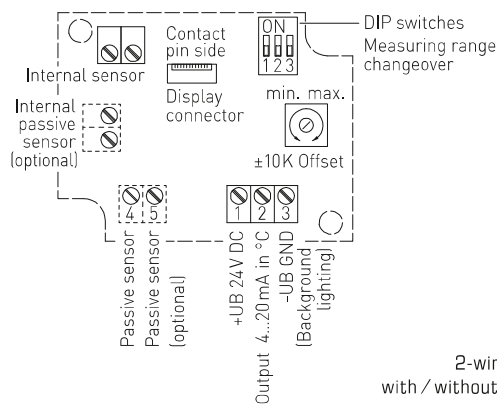
3-wire connection

TM 43-U
TM 65-U



2- or 3-wire connection*

TM 43-I
TM 65-I



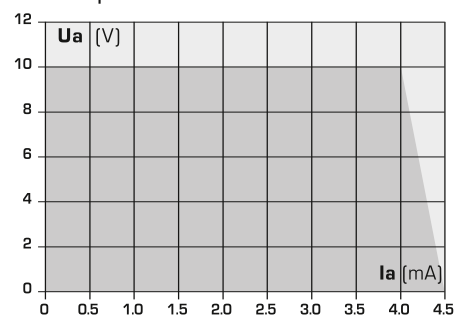
Connection*:

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

3-wire connection for devices
with illuminated display

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

Dependency of output voltage
on output current



TM 65
with display and
quick-locking screws
(IP 65)



TM 65
with quick-locking screws
(IP 65)



TM 43
with snap-on lid
(IP 54)





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THERMASGARD® TM 43
THERMASGARD® TM 65

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output



THERMASGARD® TM 43 Temperature measuring transducer (basic device with snap-on lid), <i>Standard</i>				
Type / WG01B	Output	Inserted Length (EL)	Item No.	Price
TM 43-I			IP54, I-variant	
TM43-I 50mm	4...20 mA	50 mm	1101-7112-0019-900	68,85 €
TM43-I 100mm	4...20 mA	100 mm	1101-7112-0029-900	69,98 €
TM43-I 150mm	4...20 mA	150 mm	1101-7112-0039-900	71,00 €
TM43-I 200mm	4...20 mA	200 mm	1101-7112-0049-900	71,34 €
TM43-I 250mm	4...20 mA	250 mm	1101-7112-0059-900	72,53 €
TM43-I 300mm	4...20 mA	300 mm	1101-7112-0069-900	73,71 €
TM 43-U			IP54, U-variant	
TM43-U 50mm	0 - 10 V	50 mm	1101-7111-0019-900	68,85 €
TM43-U 100mm	0 - 10 V	100 mm	1101-7111-0029-900	69,98 €
TM43-U 150mm	0 - 10 V	150 mm	1101-7111-0039-900	71,00 €
TM43-U 200mm	0 - 10 V	200 mm	1101-7111-0049-900	71,34 €
TM43-U 250mm	0 - 10 V	250 mm	1101-7111-0059-900	72,53 €
TM43-U 300mm	0 - 10 V	300 mm	1101-7111-0069-900	73,71 €

THERMASGARD® TM 65 Temperature measuring transducer (basic device with quick-locking screws), <i>Premium</i>					
Type / WG01	Output	Inserted Length (EL)	Display	Item No.	Price
TM 65-I			IP65, I-variant		
TM65-I 50mm	4...20 mA	50 mm		1101-7122-0019-900	95,41 €
TM65-I 50mm LCD	4...20 mA	50 mm	■	1101-7122-2019-900	143,91 €
TM65-I 100mm	4...20 mA	100 mm		1101-7122-0029-900	95,68 €
TM65-I 100mm LCD	4...20 mA	100 mm	■	1101-7122-2029-900	144,16 €
TM65-I 150mm	4...20 mA	150 mm		1101-7122-0039-900	95,89 €
TM65-I 150mm LCD	4...20 mA	150 mm	■	1101-7122-2039-900	144,40 €
TM65-I 200mm	4...20 mA	200 mm		1101-7122-0049-900	96,09 €
TM65-I 200mm LCD	4...20 mA	200 mm	■	1101-7122-2049-900	144,59 €
TM65-I 250mm	4...20 mA	250 mm		1101-7122-0059-900	96,39 €
TM65-I 250mm LCD	4...20 mA	250 mm	■	1101-7122-2059-900	144,89 €
TM65-I 300mm	4...20 mA	300 mm		1101-7122-0069-900	97,11 €
TM65-I 300mm LCD	4...20 mA	300 mm	■	1101-7122-2069-900	145,59 €
TM65-I 400mm	4...20 mA	400 mm		1101-7122-0089-900	99,07 €
TM65-I 400mm LCD	4...20 mA	400 mm	■	1101-7122-2089-900	147,57 €
TM 65-U			IP65, U-variant		
TM65-U 50mm	0 - 10 V	50 mm		1101-7121-0019-900	95,41 €
TM65-U 50mm LCD	0 - 10 V	50 mm	■	1101-7121-2019-900	143,91 €
TM65-U 100mm	0 - 10 V	100 mm		1101-7121-0029-900	95,68 €
TM65-U 100mm LCD	0 - 10 V	100 mm	■	1101-7121-2029-900	144,16 €
TM65-U 150mm	0 - 10 V	150 mm		1101-7121-0039-900	95,89 €
TM65-U 150mm LCD	0 - 10 V	150 mm	■	1101-7121-2039-900	144,40 €
TM65-U 200mm	0 - 10 V	200 mm		1101-7121-0049-900	96,09 €
TM65-U 200mm LCD	0 - 10 V	200 mm	■	1101-7121-2049-900	144,59 €
TM65-U 250mm	0 - 10 V	250 mm		1101-7121-0059-900	96,39 €
TM65-U 250mm LCD	0 - 10 V	250 mm	■	1101-7121-2059-900	144,89 €
TM65-U 300mm	0 - 10 V	300 mm		1101-7121-0069-900	97,11 €
TM65-U 300mm LCD	0 - 10 V	300 mm	■	1101-7121-2069-900	145,59 €
TM65-U 400mm	0 - 10 V	400 mm		1101-7121-0089-900	99,07 €
TM65-U 400mm LCD	0 - 10 V	400 mm	■	1101-7121-2089-900	147,57 €
Extra charge:	Other ranges optional Cable connection with M12 connector according to DIN EN 61076-2-101 on request				24,19 €

High-performance encapsulation against
vibration, mechanical stress and humidity



Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

One basic device in four variants ...



PATENTED



**TMxx +
TH08-ms/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
brass, nickel-plated

**TMxx +
TH08-VA/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
stainless steel, V4A

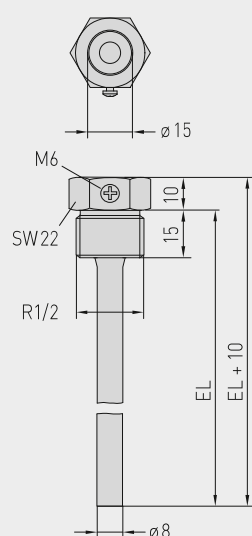
**TMxx +
TH08-VA/xx/90**

Immersion / screw-in
temperature sensor with
immersion sleeve with
neck tube, stainless steel, V4A

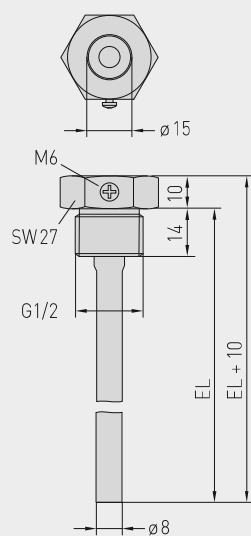
**TMxx +
MF-15-K**

Duct temperature sensor
with mounting flange, plastic

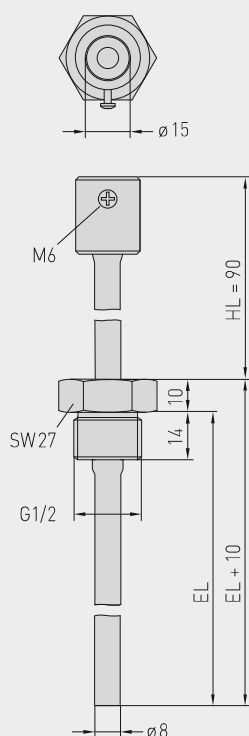
Dimensional drawing
TH08-ms/xx



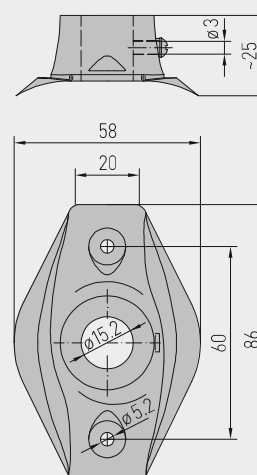
Dimensional drawing
TH08-VA/xx



Dimensional drawing
TH08-VA/xx/90



Dimensional drawing
MF-15-K





S+S REGELTECHNIK

THERMASGARD® TM 43
THERMASGARD® TM 65

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

... through combination with accessories:



TH08-ms/xx

Immersion sleeve,
brass, nickel-plated,
thread-sealing, conical,
according to DIN 10226



TH08-VA/xx

Immersion sleeve,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



TH08-VA/xx/90

Immersion sleeve with neck tube,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



MF-15-K

Mounting flange,
plastic

THERMASGARD® TH08 Immersion sleeve Ø 8 mm (Accessories)					
Type / WG01B	p _{max} (static)	T _{max}	Inserted Length (EL)	Item No.	Price
TH08-ms/xx	Brass nickel-plated			without neck tube	
TH08-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-132	8,87 €
TH08-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-132	10,10 €
TH08-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-132	10,67 €
TH08-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-132	11,01 €
TH08-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-132	12,75 €
TH08-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-132	13,10 €
TH08-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-132	13,21 €
TH08-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-132	13,33 €
TH08-VA/xx	Stainless steel, V4A (1.4571)			without neck tube	
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132	19,31 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	21,34 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	22,93 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	24,17 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	30,05 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	31,40 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	31,61 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	32,17 €
TH08-VA/xx/90	Stainless steel, V4A (1.4571)			with neck tube (90 mm)	
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	27,66 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	28,90 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	30,32 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	31,61 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	33,13 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	35,91 €
Note: inner diameter of socket 15.0 mm For further information see last chapter!					
Mounting flange (Accessories)					
Type / WG01B		T _{max}		Item No.	Price
MF					
MF-15-K	Mounting flange, plastic, 56.8x84.3 mm, Ø 15.2 mm tube gland	+100 °C		7100-0032-0000-000	5,83 €
Note: For further information see last chapter!					

Calibratable mean-value temperature measuring transducer **THERMASGARD® MWTM** (rod sensor 0.4...20 m) with eight switchable measuring ranges, continuous output, in an impact-resistant plastic housing with quick-locking screws, optionally with/without display, with bendable sensor rod (fully active), protective tube made from copper, plastic-coated, and anti-kink spring, incl. mounting flange.

Calibratable mean-value temperature measuring transducer **THERMASGARD® MWTM-SD** (rod sensor 3 m / 6 m) with eight switchable measuring ranges, continuous output, in an impact-resistant plastic housing with snap-on lid, with bendable sensor rod (fully active), protective tube made from reinforced thermoplastic hose and anti-kink spring, incl. mounting flange.

The sensor is used to detect the mean temperature (mean value) in gaseous media, e.g. in ventilation and air conditioning ducts over the entire cross section or over a defined length. Laid along a meandering route, it uniformly detects the surrounding temperature, as a duct temperature sensor. For proper mounting of the rod, mounting clamps **MK-05-M** (accessories) are available. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

MWTM

Rod length 0,4 m
 (IP 65)



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
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
Sensor:	Pt1000, DIN EN 60751, class B
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) $T_{\min} -30^\circ\text{C}$, $T_{\max} +80^\circ\text{C}$ with manual zero point correction (± 10 K)
Output:	0 - 10 V or 4...20 mA
Connection type:	2- or 3-wire connection
Sensors:	active across the entire length (averaging)
Rod material:	protective tube made from copper, plastic-coated (MWTM) (made from reinforced thermoplastic hose for the MWTM-SD), with anti-kink spring and sleeve, stainless steel V4A (1.4571)
Rod dimensions:	Ø = 5.0 mm, nominal length (NL) = 0.4 m / 3 m / 6 m, see table (nominal length optionally up to max. 20 m)
Rod laying:	Observe the admissible values! Bending radius: > 35 mm Vibration load: ≤ 0.5 g Tensile load: < 480 N for the MWTM < 100 N for the MWTM-SD
Housing:	plastic, UV-resistant, material polyamide, 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 dimensions:	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 according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm² via terminal screws on circuit board
Process connection:	by mounting flange, plastic (galvanised steel optional, see accessories) and mounting clamps MK-05-M
Ambient temperature:	measuring transducer -30...+70 °C
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	IP54 (according to EN 60529) for the MWTM-SD IP65 (according to EN 60529) for the MWTM housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)
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 (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)
ACCESSORIES	see table

Display and internal diagnostics

THERMASGARD® Measuring transducer with display

	Standard
	Measuring range exceeded
	Measuring range not reached
	Sensor breakage
	Sensor short circuit



S+S REGELTECHNIK

THERMASGARD® MWTM THERMASGARD® MWTM-SD

Mean value / rod / duct temperature measuring transducer,
including mounting flange, calibratable,
with multi-range switching and active output

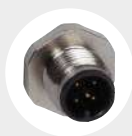
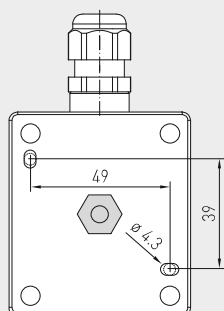


Dimensional drawing

MWTM

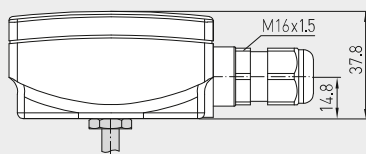
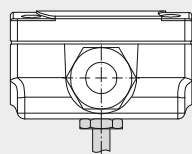
MWTM

Rod length 3 m / 6 m
(IP 65)

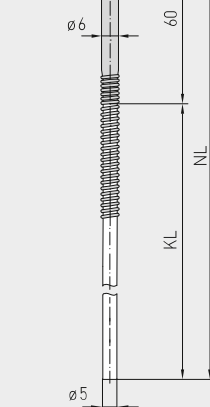
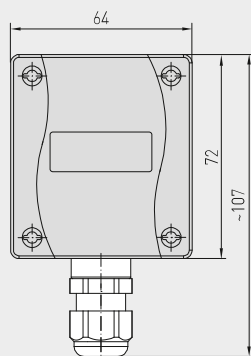
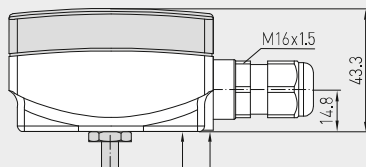
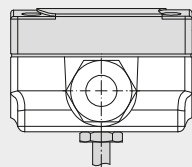


M12 connector
(optional on request)

without display



with display



MWTM

with Display
(IP 65)

MWTM-SD

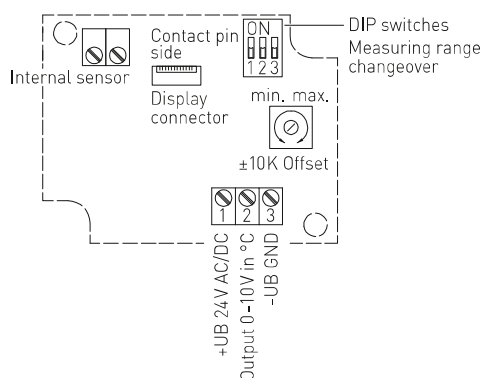
Rod length 3 m / 6 m
(IP 54)



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

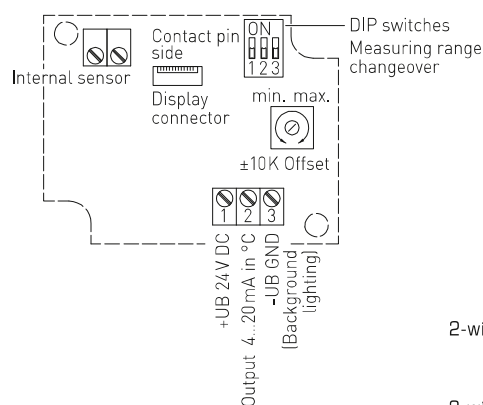
3-wire connection

MWTM-U



2- or 3-wire connection*

MWTM-I



Connection*:

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

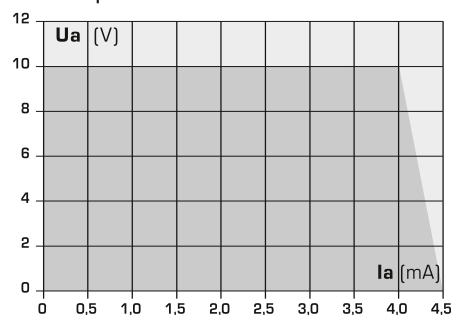
3-wire connection for devices
 with illuminated display

MWTM

display hinged
 (optional)

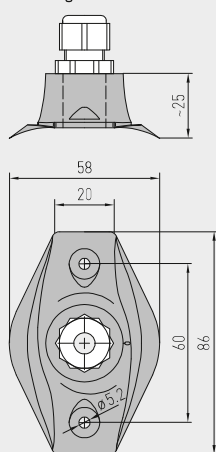


Dependency of output voltage
 on output current



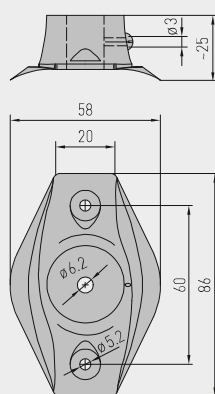
Dimensional drawing

KRD-04



Dimensional drawing

MF-06-K



MF-06-K

Mounting flange,
 plastic
 (Included in the
 scope of delivery)



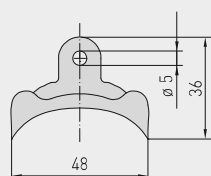
KRD-04

Capillary tube
 bushing, plastic
 (optional)



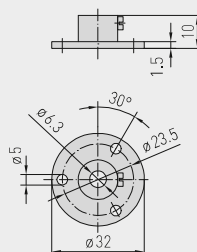
Dimensional drawing

MK-05-M



Dimensional drawing

MF-06-M



MF-06-M

Mounting flange,
 metal
 (optional)



MK-05-M

Mounting clamps,
 galvanised steel
 (from 3m rod length,
 included in the scope
 of delivery)





S+S REGELTECHNIK

THERMASGARD® MWTM

THERMASGARD® MWTM-SD

Mean value / rod / duct temperature measuring transducer,
including mounting flange, calibratable,
with multi-range switching and active output

MWTM

Rod length 3 m / 6 m
with/without Display
(IP65)

MWTM-SD

Rod length 3 m / 6 m
without Display
(IP54)



THERMASGARD® MWTM-SD

Mean-value temperature measuring transducer
with rod made from reinforced **thermoplastic hose**, *Standard*

Type / WG01B	Sensor	Output	Rod length	Item No.	Price
MWTM-SD-I				IP54, I variant	
MWTM-SD-I 3m	Pt1000	4...20 mA	3.0 m	1101-3132-0239-90K	152,82 €
MWTM-SD-I 6m	Pt1000	4...20 mA	6.0 m	1101-3132-0269-90K	162,28 €
MWTM-SD-U				IP54, U variant	
MWTM-SD-U 3m	Pt1000	0 - 10 V	3.0 m	1101-3131-0239-90K	149,61 €
MWTM-SD-U 6m	Pt1000	0 - 10 V	6.0 m	1101-3131-0269-90K	158,64 €
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101				on request

THERMASGARD® MWTM

Mean-value temperature measuring transducer
with rod made from **copper, plastic-coated**, *Premium*

Type / WG01	Sensor	Output	Rod length	Item No.	Price
MWTM-I				IP65, I variant	
MWTM-I 0,4m	Pt1000	4...20 mA	0.4 m	1101-3132-0089-900	163,19 €
MWTM-I 3m	Pt1000	4...20 mA	3.0 m	1101-3132-0239-900	212,18 €
MWTM-I 6m	Pt1000	4...20 mA	6.0 m	1101-3132-0269-900	247,33 €
MWTM-U				IP65, U variant	
MWTM-U 0,4m	Pt1000	0 - 10 V	0.4 m	1101-3131-0089-900	163,19 €
MWTM-U 3m	Pt1000	0 - 10 V	3.0 m	1101-3131-0239-900	212,18 €
MWTM-U 6m	Pt1000	0 - 10 V	6.0 m	1101-3131-0269-900	247,33 €
Extra charge:	Other ranges optional				24,19 €
	Two-line display with illumination				47,46 €
	Per meter sensor cable (from 6 m to max. 20 m)				on request
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101				on request

ACCESSORIES

MF-06-K	Mounting flange , plastic (included in the scope of delivery)	7100-0030-1000-000	5,83 €
MF-06-M	Mounting flange , metal (Galvanised steel), Ø 35 mm	7100-0030-5000-100	9,10 €
KRD-04	Capillary tube gland bracket , plastic	7100-0030-7000-000	8,49 €
MK-05-M	Mounting clamps , galvanised steel (6 pieces) (from 3 m rod length, included in the scope of delivery)	7100-0034-0000-000	9,41 €

For further information see last chapter!

**Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output**

TM 54
Basic unit

Calibratable temperature measuring transducer **THERMASGARD® TM 54** with eight switchable measuring ranges and continuous output, with connecting head made from aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101) and straight protective tube.

A basic unit in four variants through combination with accessories, eg, for robust applications with a separate immersion sleeve made from stainless steel.

The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, heating engineering, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, mechanical, apparatus and plant engineering and throughout the industrial sector.

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:	$R_b \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1.0 VA / 24 V AC / DC; < 0.55 VA / 24 V DC
Sensor:	Pt1000, DIN EN 60571, class B (Perfect Sensor Protection)
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) $T_{\max} = +150^\circ\text{C}$ with manual zero point correction (± 10 K)
Deviation, 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:	0.2 - 1.5 mm ² , via push-in terminal
Cable connection:	TM 54 (standard) adjusting screw made of metal (M20 x 1.5) TM 54-KV (optional) cable gland, brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) TM 54-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature -30...+70 °C
Protective tube:	stainless steel, V4A (1.4571) Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Process connection:	by means of immersion sleeve or mounting flange (accessories)
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) TM 54 IP 65 (according to EN 60 529) TM 54-KV / TM 54-Q
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
ACCESSORIES	(see table)
TH-ms / xx	Immersion sleeve, brass, nickel-plated, Ø = 8 mm, $T_{\max} = +150^\circ\text{C}$, $p_{\max} = 10 \text{ bar}$
TH-VA / xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 8 mm, $T_{\max} = +600^\circ\text{C}$, $p_{\max} = 40 \text{ bar}$
TH-VA / xx / 90	Immersion sleeve, stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, $T_{\max} = +600^\circ\text{C}$, $p_{\max} = 40 \text{ bar}$
MF-06-M	Mounting flange, metal, galvanised steel, Ø = 32 mm, Ø = 6.3 mm tube gland, $T_{\max} = +700^\circ\text{C}$

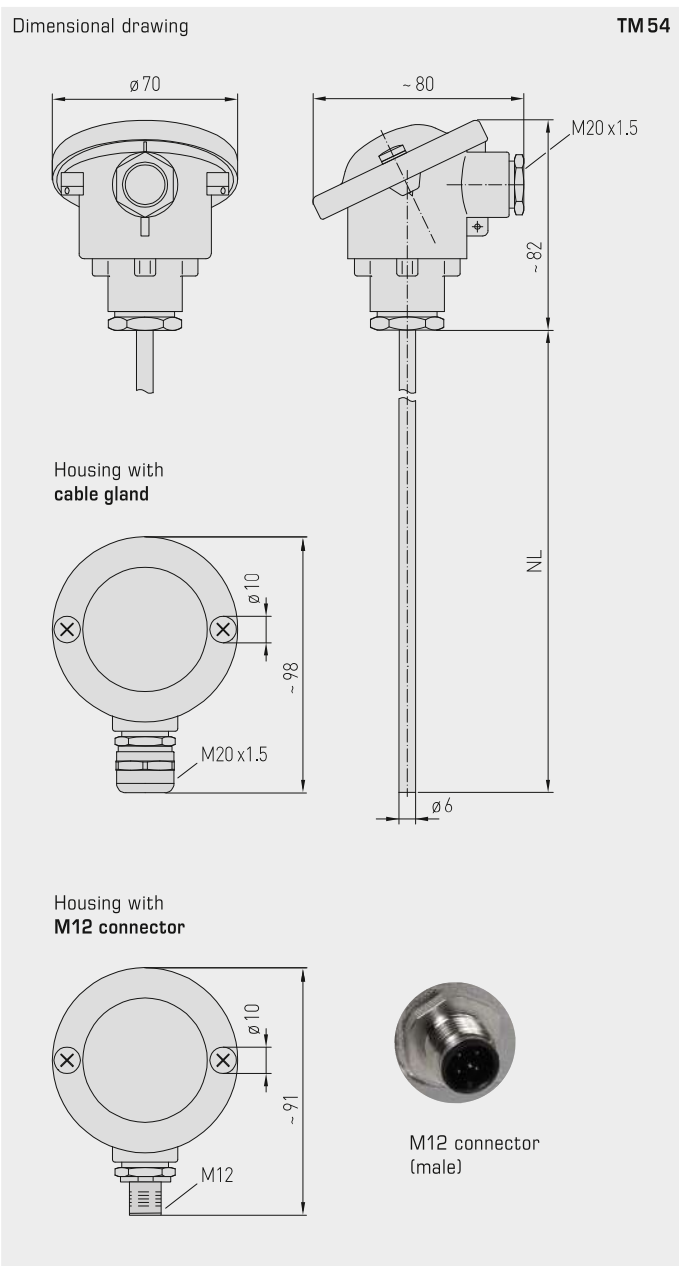




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THERMASGARD® TM 54

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output



TM 54
standard
(IP 54)



TM 54 - KV
with cable gland
(IP 65)



TM 54 - Q
with M12 connector
(IP 65)



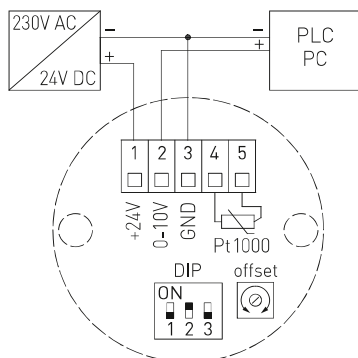
High-performance encapsulation against
vibration, mechanical stress and humidity



Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

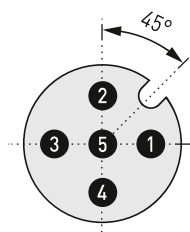
Connecting diagram

TM 54-U



Pin assignment
(M12)

TM 54-U



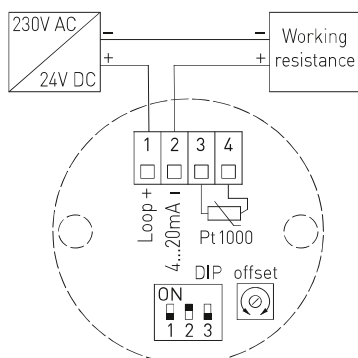
- 1 +UB 24V AC/DC
- 2 Output temperature 0-10V [°C]
- 3 free
- 4 -UB GND
- 5 Shield

TM 54-U
Connecting head



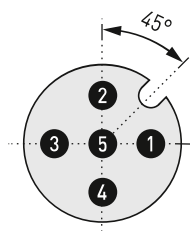
Connecting diagram

TM 54-I



Pin assignment
(M12)

TM 54-I



- 1 +UB 15...36V DC
- 2 Output temperature 4...20mA [°C]
- 3 free
- 4 -UB GND
- 5 Shield

TM 54-I
Connecting head



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



Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

TM 54
standard
(IP 54)



THERMASGARD® TM 54		Temperature measuring transducer (Basic unit)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
TM 54-I				IP54, I - variant	
TM54-I 50mm	Pt1000	4...20 mA	50 mm	1101-7152-0019-910	144,64 €
TM54-I 100mm	Pt1000	4...20 mA	100 mm	1101-7152-0029-910	148,05 €
TM54-I 150mm	Pt1000	4...20 mA	150 mm	1101-7152-0039-910	154,71 €
TM54-I 200mm	Pt1000	4...20 mA	200 mm	1101-7152-0049-910	156,83 €
TM54-I 250mm	Pt1000	4...20 mA	250 mm	1101-7152-0059-910	158,77 €
TM54-I 300mm	Pt1000	4...20 mA	300 mm	1101-7152-0069-910	160,40 €
TM54-I 350mm	Pt1000	4...20 mA	350 mm	1101-7152-0079-910	163,67 €
TM54-I 400mm	Pt1000	4...20 mA	400 mm	1101-7152-0089-910	172,79 €
TM 54-U				IP54, U - variant	
TM54-U 50mm	Pt1000	0 - 10 V	50 mm	1101-7151-0019-910	144,64 €
TM54-U 100mm	Pt1000	0 - 10 V	100 mm	1101-7151-0029-910	148,05 €
TM54-U 150mm	Pt1000	0 - 10 V	150 mm	1101-7151-0039-910	154,71 €
TM54-U 200mm	Pt1000	0 - 10 V	200 mm	1101-7151-0049-910	156,83 €
TM54-U 250mm	Pt1000	0 - 10 V	250 mm	1101-7151-0059-910	158,77 €
TM54-U 300mm	Pt1000	0 - 10 V	300 mm	1101-7151-0069-910	160,40 €
TM54-U 350mm	Pt1000	0 - 10 V	350 mm	1101-7151-0079-910	163,68 €
TM54-U 400mm	Pt1000	0 - 10 V	400 mm	1101-7151-0089-910	172,79 €
Housing variant:		equipped as standard with pressure screw (IP54), optional housing variants with cable gland (IP65) or M12 connector (IP65) see the next page!			
Extra charge:		other measuring ranges optional			
					24,19 €

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

TM 54 - Q
with M12 connector
(IP65)



THERMASGARD® TM 54 - Q		Temperature measuring transducer (Basic unit with M12 connector)				
Type / WG01	Sensor	Output	Installation length (EL)	Q	Item No.	Price
TM 54 - I xx Q				IP65, I - variant		
TM54-I 50mm Q	Pt1000	4...20 mA	50 mm	●	2001-4111-2100-011	184,57 €
TM54-I 100mm Q	Pt1000	4...20 mA	100 mm	●	2001-4111-2100-021	187,96 €
TM54-I 150mm Q	Pt1000	4...20 mA	150 mm	●	2001-4111-2100-031	194,63 €
TM54-I 200mm Q	Pt1000	4...20 mA	200 mm	●	2001-4111-2100-041	196,75 €
TM54-I 250mm Q	Pt1000	4...20 mA	250 mm	●	2001-4111-2100-051	198,70 €
TM54-I 300mm Q	Pt1000	4...20 mA	300 mm	●	2001-4111-2100-061	200,34 €
TM54-I 350mm Q	Pt1000	4...20 mA	350 mm	●	2001-4111-2100-071	203,61 €
TM54-I 400mm Q	Pt1000	4...20 mA	400 mm	●	2001-4111-2100-081	212,71 €
TM 54 - U xx Q				IP54, U - variant		
TM54-U 50mm Q	Pt1000	0 - 10 V	50 mm	●	2001-4111-1100-011	167,55 €
TM54-U 100mm Q	Pt1000	0 - 10 V	100 mm	●	2001-4111-1100-021	187,96 €
TM54-U 150mm Q	Pt1000	0 - 10 V	150 mm	●	2001-4111-1100-031	194,63 €
TM54-U 200mm Q	Pt1000	0 - 10 V	200 mm	●	2001-4111-1100-041	196,75 €
TM54-U 250mm Q	Pt1000	0 - 10 V	250 mm	●	2001-4111-1100-051	198,70 €
TM54-U 300mm Q	Pt1000	0 - 10 V	300 mm	●	2001-4111-1100-061	200,34 €
TM54-U 350mm Q	Pt1000	0 - 10 V	350 mm	●	2001-4111-1100-071	203,61 €
TM54-U 400mm Q	Pt1000	0 - 10 V	400 mm	●	2001-4111-1100-081	212,71 €
Housing variant "Q":		Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:		other measuring ranges optional				24,19 €

ACCESSORIES	
Special accessories for M12 connector see chapter Accessories!	



S+S REGELTECHNIK

THERMASGARD® TM 54

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

TM 54 - KV
with cable gland
(IP 65)



THERMASGARD® TM 54 - KV		Temperature measuring transducer (Basic unit with cable gland)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
TM 54 - I xx KV				IP65, I - variant	
TM54-I 50mm KV	Pt1000	4...20 mA	50 mm	1101-7172-0019-910	153,63 €
TM54-I 100mm KV	Pt1000	4...20 mA	100 mm	1101-7172-0029-910	157,03 €
TM54-I 150mm KV	Pt1000	4...20 mA	150 mm	1101-7172-0039-910	163,68 €
TM54-I 200mm KV	Pt1000	4...20 mA	200 mm	1101-7172-0049-910	165,81 €
TM54-I 250mm KV	Pt1000	4...20 mA	250 mm	1101-7172-0059-910	167,76 €
TM54-I 300mm KV	Pt1000	4...20 mA	300 mm	1101-7172-0069-910	169,40 €
TM54-I 350mm KV	Pt1000	4...20 mA	350 mm	1101-7172-0079-910	172,66 €
TM54-I 400mm KV	Pt1000	4...20 mA	400 mm	1101-7172-0089-910	181,76 €
TM 54 - U xx KV				IP65, U - variant	
TM54-U 50mm KV	Pt1000	0 - 10 V	50 mm	1101-7171-0019-910	153,63 €
TM54-U 100mm KV	Pt1000	0 - 10 V	100 mm	1101-7171-0029-910	157,03 €
TM54-U 150mm KV	Pt1000	0 - 10 V	150 mm	1101-7171-0039-910	163,68 €
TM54-U 200mm KV	Pt1000	0 - 10 V	200 mm	1101-7171-0049-910	165,81 €
TM54-U 250mm KV	Pt1000	0 - 10 V	250 mm	1101-7171-0059-910	167,76 €
TM54-U 300mm KV	Pt1000	0 - 10 V	300 mm	1101-7171-0069-910	169,40 €
TM54-U 350mm KV	Pt1000	0 - 10 V	350 mm	1101-7171-0079-910	172,66 €
TM54-U 400mm KV	Pt1000	0 - 10 V	400 mm	1101-7171-0089-910	181,76 €
Housing variant "KV":		Cable connection with cable gland			
Extra charge:		other measuring ranges optional			24,19 €

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

S+S REGELTECHNIK

One basic device in four variants ...



**TM54 +
TH-ms/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
brass, nickel-plated



**TM54 +
TH-VA/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
stainless steel, V4A



**TM54 +
TH-VA/xx/90**

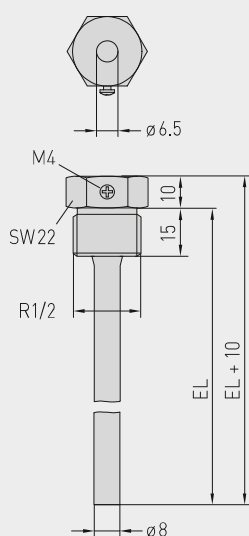
Immersion / screw-in
temperature sensor with
immersion sleeve with neck
tube, stainless steel, V4A



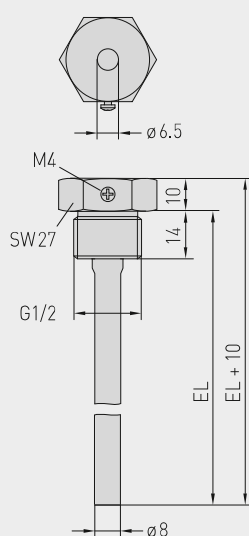
**TM54 +
MF-06-M**

Duct temperature sensor
with mounting flange, metal

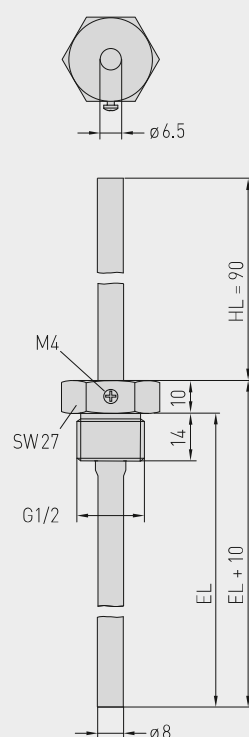
**Dimensional drawing
TH-ms/xx**



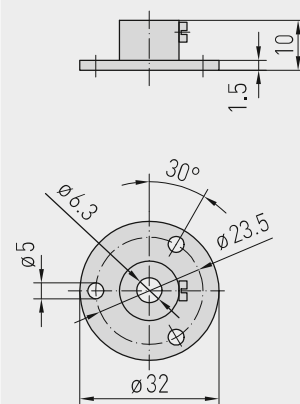
**Dimensional drawing
TH-VA/xx**



**Dimensional drawing
TH-VA/xx/90**



**Dimensional drawing
MF-06-M**





S+S REGELTECHNIK

THERMASGARD® TM 54

Immersion / screw-in / duct temperature measuring transducer,
calibratable, with multi-range switching
and active output

...through combination with accessories:



TH -ms/xx

Immersion sleeve,
brass, nickel-plated,
thread-sealing, conical,
according to DIN 10226



TH -VA/xx

Immersion sleeve,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



TH -VA/xx/90

Immersion sleeve with neck tube,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



MF-06-M

Mounting flange,
metal

THERMASGARD® TH						Immersion sleeve Ø 8 mm (accessories)	
Type / WG01	p _{max} (static)	T _{max}	Inserted Length (EL)		Item No.	Price	
TH-ms / xx	Brass nickel-plated			without neck tube			
TH-MS 50MM	10 bar	+150 °C	50 mm		7100-0011-0010-001	8,87 €	
TH-MS 100MM	10 bar	+150 °C	100 mm		7100-0011-0020-001	10,10 €	
TH-MS 150MM	10 bar	+150 °C	150 mm		7100-0011-0030-001	10,67 €	
TH-MS 200MM	10 bar	+150 °C	200 mm		7100-0011-0040-001	11,01 €	
TH-MS 250MM	10 bar	+150 °C	250 mm		7100-0011-0050-001	12,75 €	
TH-MS 300MM	10 bar	+150 °C	300 mm		7100-0011-0060-001	13,10 €	
TH-MS 350MM	10 bar	+150 °C	350 mm		7100-0011-0070-001	13,21 €	
TH-MS 400MM	10 bar	+150 °C	400 mm		7100-0011-0080-001	13,33 €	
TH-VA / xx	Stainless steel, V4A (1.4571)			without neck tube			
TH-VA 50MM	40 bar	+600 °C	50 mm		7100-0012-0010-001	19,31 €	
TH-VA 100MM	40 bar	+600 °C	100 mm		7100-0012-0020-001	21,34 €	
TH-VA 150MM	40 bar	+600 °C	150 mm		7100-0012-0030-001	22,93 €	
TH-VA 200MM	40 bar	+600 °C	200 mm		7100-0012-0040-001	24,17 €	
TH-VA 250MM	40 bar	+600 °C	250 mm		7100-0012-0050-001	30,05 €	
TH-VA 300MM	40 bar	+600 °C	300 mm		7100-0012-0060-001	31,40 €	
TH-VA 350MM	40 bar	+600 °C	350 mm		7100-0012-0070-001	31,61 €	
TH-VA 400MM	40 bar	+600 °C	400 mm		7100-0012-0080-001	32,17 €	
TH-VA / xx / 90	Stainless steel, V4A (1.4571)			with neck tube (90 mm)			
TH-VA 50/90MM	40 bar	+600 °C	50 mm		7100-0012-2010-001	27,66 €	
TH-VA 100/90MM	40 bar	+600 °C	100 mm		7100-0012-2020-001	28,90 €	
TH-VA 150/90MM	40 bar	+600 °C	150 mm		7100-0012-2030-001	30,32 €	
TH-VA 200/90MM	40 bar	+600 °C	200 mm		7100-0012-2040-001	31,61 €	
TH-VA 250/90MM	40 bar	+600 °C	250 mm		7100-0012-2050-001	33,13 €	
TH-VA 300/90MM	40 bar	+600 °C	300 mm		7100-0012-2060-001	35,91 €	
Note: inner diameter of socket 6.5 mm For further information see last chapter!							
Mounting flange (accessories)							
Type / WG01			T _{max}	Item No.		Price	
MF							
MF-06-M	Mounting flange, metal (galvanised steel) Ø 32 mm, tube gland Ø 6.3 mm		+700 °C	7100-0030-5000-100		9,10 €	
Note: For further information see last chapter!							

Duct/smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output

Calibratable smoke gas temperature measuring transducer **THERMASGARD® RGTM 1**
with eight switchable measuring ranges and continuous output, with connecting head
made from aluminium (optionally with **cable gland** or **M12 connector** according to
DIN EN 61076-2-101), spring-mounted measuring insert and straight protective tube,
incl. mounting flange.

The duct sensor is used to detect high temperatures in gaseous media, eg. for exhaust air
or smoke gas temperature measurement.

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:	$R_s \text{ (Ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	10 kOhm (load max. 1 mA) for U variant
Power consumption:	< 1.0 VA / 24 V AC / DC; < 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60751, class B) (Perfect Sensor Protection)
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) with manual zero point correction (± 10 K)
Deviation, 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:	0.2 - 1.5 mm ² , via push-in terminal
Cable connection:	RGTM 1 (Standard) adjusting screw made of metal (M20 x 1.5); RGTM 1-KV (optional) cable gland, brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) RGTM 1-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature -30...+70 °C
Protective tube:	stainless steel, V4A (1.4571), Ø = 8 mm inserted length (EL) = 200 - 400 mm (see table)
Process connection:	by mounting flange stainless steel V2A (1.4305) (included in the scope of delivery)
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) RGTM 1 IP 65 (according to EN 60 529) RGTM 1-KV / RGTM 1-Q
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

RGTM 1
Basic unit



RGTM 1
Measuring insert with
ceramic tubelet



S+S REGELTECHNIK

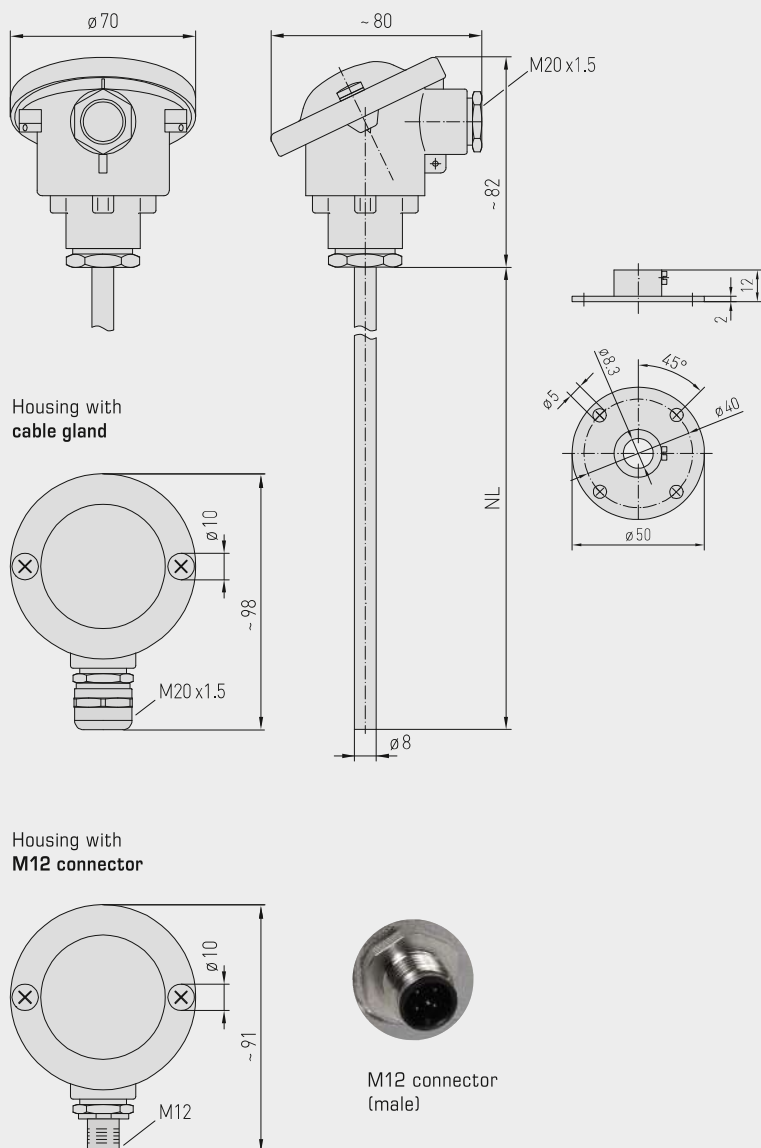
THERMASGARD® RGTM 1

Duct/smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output



Dimensional drawing

RGTM 1



RGTM 1
standard
(IP 54)



RGTM 1 - KV
with cable gland
(IP 65)



RGTM 1 - Q
with M12 connector
(IP 65)



High-performance encapsulation against
vibration, mechanical stress and humidity



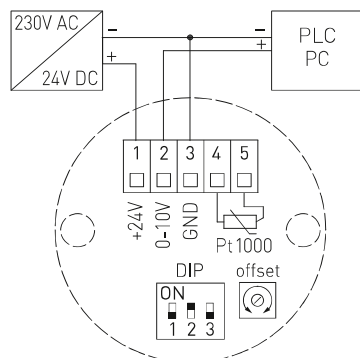
PS-PROTECTION
PERFECT SENSOR PROTECTION

Duct/smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output

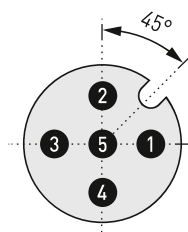
S+S REGELTECHNIK

Connecting diagram

RGTM 1-U

Pin assignment
(M12)

RGTM 1-U

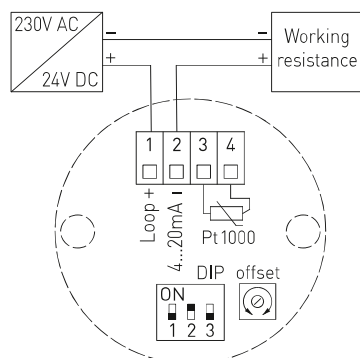


- 1 +UB 24V AC/DC
- 2 Output temperature 0-10V [°C]
- 3 free
- 4 -UB GND
- 5 Shield

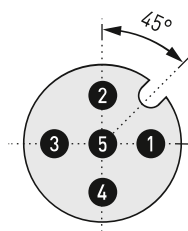
RGTM 1-U
Connecting head

Connecting diagram

RGTM 1-I

Pin assignment
(M12)

RGTM 1-I



- 1 +UB 15...36V DC
- 2 Output temperature 4...20mA [°C]
- 3 free
- 4 -UB GND
- 5 Shield

RGTM 1-I
Connecting head

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
-20...+150 °C	ON	ON	ON
0...+50 °C (default)	OFF	ON	ON
0...+100 °C	ON	OFF	ON
0...+200 °C	OFF	OFF	ON
0...+300 °C	ON	ON	OFF
0...+400 °C	OFF	ON	OFF
0...+500 °C	ON	OFF	OFF
0...+600 °C	OFF	OFF	OFF



Duct / smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output

RGTM 1
standard
(IP 54)



THERMASGARD® RGTM 1		Duct / smoke gas temperature sensor, incl. mounting flange (standard)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
RGTM 1 - I				IP 54, I - variant	
RGTM1-I 200mm	Pt1000	4...20 mA	200 mm	1101-3122-0049-810	274,61 €
RGTM1-I 250mm	Pt1000	4...20 mA	250 mm	1101-3122-0059-810	285,52 €
RGTM1-I 300mm	Pt1000	4...20 mA	300 mm	1101-3122-0069-810	288,55 €
RGTM1-I 400mm	Pt1000	4...20 mA	400 mm	1101-3122-0089-810	290,97 €
RGTM 1 - U				IP 54, U - variant	
RGTM1-U 200mm	Pt1000	0 - 10 V	200 mm	1101-3121-0049-810	274,61 €
RGTM1-U 250mm	Pt1000	0 - 10 V	250 mm	1101-3121-0059-810	285,52 €
RGTM1-U 300mm	Pt1000	0 - 10 V	300 mm	1101-3121-0069-810	288,55 €
RGTM1-U 400mm	Pt1000	0 - 10 V	400 mm	1101-3121-0089-810	290,97 €
Housing variant:		equipped as standard with pressure screw (IP 54), optional housing variants with cable gland (IP 65) or M12 connector (IP 65) see the next page!			
Extra charge:		other measuring ranges optional			
					24,19 €



Duct/smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output

RGTM 1 - Q
with M12 connector
(IP65)



THERMASGARD® RGTM 1 - Q		Duct / smoke gas temperature sensor, incl. mounting flange (with M12 connector)				
Type / WG01	Sensor	Output	Installation length (EL)	Q	Item No.	Price
RGTM 1 - I xx Q				IP65, I - variant		
RGTM1-I 200mm Q	Pt1000	4...20 mA	200 mm	●	2001-4131-2100-011	314,53 €
RGTM1-I 250mm Q	Pt1000	4...20 mA	250 mm	●	2001-4131-2100-021	325,46 €
RGTM1-I 300mm Q	Pt1000	4...20 mA	300 mm	●	2001-4131-2100-031	328,47 €
RGTM1-I 400mm Q	Pt1000	4...20 mA	400 mm	●	2001-4131-2100-041	330,91 €
RGTM 1 - U xx Q				IP54, U - variant		
RGTM1-U 200mm Q	Pt1000	0 - 10 V	200 mm	●	2001-4131-1100-011	314,53 €
RGTM1-U 250mm Q	Pt1000	0 - 10 V	250 mm	●	2001-4131-1100-021	325,46 €
RGTM1-U 300mm Q	Pt1000	0 - 10 V	300 mm	●	2001-4131-1100-031	328,47 €
RGTM1-U 400mm Q	Pt1000	0 - 10 V	400 mm	●	2001-4131-1100-041	330,91 €
Housing variant "Q":		Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:		other measuring ranges optional				24,19 €

ACCESSORIES	
Special accessories for M12 connector see chapter Accessories!	



Duct/smoke gas temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output

RGTM 1-KV
with cable gland
(IP 65)



THERMASGARD®
RGTM 1-KV

Duct/smoke gas temperature sensor, incl. mounting flange
(with cable gland)

Type/WG01	Sensor	Output	Installation length (EL)	Item No.	Price
RGTM 1-I xx KV				IP65, I-variant	
RGTM1-I 200mm KV	Pt1000	4...20mA	200 mm	1101-31D2-0049-810	283,60 €
RGTM1-I 250mm KV	Pt1000	4...20mA	250 mm	1101-31D2-0059-810	294,52 €
RGTM1-I 300mm KV	Pt1000	4...20mA	300 mm	1101-31D2-0069-810	297,54 €
RGTM1-I 400mm KV	Pt1000	4...20mA	400 mm	1101-31D2-0089-810	299,97 €
RGTM 1-U xx KV				IP65, U-variant	
RGTM1-U 200mm KV	Pt1000	0-10 V	200 mm	1101-31D1-0049-810	283,60 €
RGTM1-U 250mm KV	Pt1000	0-10 V	250 mm	1101-31D1-0059-810	294,52 €
RGTM1-U 300mm KV	Pt1000	0-10 V	300 mm	1101-31D1-0069-810	297,54 €
RGTM1-U 400mm KV	Pt1000	0-10 V	400 mm	1101-31D1-0089-810	299,97 €
Housing variant "KV":		Cable connection with cable gland			
Extra charge:		other measuring ranges optional			24,19 €

**Screw-in / smoke gas temperature measuring transducer,
with neck tube, calibratable, with multi-range switching
and active output**

RGTM 2
Basic unit

Calibratable smoke gas / screw-in temperature measuring transducer with neck tube **THERMASGARD® RGTM 2** with eight switchable measuring ranges and continuous output, with connecting head made from aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101), spring-mounted measuring insert and straight protective tube.

The duct sensor is used to detect high temperatures in gaseous or liquid media, eg. for exhaust air or smoke gas temperature measurement.

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
Load resistance:	10 kOhm (load max. 1 mA) for U variant
Power consumption:	< 1.0 VA / 24 V AC / DC; < 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60751, class B) (Perfect Sensor Protection)
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) with manual zero point correction (± 10 K)
Deviation, 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:	0.2 - 1.5 mm ² , via push-in terminal
Cable connection:	RGTM 2 (Standard) adjusting screw made of metal (M 20 x 1.5); RGTM 2-KV (optional) cable gland, brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) RGTM 2-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature -30...+70 °C
Protective tube:	stainless steel, V4A (1.4571), G ½" straight pipe thread, wrench size 27 mm, $p_{\max} = 40 \text{ bar}$, $\varnothing = 8 \text{ mm}$ length of neck tube (HL) = 80 mm inserted length (EL) = 100 - 400 mm (see table)
Process connection:	screwed socket with G ½"
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	IP 54 (according to EN 60529) RGTM 2 IP 65 (according to EN 60529) RGTM 2-KV / RGTM 2-Q
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, EMC directive 2014 / 30 / EU

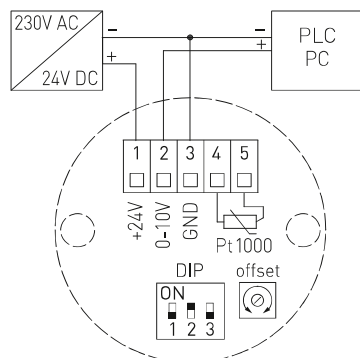


RGTM 2
Measuring insert with
ceramic tubelet

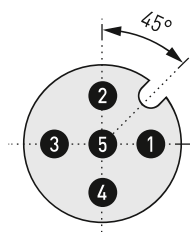
Screw-in / smoke gas temperature measuring transducer,
with neck tube, calibratable, with multi-range switching
and active output

Connecting diagram

RGTM 2-U

Pin assignment
(M12)

RGTM 2-U

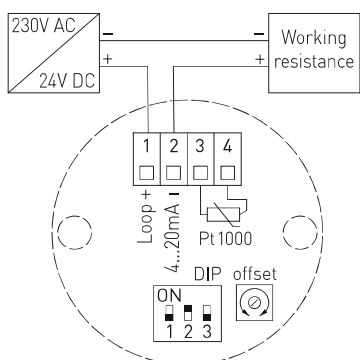


- 1 +UB 24V AC/DC
- 2 Output temperature 0-10V [°C]
- 3 free
- 4 -UB GND
- 5 Shield

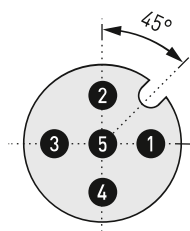
RGTM 2-U
Connecting head

Connecting diagram

RGTM 2-I

Pin assignment
(M12)

RGTM 2-I



- 1 +UB 15...36V DC
- 2 Output temperature 4...20mA [°C]
- 3 free
- 4 -UB GND
- 5 Shield

RGTM 2-I
Connecting head

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
-20...+150 °C	ON	ON	ON
0...+50 °C (default)	OFF	ON	ON
0...+100 °C	ON	OFF	ON
0...+200 °C	OFF	OFF	ON
0...+300 °C	ON	ON	OFF
0...+400 °C	OFF	ON	OFF
0...+500 °C	ON	OFF	OFF
0...+600 °C	OFF	OFF	OFF



S+S REGELTECHNIK

THERMASGARD® **RGTM 2**

Screw-in / smoke gas temperature measuring transducer,
with neck tube, calibratable, with multi-range switching
and active output

RGTM 2
standard
(IP 54)



THERMASGARD® RGTM 2		Screw-in / smoke gas temperature measuring transducer with neck tube (standard)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
RGTM2-I				IP54, I - variant	
RGTM2-I 100/80mm	Pt1000	4...20 mA	100 mm	1101-2162-0029-810	266,74 €
RGTM2-I 150/80mm	Pt1000	4...20 mA	150 mm	1101-2162-0039-810	271,58 €
RGTM2-I 200/80mm	Pt1000	4...20 mA	200 mm	1101-2162-0049-810	274,00 €
RGTM2-I 250/80mm	Pt1000	4...20 mA	250 mm	1101-2162-0059-810	284,91 €
RGTM2-I 300/80mm	Pt1000	4...20 mA	300 mm	1101-2162-0069-810	288,55 €
RGTM2-I 400/80mm	Pt1000	4...20 mA	400 mm	1101-2162-0089-810	289,77 €
RGTM2-U				IP54, U - variant	
RGTM2-U 100/80mm	Pt1000	0 - 10 V	100 mm	1101-2161-0029-810	266,74 €
RGTM2-U 150/80mm	Pt1000	0 - 10 V	150 mm	1101-2161-0039-810	271,58 €
RGTM2-U 200/80mm	Pt1000	0 - 10 V	200 mm	1101-2161-0049-810	274,00 €
RGTM2-U 250/80mm	Pt1000	0 - 10 V	250 mm	1101-2161-0059-810	284,91 €
RGTM2-U 300/80mm	Pt1000	0 - 10 V	300 mm	1101-2161-0069-810	288,55 €
RGTM2-U 400/80mm	Pt1000	0 - 10 V	400 mm	1101-2161-0089-810	289,77 €
Housing variant:		equipped as standard with pressure screw (IP54), optional housing variants with cable gland (IP65) or M12 connector (IP65) see the next page!			
Extra charge:		other measuring ranges optional			
					24,19 €

Screw-in / smoke gas temperature measuring transducer,
with neck tube, calibratable, with multi-range switching
and active output

RGTM 2 - Q
with M12 connector
(IP65)



THERMASGARD® RGTM 2 - Q		Screw-in / smoke gas temperature measuring transducer with neck tube (with M12 connector)				
Type / WG01	Sensor	Output	Installation length (EL)	Q ●	Item No.	Price
RGTM 2-I xx Q				IP 65, I - variant		
RGTM2-I 100/80mm Q	Pt1000	4...20 mA	100 mm	●	2001-4141-2100-011	306,67 €
RGTM2-I 150/80mm Q	Pt1000	4...20 mA	150 mm	●	2001-4141-2100-021	311,52 €
RGTM2-I 200/80mm Q	Pt1000	4...20 mA	200 mm	●	2001-4141-2100-031	315,06 €
RGTM2-I 250/80mm Q	Pt1000	4...20 mA	250 mm	●	2001-4141-2100-041	324,84 €
RGTM2-I 300/80mm Q	Pt1000	4...20 mA	300 mm	●	2001-4141-2100-051	328,47 €
RGTM2-I 400/80mm Q	Pt1000	4...20 mA	400 mm	●	2001-4141-2100-061	329,70 €
RGTM 2-U xx Q				IP 65, U - variant		
RGTM2-U 100/80mm Q	Pt1000	0 - 10 V	100 mm	●	2001-4141-1100-011	306,67 €
RGTM2-U 150/80mm Q	Pt1000	0 - 10 V	150 mm	●	2001-4141-1100-021	311,52 €
RGTM2-U 200/80mm Q	Pt1000	0 - 10 V	200 mm	●	2001-4141-1100-031	315,06 €
RGTM2-U 250/80mm Q	Pt1000	0 - 10 V	250 mm	●	2001-4141-1100-041	324,84 €
RGTM2-U 300/80mm Q	Pt1000	0 - 10 V	300 mm	●	2001-4141-1100-051	328,47 €
RGTM2-U 400/80mm Q	Pt1000	0 - 10 V	400 mm	●	2001-4141-1100-061	329,70 €
Housing variant "Q":		Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:		other measuring ranges optional				24,19 €

ACCESSORIES	
Special accessories for M12 connector see chapter Accessories!	



S+S REGELTECHNIK

THERMASGARD® RGTM 2

Screw-in / smoke gas temperature measuring transducer,
with neck tube, calibratable, with multi-range switching
and active output

RGTM2-KV
with cable gland
(IP 65)



THERMASGARD® RGTM 2-KV		Screw-in / smoke gas temperature measuring transducer with neck tube (with cable gland)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
RGTM2-I xx KV				IP65, I - variant	
RGTM2-I 100/80mm KV	Pt1000	4...20 mA	100 mm	1101-21D2-0029-810	275,72 €
RGTM2-I 150/80mm KV	Pt1000	4...20 mA	150 mm	1101-21D2-0039-810	280,56 €
RGTM2-I 200/80mm KV	Pt1000	4...20 mA	200 mm	1101-21D2-0049-810	282,99 €
RGTM2-I 250/80mm KV	Pt1000	4...20 mA	250 mm	1101-21D2-0059-810	293,91 €
RGTM2-I 300/80mm KV	Pt1000	4...20 mA	300 mm	1101-21D2-0069-810	297,54 €
RGTM2-I 400/80mm KV	Pt1000	4...20 mA	400 mm	1101-21D2-0089-810	298,75 €
RGTM2-U xx KV				IP65, U - variant	
RGTM2-U 100/80mm KV	Pt1000	0 - 10 V	100 mm	1101-21D1-0029-810	275,72 €
RGTM2-U 150/80mm KV	Pt1000	0 - 10 V	150 mm	1101-21D1-0039-810	280,56 €
RGTM2-U 200/80mm KV	Pt1000	0 - 10 V	200 mm	1101-21D1-0049-810	282,99 €
RGTM2-U 250/80mm KV	Pt1000	0 - 10 V	250 mm	1101-21D1-0059-810	293,91 €
RGTM2-U 300/80mm KV	Pt1000	0 - 10 V	300 mm	1101-21D1-0069-810	297,54 €
RGTM2-U 400/80mm KV	Pt1000	0 - 10 V	400 mm	1101-21D1-0089-810	298,75 €
Housing variant "KV":		Cable connection with cable gland			
Extra charge:		other measuring ranges optional			24,19 €

**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 (M16 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, 2 x 0.25 mm²; KL = 1.5 m (optionally also other lengths and measuring range limits, e.g., PTFE up to +250 °C or glass fibre with steel mesh up to +350 °C)
Ambient temperature:	measuring transducer -30...+70 °C
Permitted humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type housing:	IP 65 (according to EN 60 529) Housing tested, TÜV SÜD, Report No.713139052 (Tyr 1)
Protection type sensor:	IP 65 (according to EN 60 529) sleeve humidity-tight (standard) IP 68 (according to EN 60 529) sleeve water-tight (optional) IP 54 (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:	display with illumination , two-line, cut-out approx. 36 x 15 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

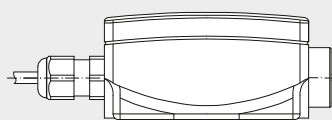
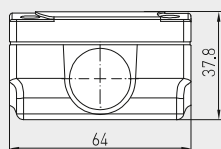
Sleeve sensor with temperature measuring transducer,
calibratable, with multi-range switching and
active output



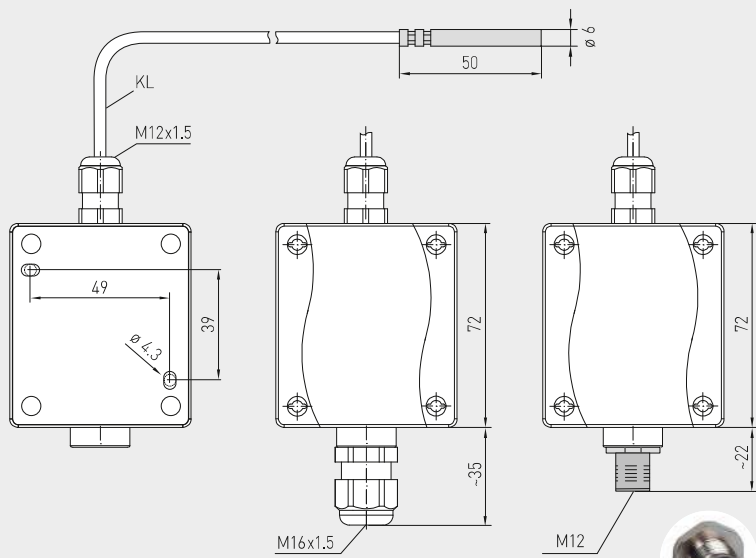
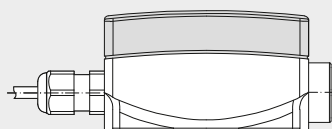
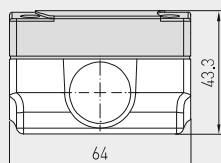
Dimensional drawing

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

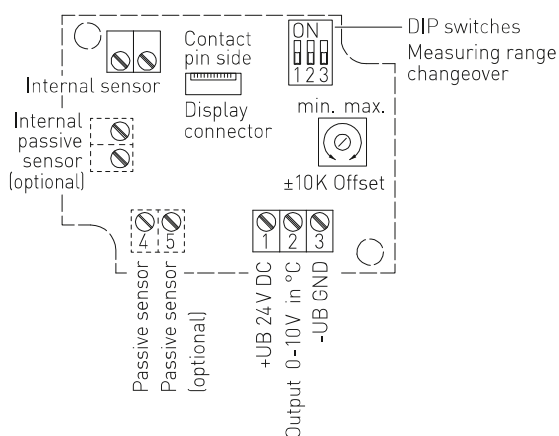


PS-PROTECTION
PERFECT SENSOR PROTECTION

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

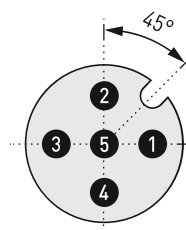
Schematic diagram

HFTM-U



Pin assignment (M12)

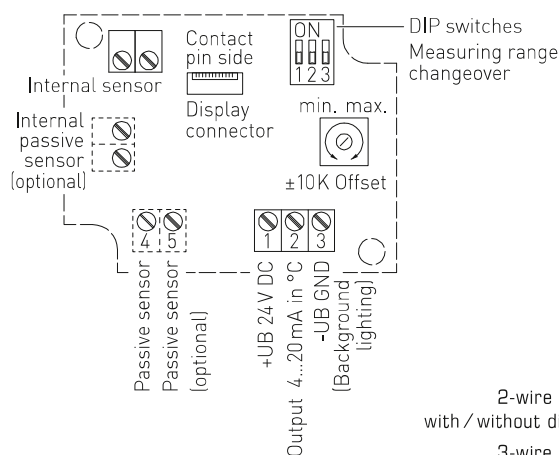
HFTM-U



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

Schematic diagram *

HFTM-I

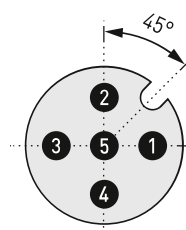


Connection*:

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

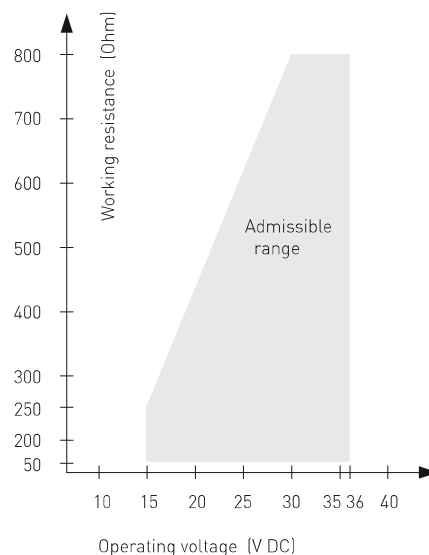
Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
-20... +150 °C	ON	ON	ON
-50... +50 °C	OFF	ON	ON
-20... +80 °C	ON	OFF	ON
-30... +60 °C	OFF	OFF	ON
0... +40 °C	ON	ON	OFF
0... +50 °C (default)	OFF	ON	OFF
0... +100 °C	ON	OFF	OFF
0... +150 °C	OFF	OFF	OFF

HFTM-xx
with display,
hinged



Load resistance diagram
4...20mA

HFTM-I





S+S REGELTECHNIK

THERMASGARD® HFTM

Sleeve sensor with temperature measuring transducer,
calibratable, with multi-range switching and
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.	Price
HFTM						
HFTM-I	Pt1000	4...20 mA	Remote sensor		1101-1152-0219-920	99,53 €
HFTM-I LCD	Pt1000	4...20 mA	Remote sensor	■	1101-1152-2219-920	148,05 €
HFTM-U	Pt1000	0-10 V	Remote sensor		1101-1151-0219-920	99,53 €
HFTM-U LCD	Pt1000	0-10 V	Remote sensor	■	1101-1151-2219-920	148,05 €
Housing variant: Cable connection with cable gland						
Extra charge:						24,19 €
other measuring ranges optional						3,24 €
Protection type IP68 (Sensor sleeve watertight compound-filled)						
2-wire connecting leads, per running meter (silicone/PTFE/glass fibre)						on request
Other lengths of protection sleeve optional						on request

THERMASGARD® HFTM-Q Sleeve sensor with temperature measuring transducer (with M12 connector)						
Type / WG01I	Sensor	Output	Type	Display ● = Q	Item No.	Price
HFTM-Q						
HFTM-I Q	Pt1000	4...20 mA	Remote sensor	●	2001-2111-2100-001	139,46 €
HFTM-I Q LCD	Pt1000	4...20 mA	Remote sensor	● ■	2001-2112-2100-001	187,96 €
HFTM-U Q	Pt1000	0-10 V	Remote sensor	●	2001-2111-1100-001	139,46 €
HFTM-U Q LCD	Pt1000	0-10 V	Remote sensor	● ■	2001-2112-1100-001	187,96 €
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!

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

Calibratable temperature measuring transducer with sleeve sensor **THERMASGARD® HFTM-VA** with eight switchable measuring ranges, continuous output, rugged housing made from **stainless steel V4A** 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. The measuring transducer is factory-calibrated. Adjustment / fine adjustment by the user is possible (zero point offset is adjustable). 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 ($\pm 10\%$) for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised $\pm 0.3\text{ V}$
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:	$< 1.0\text{ VA} / 24\text{ V DC}$; $< 2.2\text{ VA} / 24\text{ V AC}$
Insulating resistance:	$\geq 100\text{ M}\Omega$, at $+20^\circ\text{C}$ (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection with IP68) Sensor external
Measuring ranges:	multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) with manual zero point correction ($\pm 10\text{ K}$)
Deviation, temperature:	typically $\pm 0.2\text{ K}$ at $+25^\circ\text{C}$
Output:	0 - 10 V or 4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Cable connection:	cable gland, stainless steel V2A (1.4305) (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) or M12 connector (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	stainless steel V4A (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, weather- and UV-resistant
Housing dimensions:	143 x 97 x 61 mm (Tyr 2E)
Sensor protection:	sensor sleeve, stainless steel V4A (1.4571), $\varnothing = 6\text{ mm}$, nominal length NL = 50 mm (optional 30...400 mm)
Sensor cable:	Silicone, SiHF, $2 \times 0.25\text{ mm}^2$; KL = 1.5 m (optionally also other lengths and measuring range limits, e.g., PTFE up to $+250^\circ\text{C}$ or glass fibre with steel mesh up to $+350^\circ\text{C}$)
Ambient temperature:	measuring transducer $-30\text{...}+70^\circ\text{C}$
Permitted humidity:	$< 95\%$ r. H., 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. 713160960B (Skadi2)
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
ACCESSORIES	(see table)



S+S REGELTECHNIK

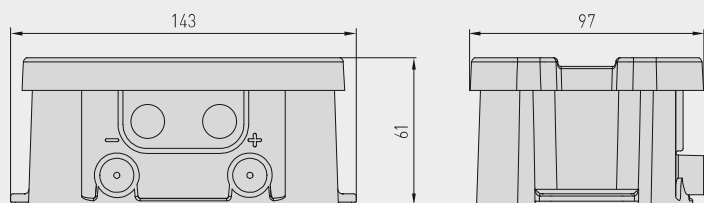
THERMASGARD® HFTM - VA

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

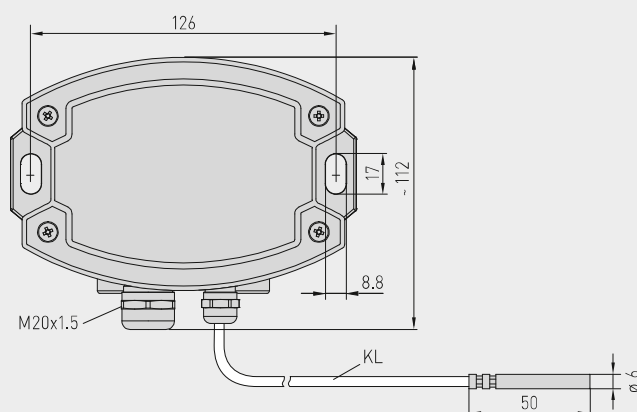


Dimensional drawing

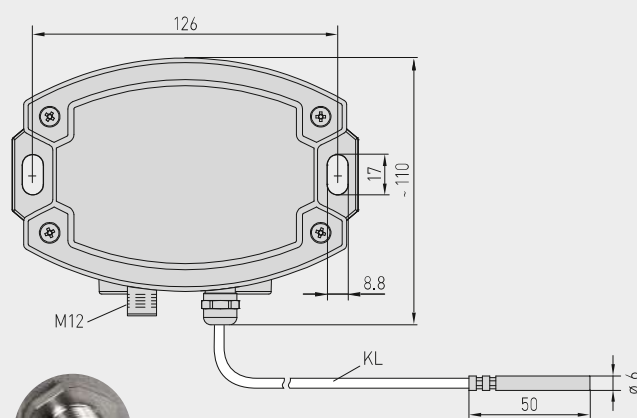
HFTM - VA



Housing with
cable gland



Housing with
M12 connector



M12 connector
(male)



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



HFTM - VA
with cable gland



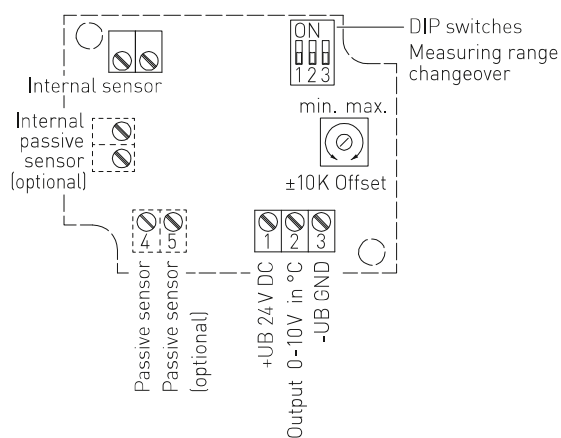
HFTM - VAQ
with M12 connector



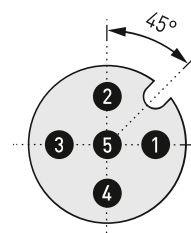
Sleeve sensor with temperature measuring transducer,
calibratable, with multi-range switching and
active output

Schematic diagram

HFTM - U

Pin assignment
(M12)

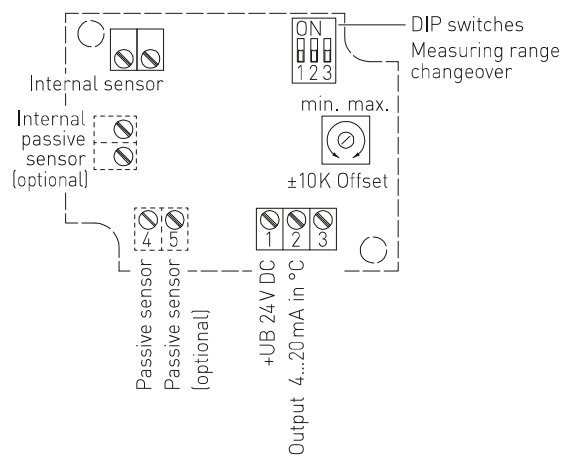
HFTM - U



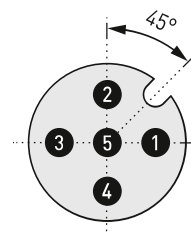
- 1 +UB 24V AC/DC
- 2 Output temperature 0-10V [°C]
- 3 free
- 4 -UB GND
- 5 Shield

Schematic diagram

HFTM - I

Pin assignment
(M12)

HFTM - I

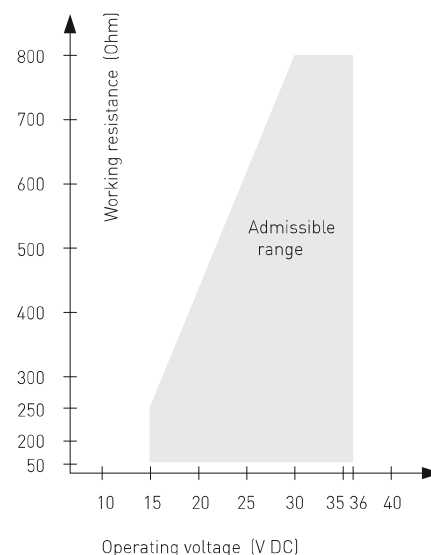


- 1 +UB 24V DC
- 2 Output temperature 4...20mA [°C]
- 3 free
- 4 -UB GND (optional)
- 5 Shield

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

Load resistance diagram
4...20mA

HFTM - I





S+S REGELTECHNIK

THERMASGARD® HFTM - VA

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



HFTM - VAQ
with M12 connector

HFTM - VA
with cable gland



THERMASGARD® HFTM - VA					
Sleeve sensor with temperature measuring transducer, <i>ID</i> (Stainless steel housing with cable gland)					
Type / WG02I	Sensor	Output	Type	Item No.	Price
HFTM - VA					
HFTM-I VA	Pt1000	4...20 mA	Remote sensor	2001-2141-2200-001	365,07 €
HFTM-U VA	Pt1000	0-10 V	Remote sensor	2001-2141-1200-001	365,07 €
Housing variant: Cable connection with cable gland					
Extra charge:					24,19 €
other measuring ranges optional					3,24 €
Protection type IP68 (Sensor sleeve watertight compound-filled)					
2-wire connecting leads, per running meter (silicone / PTFE / glass fibre)					on request
Other lengths of protection sleeve optional					on request

THERMASGARD® HFTM - VAQ					
Sleeve sensor with temperature measuring transducer, <i>ID</i> (Stainless steel housing with M12 connector)					
Type / WG02I	Sensor	Output	Type	● = Q Item No.	Price
HFTM - VAQ					
HFTM-I VAQ	Pt1000	4...20 mA	Remote sensor	● 2001-2141-2100-001	401,78 €
HFTM-U VAQ	Pt1000	0-10 V	Remote sensor	● 2001-2141-1100-001	401,78 €
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!



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Ove Jensens Alle 35 F
DK-8700 Horsens
Denmark
www.newtronic.eu
www.newtronic.dk
+45 7669 7090