

**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 65** with eight switchable measuring ranges, continuous linear output, enclosure made of impact-resistant plastic and enclosure cover with quick-locking screws, straight protective tube, with or without optional display.

For the detection of temperatures in liquid or gaseous media. For aggressive media, stainless steel immersion sleeves must be used. Applications of the TM 65 are 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.

These temperature measuring transducers are factory-calibrated. Adjustment / fine adjustment by the user is possible (zero point offset is adjustable).

**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 DC; < 2.2 VA / 24 V AC
Sensor:	Pt1000, DIN EN 60751, class B <b>(Perfect Sensor Protection)</b>
Measuring ranges:	<b>multi-range switching with 8 switchable measuring ranges,</b> see table (other ranges optional) <b>with manual zero point correction (± 10 K)</b>
Deviation, temperature:	± 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
Protective tube:	stainless steel, <b>V4A</b> (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Enclosure:	plastic, material polyamide, 30 % glass-globe-reinforced, <b>with quick-locking screws</b> (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover for display is transparent!
Enclosure dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable gland:	M 16 x 1.5, including strain relief, exchangeable, max. inner diameter 10.4 mm
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> via terminal screws on circuit board
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	<b>IP 65</b> (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, 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 temperature</b> and the <b>internal diagnostics</b> (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)

**ACCESSORIES**

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



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

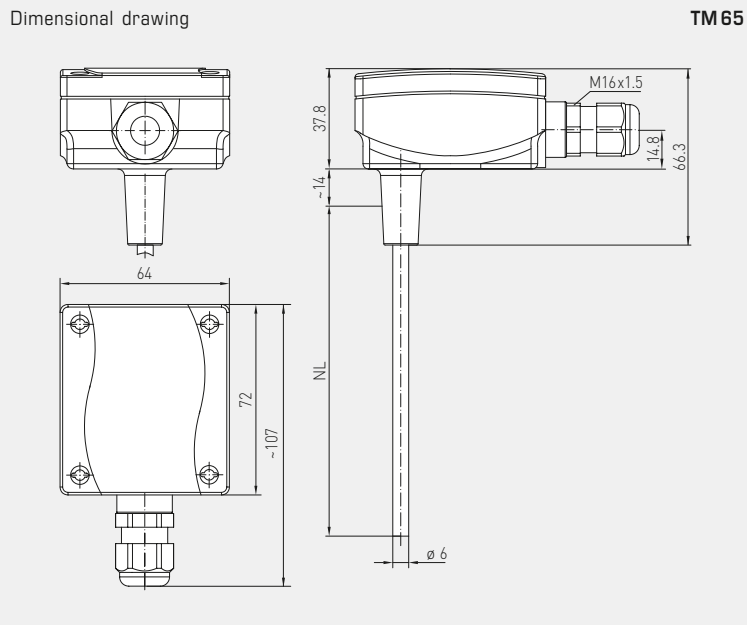
Standard

Measuring range exceeded

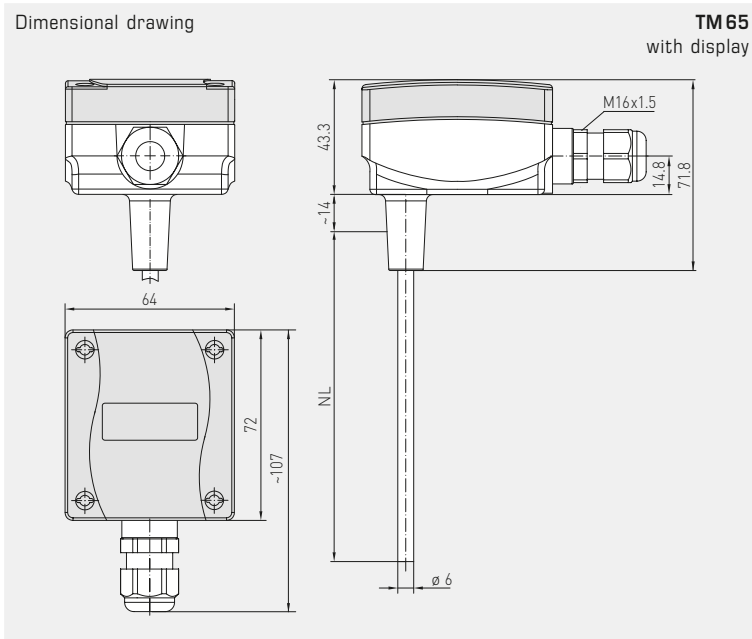
Measuring range not reached

Sensor breakage

Sensor short circuit



TM 65



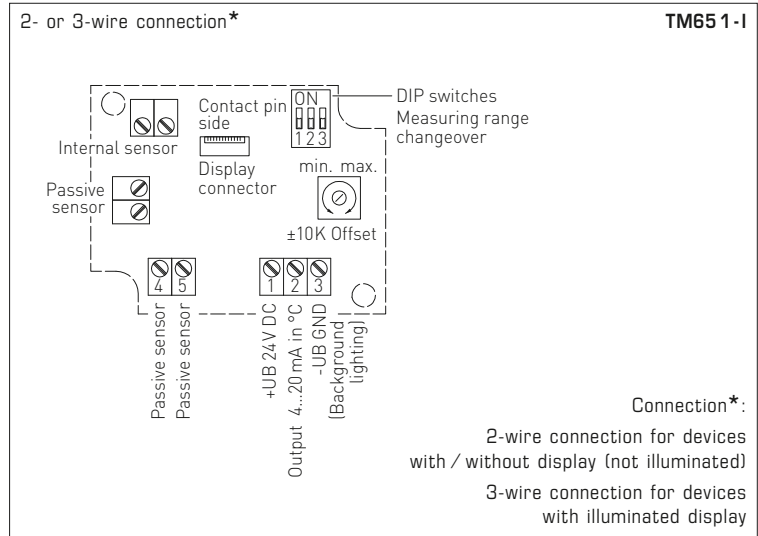
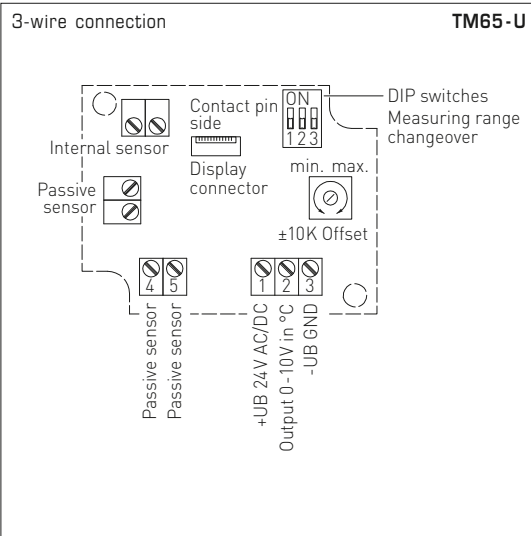
TM 65  
with display

**PATENTED**

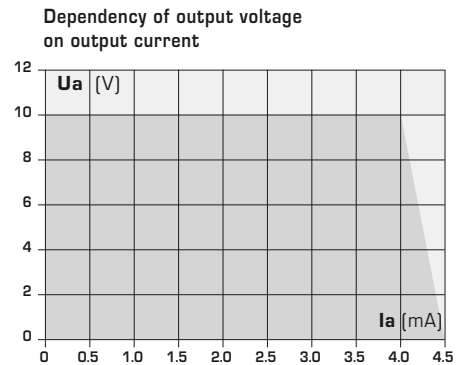


TM 65  
Basic device  
with accessories

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



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	OFF	ON	OFF
0...+100 °C	ON	OFF	OFF
0...+150 °C	OFF	OFF	OFF





## THERMASGARD® TM 65 – temperature sensor (basic device)

Type / WG01	Output	Inserted Length (EL)	Display	Item No.	Price
<b>TM 65-I</b>				<b>IP65, I-variant</b>	
TM65-I 50MM	4...20 mA	50 mm		1101-7122-0019-900	84,50 €
TM65-I 50MM_DISPLAY	4...20 mA	50 mm	■	1101-7122-2019-900	127,45 €
TM65-I 100MM	4...20 mA	100 mm		1101-7122-0029-900	84,73 €
TM65-I 100MM_DISPLAY	4...20 mA	100 mm	■	1101-7122-2029-900	127,67 €
TM65-I 150MM	4...20 mA	150 mm		1101-7122-0039-900	84,93 €
TM65-I 150MM_DISPLAY	4...20 mA	150 mm	■	1101-7122-2039-900	127,88 €
TM65-I 200MM	4...20 mA	200 mm		1101-7122-0049-900	85,10 €
TM65-I 200MM_DISPLAY	4...20 mA	200 mm	■	1101-7122-2049-900	128,05 €
TM65-I 250MM	4...20 mA	250 mm		1101-7122-0059-900	85,37 €
TM65-I 250MM_DISPLAY	4...20 mA	250 mm	■	1101-7122-2059-900	128,32 €
TM65-I 300MM	4...20 mA	300 mm		1101-7122-0069-900	86,01 €
TM65-I 300MM_DISPLAY	4...20 mA	300 mm	■	1101-7122-2069-900	128,95 €
TM65-I 400MM	4...20 mA	400 mm		1101-7122-0089-900	87,74 €
TM65-I 400MM_DISPLAY	4...20 mA	400 mm	■	1101-7122-2089-900	130,69 €
<b>TM 65-U</b>				<b>IP65, U-variant</b>	
TM65-U 50MM	0 - 10 V	50 mm		1101-7121-0019-900	84,50 €
TM65-U 50MM_DISPLAY	0 - 10 V	50 mm	■	1101-7121-2019-900	127,45 €
TM65-U 100MM	0 - 10 V	100 mm		1101-7121-0029-900	84,73 €
TM65-U 100MM_DISPLAY	0 - 10 V	100 mm	■	1101-7121-2029-900	127,67 €
TM65-U 150MM	0 - 10 V	150 mm		1101-7121-0039-900	84,93 €
TM65-U 150MM_DISPLAY	0 - 10 V	150 mm	■	1101-7121-2039-900	127,88 €
TM65-U 200MM	0 - 10 V	200 mm		1101-7121-0049-900	85,10 €
TM65-U 200MM_DISPLAY	0 - 10 V	200 mm	■	1101-7121-2049-900	128,05 €
TM65-U 250MM	0 - 10 V	250 mm		1101-7121-0059-900	85,37 €
TM65-U 250MM_DISPLAY	0 - 10 V	250 mm	■	1101-7121-2059-900	128,32 €
TM65-U 300MM	0 - 10 V	300 mm		1101-7121-0069-900	86,01 €
TM65-U 300MM_DISPLAY	0 - 10 V	300 mm	■	1101-7121-2069-900	128,95 €
TM65-U 400MM	0 - 10 V	400 mm		1101-7121-0089-900	87,74 €
TM65-U 400MM_DISPLAY	0 - 10 V	400 mm	■	1101-7121-2089-900	130,69 €
Extra charge:	Other ranges optional				21,42 €

TM 65  
without displayTM 65  
with displayHigh-performance encapsulation against  
vibration, mechanical stress and humidity

PERFECT SENSOR PROTECTION

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and active output

One basic device in four variants...

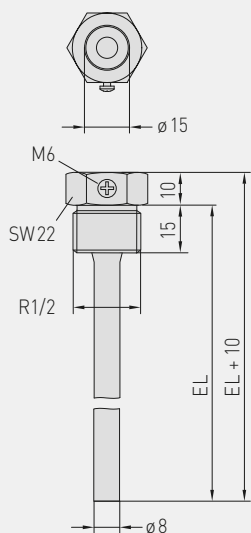


**PATENTED**

**TM 65 +  
TH 08 -ms /xx**

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

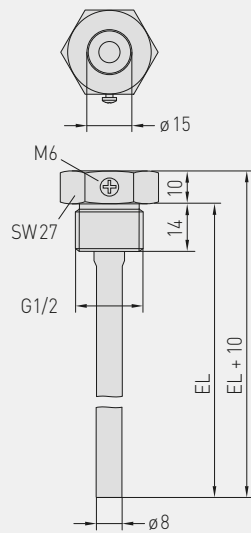
Dimensional drawing  
**TH 08 -ms /xx**



**TM 65 +  
TH 08 -VA /xx**

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

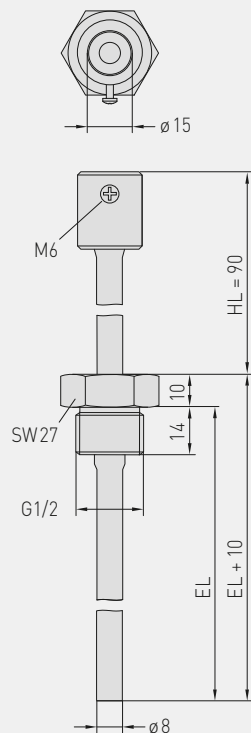
Dimensional drawing  
**TH 08 -VA /xx**



**TM 65 +  
TH 08 -VA /xx / 90**

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

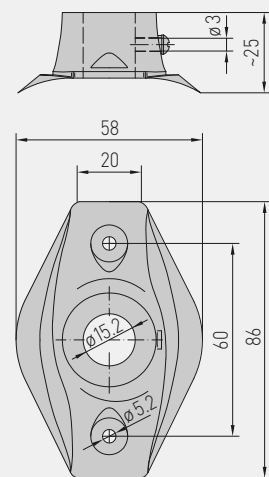
Dimensional drawing  
**TH 08 -VA /xx / 90**



**TM 65 +  
MF -15 -K**

Duct temperature sensor  
with mounting flange, plastic

Dimensional drawing  
**MF -15 -K**





... 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 / WG01	p <sub>max</sub> (static)	T <sub>max</sub>	Inserted Length (EL)	Item No.	Price
<b>TH08-ms/xx</b>		<b>Brass nickel-plated</b>		without neck tube	
TH08-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-132	7,85 €
TH08-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-132	8,16 €
TH08-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-132	9,02 €
TH08-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-132	9,51 €
TH08-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-132	9,83 €
TH08-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-132	11,29 €
TH08-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-132	13,32 €
TH08-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-132	11,71 €
<b>TH08-VA/xx</b>		<b>Stainless steel, V4A (1.4571)</b>		without neck tube	
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132	14,99 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	15,78 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	16,59 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	17,72 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	18,63 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	23,20 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	23,63 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	24,11 €
<b>TH08-VA/xx/90</b>		<b>Stainless steel, V4A (1.4571)</b>		with neck tube (90 mm)	
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	22,56 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	23,63 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	24,85 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	26,05 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	27,33 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	29,85 €
Note: inner diameter of socket 15.0 mm For further information see last chapter!					
Mounting flange (Accessories)					
Type / WG01		T <sub>max</sub>		Item No.	Price
<b>MF</b>					
<b>MF-15-K</b>	<b>Mounting flange, plastic,</b> 56.8x84.3 mm, Ø 15.2 mm tube gland	+100 °C		7100-0032-0000-000	5,16 €
Note: For further information see last chapter!					