

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), TM43 with snap-on lid TM65 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:	TM43 IP54 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) TM65 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, $T_{\text{max}} = +100 \text{ °C}$
TH08-ms/xx	Immersion sleeve, brass, nickel-plated , Ø = 8 mm, $T_{\text{max}} = +150 \text{ °C}$, $p_{\text{max}} = 10 \text{ bar}$
TH08-VA/xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 8 mm, $T_{\text{max}} = +600 \text{ °C}$, $p_{\text{max}} = 40 \text{ bar}$
TH08-VA/xx/90	Immersion sleeve, stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, $T_{\text{max}} = +600 \text{ °C}$, $p_{\text{max}} = 40 \text{ bar}$

High-performance encapsulation against
vibration, mechanical stress and humidity



TM43
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



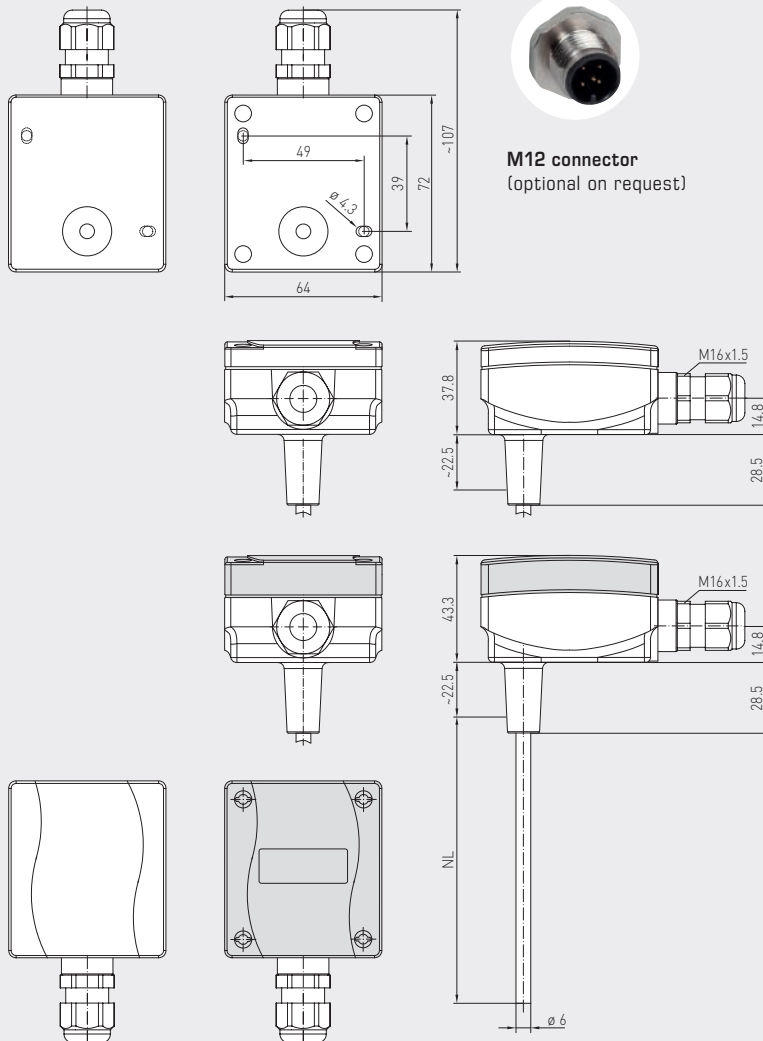
S+S REGELTECHNIK

THERMASGARD® TM 43
THERMASGARD® TM 65

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



Dimensional drawing



TM43
TM65

M12 connector
(optional on request)

with snap-on lid

with quick-locking
screws

TM65
with quick-locking screws
(IP65)



TM65
with display and
quick-locking screws
(IP65)



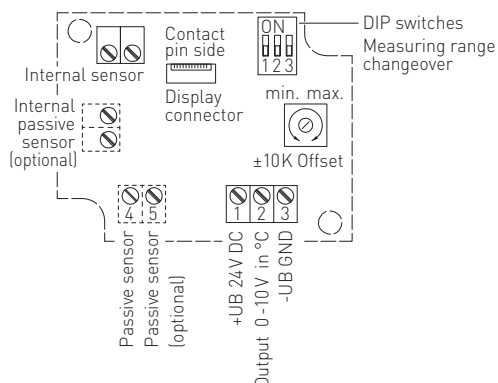
PATENTED



TM65
Basic device
with accessories

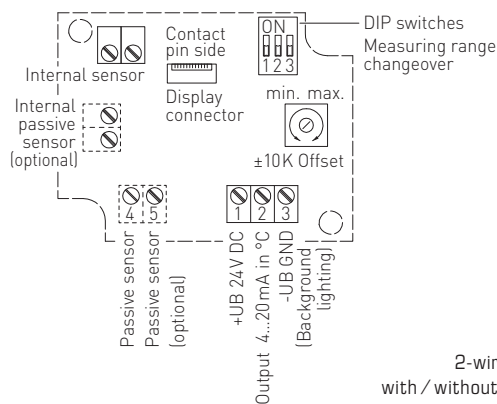
3-wire connection

TM 43-U
TM 65-U



2- or 3-wire connection*

TM 43-I
TM 65-I



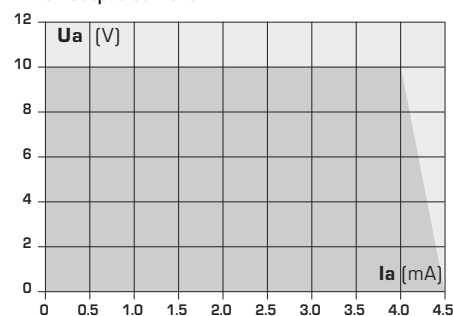
Connection*:

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			IP 54, 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			IP 54, 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			IP 65, 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			IP 65, 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



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

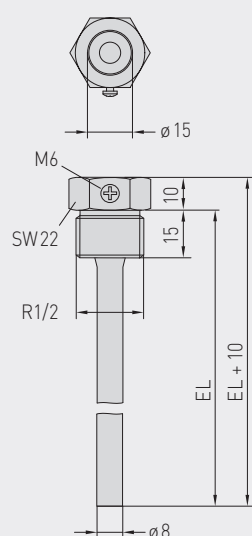
**TMxx +
TH08-VA/xx/90**

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

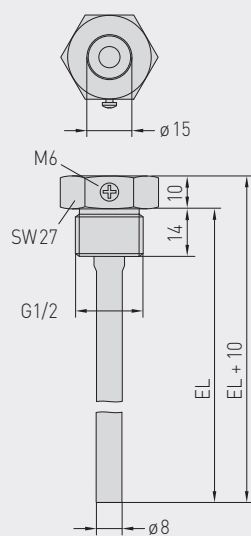
**TMxx +
MF-15-K**

Duct temperature sensor
with mounting flange, plastic

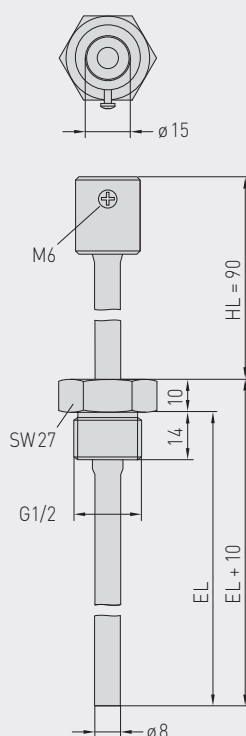
Dimensional drawing
TH08-ms/xx



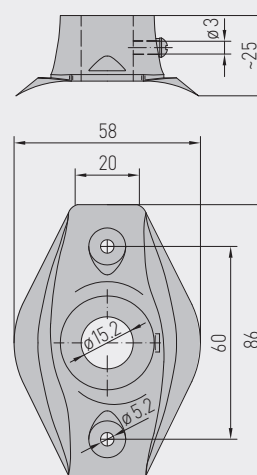
Dimensional drawing
TH08-VA/xx



Dimensional drawing
TH08-VA/xx/90



Dimensional drawing
MF-15-K





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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

...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
TH 08 -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 €
TH 08 -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 €
TH 08 -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!				