

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

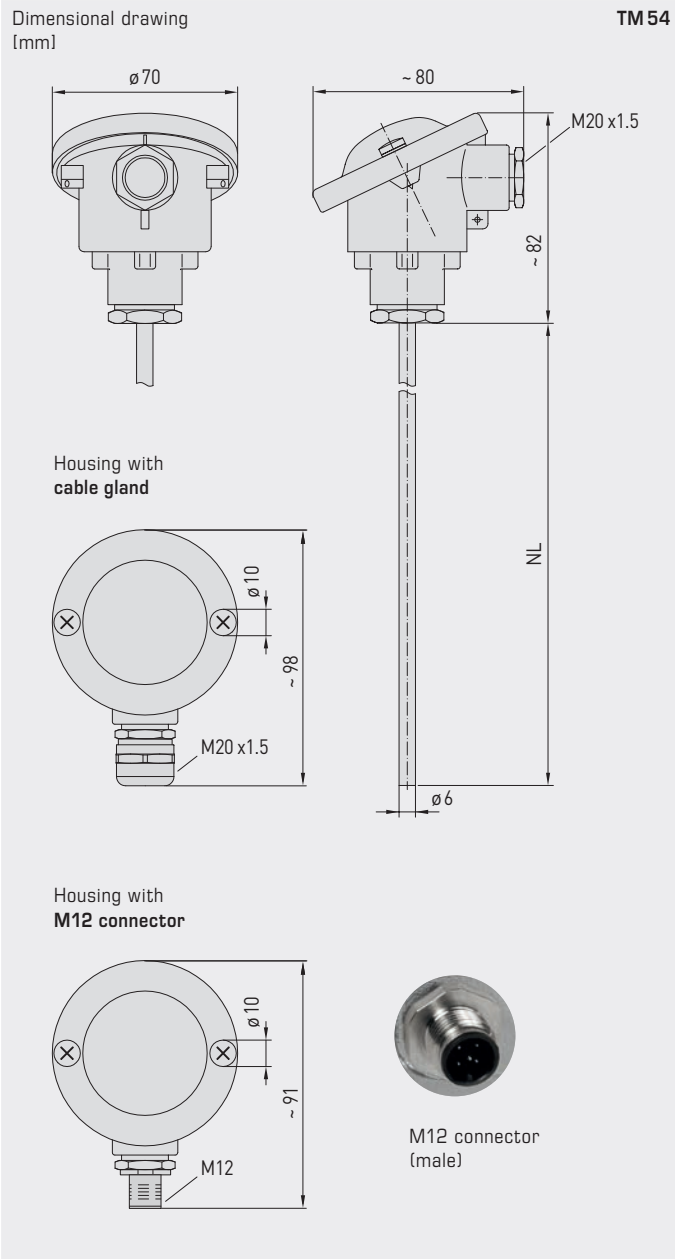
Power supply:	24 V AC / DC (± 10 %) for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3V
Working resistance:	$R_B \text{ (ohm)} = (U_B - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1.0 VA / 24 V AC / DC; < 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60571, class B) (Perfect Sensor Protection)
Measuring ranges:	Multi-range switching with 8 switchable measuring ranges, see table (other ranges optional) $T_{\text{max}} = +150^\circ\text{C}$ with manual zero point correction (± 10 K)
Accuracy, temperature:	typically ± 0.2 K at +25 °C
Output:	0 - 10V 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 (M 20 x 1.5) TM 54-KV (optional) cable gland, brass, nickel-plated (M 20 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 % RH, 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 according to EMC directive 2014 / 30 / EU
ACCESSORIES	(see table)
TH-MS / xx	Immersion sleeve, brass, nickel-plated / galvanised Ø = 8 mm, $T_{\text{max}} = +150^\circ\text{C}$, $p_{\text{max}} = 10 \text{ bar}$
TH-VA / xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 8 mm, $T_{\text{max}} = +600^\circ\text{C}$, $p_{\text{max}} = 40 \text{ bar}$
TH-VA / xx / 90	Immersion sleeve, stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, $T_{\text{max}} = +600^\circ\text{C}$, $p_{\text{max}} = 40 \text{ bar}$
MF-06-M	Mounting flange, metal, galvanised steel, Ø = 32 mm, Ø = 6.3 mm tube gland, $T_{\text{max}} = +700^\circ\text{C}$



S+S REGELTECHNIK

THERMASGARD® TM 54

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High-performance encapsulation against vibration, mechanical stress and humidity



TM 54 standard (IP 54)



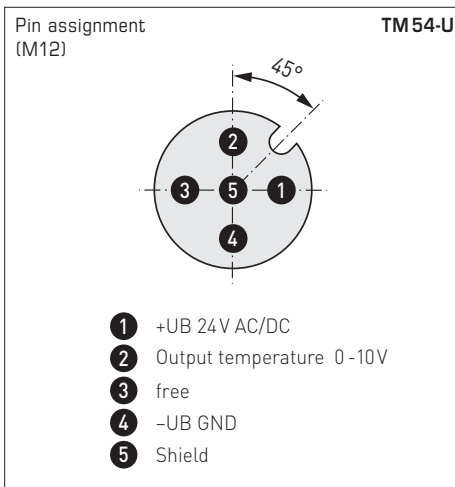
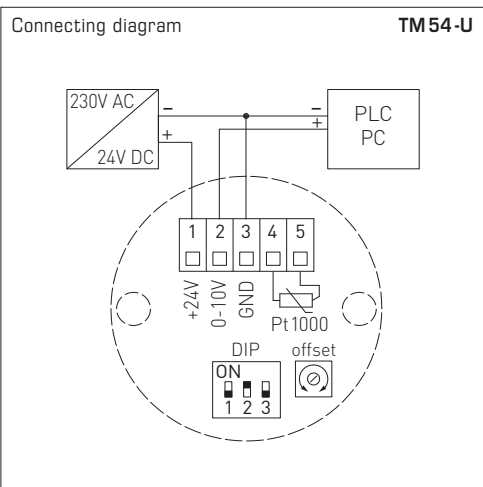
TM 54-KV with cable gland (IP 65)



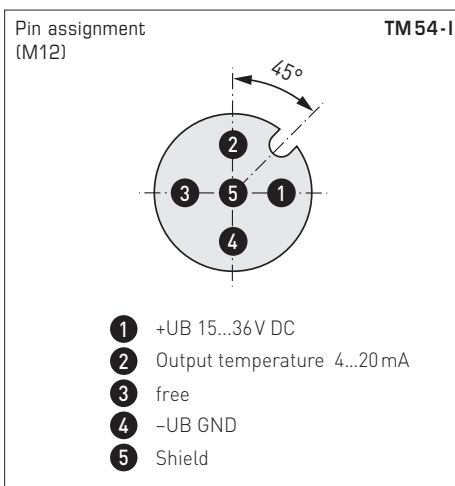
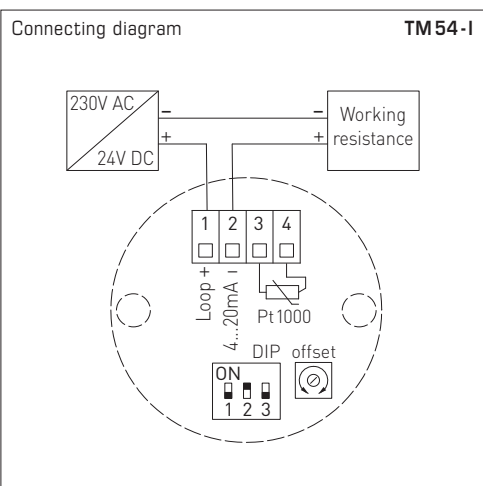
TM 54-Q with M12 connector (IP 65)



Immersion / screw-in / duct temperature measuring transducer,
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and active output



TM 54-U
Connecting head



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





THERMASGARD® TM 54		Temperature measuring transducer (Standard)			
Type/WG01	Output	Installation length (EL)	Item No. Output 0-10V	Item No. Output 4...20mA	Price
TM 54-x	x = U / I		IP 54, U-variant	IP 54, I-variant	
TM54-x 50mm	0-10V / 4...20mA	50 mm	1101-7151-0019-910	1101-7152-0019-910	167,57 €
TM54-x 100mm	0-10V / 4...20mA	100 mm	1101-7151-0029-910	1101-7152-0029-910	171,51 €
TM54-x 150mm	0-10V / 4...20mA	150 mm	1101-7151-0039-910	1101-7152-0039-910	179,23 €
TM54-x 200mm	0-10V / 4...20mA	200 mm	1101-7151-0049-910	1101-7152-0049-910	181,68 €
TM54-x 250mm	0-10V / 4...20mA	250 mm	1101-7151-0059-910	1101-7152-0059-910	183,94 €
TM54-x 300mm	0-10V / 4...20mA	300 mm	1101-7151-0069-910	1101-7152-0069-910	185,82 €
TM54-x 350mm	0-10V / 4...20mA	350 mm	1101-7151-0079-910	1101-7152-0079-910	189,61 €
TM54-x 400mm	0-10V / 4...20mA	400 mm	1101-7151-0089-910	1101-7152-0089-910	200,17 €
Housing variant:	with pressure screw (IP54)				
Extra charge:	other measuring ranges optional				28,03 €

THERMASGARD® TM 54-KV		Temperature measuring transducer (with cable gland)			
Type/WG01	Output	Installation length (EL)	Item No. Output 0-10V	Item No. Output 4...20mA	Price
TM 54-x KV	x = U / I		IP 65, U-variant	IP 65, I-variant	
TM54-x 50mm KV	0-10V / 4...20mA	50 mm	1101-7171-0019-910	1101-7172-0019-910	177,98 €
TM54-x 100mm KV	0-10V / 4...20mA	100 mm	1101-7171-0029-910	1101-7172-0029-910	181,92 €
TM54-x 150mm KV	0-10V / 4...20mA	150 mm	1101-7171-0039-910	1101-7172-0039-910	189,62 €
TM54-x 200mm KV	0-10V / 4...20mA	200 mm	1101-7171-0049-910	1101-7172-0049-910	192,08 €
TM54-x 250mm KV	0-10V / 4...20mA	250 mm	1101-7171-0059-910	1101-7172-0059-910	194,35 €
TM54-x 300mm KV	0-10V / 4...20mA	300 mm	1101-7171-0069-910	1101-7172-0069-910	196,26 €
TM54-x 350mm KV	0-10V / 4...20mA	350 mm	1101-7171-0079-910	1101-7172-0079-910	200,03 €
TM54-x 400mm KV	0-10V / 4...20mA	400 mm	1101-7171-0089-910	1101-7172-0089-910	210,57 €
Housing variant "KV":	with cable gland (IP 65)				
Extra charge:	other measuring ranges optional				28,03 €

THERMASGARD® TM 54-Q		Temperature measuring transducer (with M12 connector)				
Type/WG02	Output	Installation length (EL)	Q ●	Item No. Output 0-10V	Item No. Output 4...20mA	Price
TM 54-x Q	x = U / I			IP 65, U-variant	IP 65, I-variant	
TM54-x 50mm Q	0-10V / 4...20mA	50 mm	●	2001-4111-1100-011	2001-4111-2100-011	213,82 €
TM54-x 100mm Q	0-10V / 4...20mA	100 mm	●	2001-4111-1100-021	2001-4111-2100-021	217,75 €
TM54-x 150mm Q	0-10V / 4...20mA	150 mm	●	2001-4111-1100-031	2001-4111-2100-031	225,48 €
TM54-x 200mm Q	0-10V / 4...20mA	200 mm	●	2001-4111-1100-041	2001-4111-2100-041	227,94 €
TM54-x 250mm Q	0-10V / 4...20mA	250 mm	●	2001-4111-1100-051	2001-4111-2100-051	230,21 €
TM54-x 300mm Q	0-10V / 4...20mA	300 mm	●	2001-4111-1100-061	2001-4111-2100-061	232,10 €
TM54-x 350mm Q	0-10V / 4...20mA	350 mm	●	2001-4111-1100-071	2001-4111-2100-071	235,88 €
TM54-x 400mm Q	0-10V / 4...20mA	400 mm	●	2001-4111-1100-081	2001-4111-2100-081	246,43 €
Housing variant "Q":	with M12 connector (male, 5-pin, A-code) (IP 65)					
Extra charge:	other measuring ranges optional				28,03 €	

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One basic device in four variants ...



**TM54 +
TH - MS /xx**

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

**TM54 +
TH - VA /xx**

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

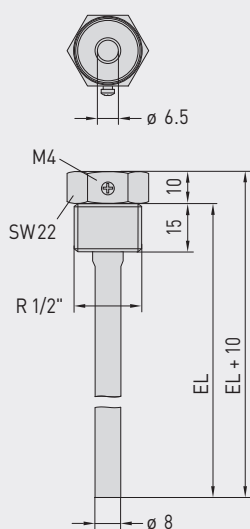
**TM54 +
TH - VA /xx /90**

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

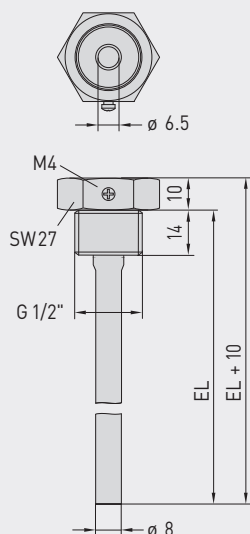
**TM54 +
MF - 06 - M**

Duct temperature sensor
with mounting flange, metal

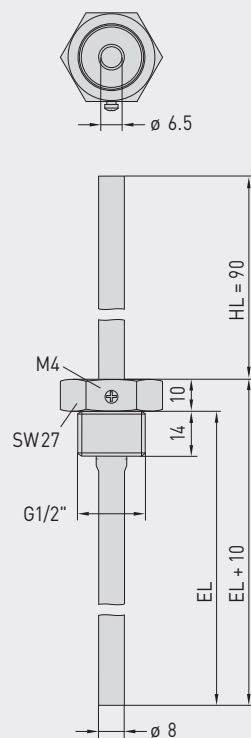
Dimensional drawing
TH - MS /xx



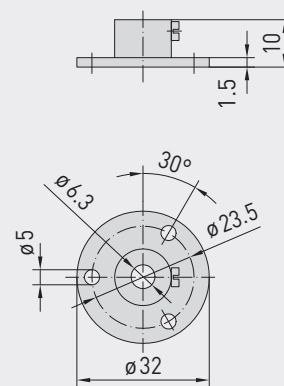
Dimensional drawing
TH - VA /xx



Dimensional drawing
TH - VA /xx / 90



Dimensional drawing
MF - 06 - M





...through combination with accessories:



TH-MS/xx
Immersion sleeve,
brass, nickel-plated / galvanised,
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 / galvanised			without neck tube	
TH-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-001	10,27 €
TH-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-001	11,71 €
TH-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-001	12,36 €
TH-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-001	12,76 €
TH-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-001	14,77 €
TH-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-001	15,18 €
TH-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-001	15,31 €
TH-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-001	15,45 €
TH-VA/xx	Stainless steel, V4A (1.4571)			without neck tube	
TH-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-001	22,38 €
TH-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-001	24,72 €
TH-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-001	26,56 €
TH-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-001	28,01 €
TH-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-001	34,81 €
TH-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-001	36,38 €
TH-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-001	36,63 €
TH-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-001	37,27 €
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	32,04 €
TH-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-2020-001	33,49 €
TH-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-2030-001	35,13 €
TH-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-2040-001	36,63 €
TH-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-2050-001	38,38 €
TH-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-2060-001	41,60 €
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	13,87 €
Note:	For further information see last chapter!				