

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

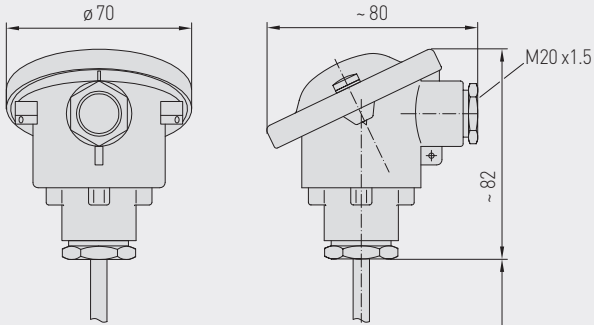
THERMASGARD® TM 54

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

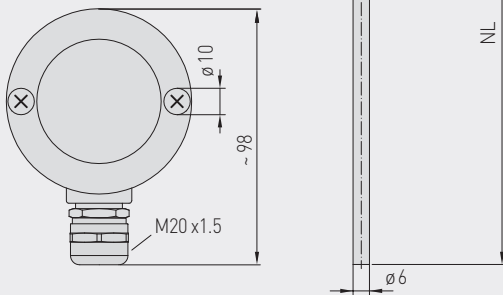


Dimensional drawing [mm]

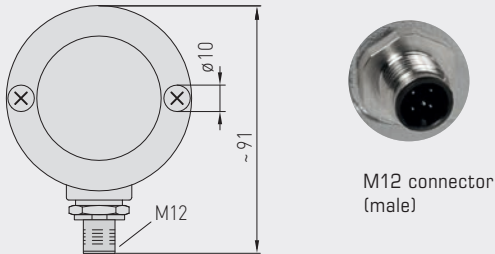
TM 54



Housing with cable gland



Housing with M12 connector



TM 54 standard (IP 54)



TM 54 - KV with cable gland (IP 65)



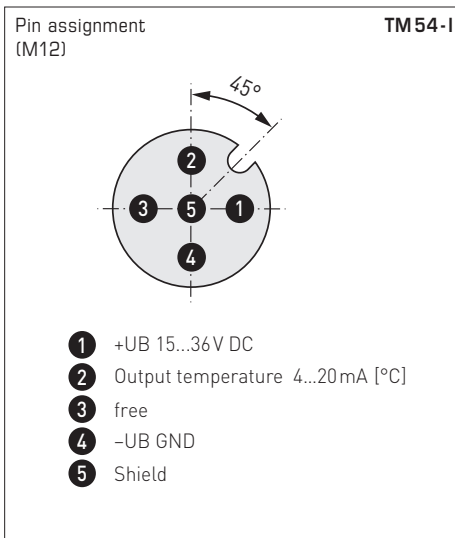
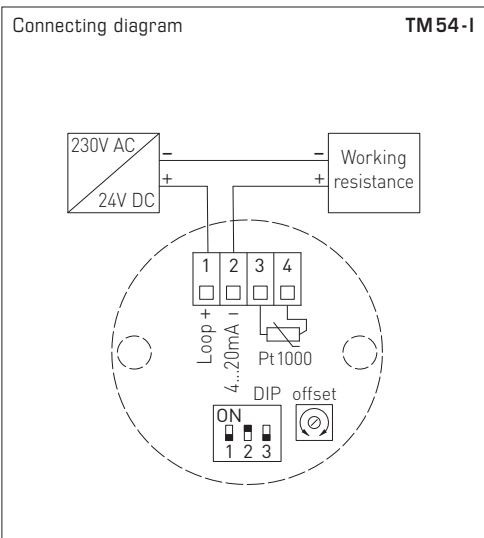
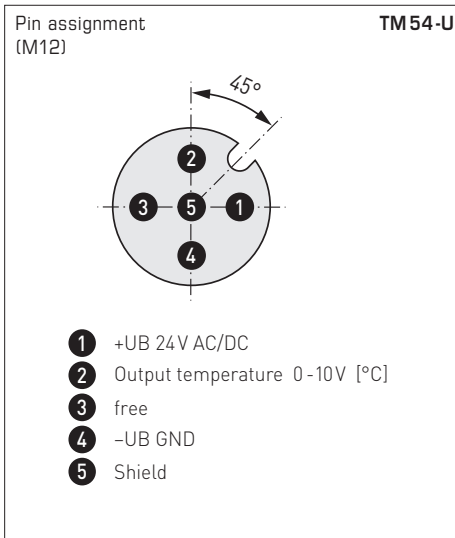
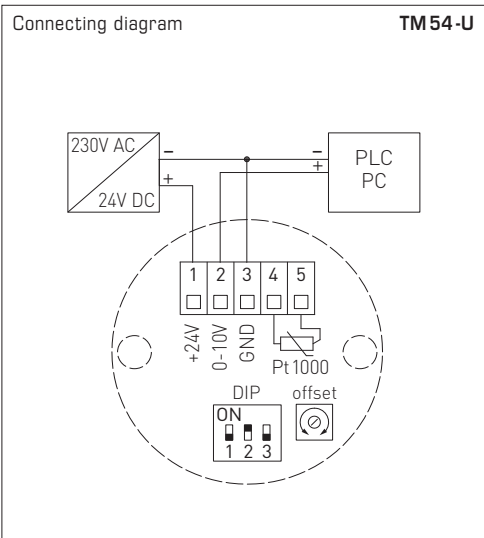
TM 54 - Q with M12 connector (IP 65)



High-performance encapsulation against vibration, mechanical stress and humidity



Immersion / screw-in / duct temperature measuring transducer,
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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



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THERMASGARD® TM 54

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

TM 54
standard
(IP 54)



THERMASGARD® TM 54		Temperature measuring transducer (Basic unit)		
Type / WG01	Output	Installation length (EL)	Item No.	Price
TM 54 - I			IP 54, I - variant	
TM54-I 50mm	4...20 mA	50 mm	1101-7152-0019-910	162,69 €
TM54-I 100mm	4...20 mA	100 mm	1101-7152-0029-910	166,51 €
TM54-I 150mm	4...20 mA	150 mm	1101-7152-0039-910	174,01 €
TM54-I 200mm	4...20 mA	200 mm	1101-7152-0049-910	176,39 €
TM54-I 250mm	4...20 mA	250 mm	1101-7152-0059-910	178,58 €
TM54-I 300mm	4...20 mA	300 mm	1101-7152-0069-910	180,41 €
TM54-I 350mm	4...20 mA	350 mm	1101-7152-0079-910	184,09 €
TM54-I 400mm	4...20 mA	400 mm	1101-7152-0089-910	194,34 €
TM 54 - U			IP 54, U - variant	
TM54-U 50mm	0 - 10 V	50 mm	1101-7151-0019-910	162,69 €
TM54-U 100mm	0 - 10 V	100 mm	1101-7151-0029-910	166,51 €
TM54-U 150mm	0 - 10 V	150 mm	1101-7151-0039-910	174,01 €
TM54-U 200mm	0 - 10 V	200 mm	1101-7151-0049-910	176,39 €
TM54-U 250mm	0 - 10 V	250 mm	1101-7151-0059-910	178,58 €
TM54-U 300mm	0 - 10 V	300 mm	1101-7151-0069-910	180,41 €
TM54-U 350mm	0 - 10 V	350 mm	1101-7151-0079-910	184,10 €
TM54-U 400mm	0 - 10 V	400 mm	1101-7151-0089-910	194,34 €
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			26,16 €

Immersion / screw-in / duct temperature measuring transducer,
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TM 54 - Q
with M12 connector
(IP 65)



THERMASGARD®		Temperature measuring transducer			
TM 54 - Q		(Basic unit with M12 connector)			
Type / WG01	Output	Installation length (EL)	Q	Item No.	Price
TM 54 - I xx Q			●	IP 65, I - variant	
TM54-I 50mm Q	4...20 mA	50 mm	●	2001-4111-2100-011	207,59 €
TM54-I 100mm Q	4...20 mA	100 mm	●	2001-4111-2100-021	211,41 €
TM54-I 150mm Q	4...20 mA	150 mm	●	2001-4111-2100-031	218,91 €
TM54-I 200mm Q	4...20 mA	200 mm	●	2001-4111-2100-041	221,30 €
TM54-I 250mm Q	4...20 mA	250 mm	●	2001-4111-2100-051	223,50 €
TM54-I 300mm Q	4...20 mA	300 mm	●	2001-4111-2100-061	225,34 €
TM54-I 350mm Q	4...20 mA	350 mm	●	2001-4111-2100-071	229,01 €
TM54-I 400mm Q	4...20 mA	400 mm	●	2001-4111-2100-081	239,25 €
TM 54 - U xx Q			●	IP 65, U - variant	
TM54-U 50mm Q	0 - 10 V	50 mm	●	2001-4111-1100-011	207,59 €
TM54-U 100mm Q	0 - 10 V	100 mm	●	2001-4111-1100-021	211,41 €
TM54-U 150mm Q	0 - 10 V	150 mm	●	2001-4111-1100-031	218,91 €
TM54-U 200mm Q	0 - 10 V	200 mm	●	2001-4111-1100-041	221,30 €
TM54-U 250mm Q	0 - 10 V	250 mm	●	2001-4111-1100-051	223,50 €
TM54-U 300mm Q	0 - 10 V	300 mm	●	2001-4111-1100-061	225,34 €
TM54-U 350mm Q	0 - 10 V	350 mm	●	2001-4111-1100-071	229,01 €
TM54-U 400mm Q	0 - 10 V	400 mm	●	2001-4111-1100-081	239,25 €
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:	other measuring ranges optional				26,16 €

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!



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THERMASGARD® TM 54

Immersion / screw-in / duct temperature measuring transducer,
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TM 54 - KV
with cable gland
(IP 65)



THERMASGARD®		Temperature measuring transducer		
TM 54 - KV		(Basic unit with cable gland)		
Type / WG01	Output	Installation length (EL)	Item No.	Price
TM 54 - I xx KV			IP 65, I - variant	
TM54-I 50mm KV	4...20 mA	50 mm	1101-7172-0019-910	172,80 €
TM54-I 100mm KV	4...20 mA	100 mm	1101-7172-0029-910	176,62 €
TM54-I 150mm KV	4...20 mA	150 mm	1101-7172-0039-910	184,10 €
TM54-I 200mm KV	4...20 mA	200 mm	1101-7172-0049-910	186,49 €
TM54-I 250mm KV	4...20 mA	250 mm	1101-7172-0059-910	188,69 €
TM54-I 300mm KV	4...20 mA	300 mm	1101-7172-0069-910	190,54 €
TM54-I 350mm KV	4...20 mA	350 mm	1101-7172-0079-910	194,20 €
TM54-I 400mm KV	4...20 mA	400 mm	1101-7172-0089-910	204,44 €
TM 54 - U xx KV			IP 65, U - variant	
TM54-U 50mm KV	0 - 10 V	50 mm	1101-7171-0019-910	172,80 €
TM54-U 100mm KV	0 - 10 V	100 mm	1101-7171-0029-910	176,62 €
TM54-U 150mm KV	0 - 10 V	150 mm	1101-7171-0039-910	184,10 €
TM54-U 200mm KV	0 - 10 V	200 mm	1101-7171-0049-910	186,49 €
TM54-U 250mm KV	0 - 10 V	250 mm	1101-7171-0059-910	188,69 €
TM54-U 300mm KV	0 - 10 V	300 mm	1101-7171-0069-910	190,54 €
TM54-U 350mm KV	0 - 10 V	350 mm	1101-7171-0079-910	194,20 €
TM54-U 400mm KV	0 - 10 V	400 mm	1101-7171-0089-910	204,44 €
Housing variant "KV":	Cable connection with cable gland			
Extra charge:	other measuring ranges optional			26,16 €

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

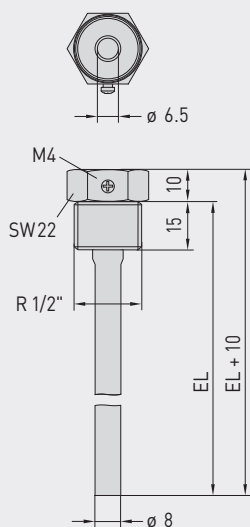
**TM54 +
TH -VA /xx /90**

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

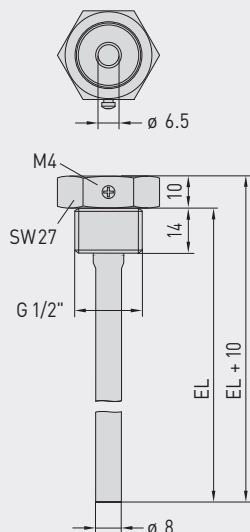
**TM54 +
MF -06 -M**

Duct temperature sensor
with mounting flange, metal

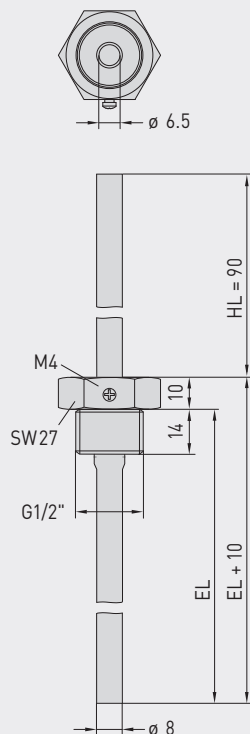
Dimensional drawing
TH -MS /xx



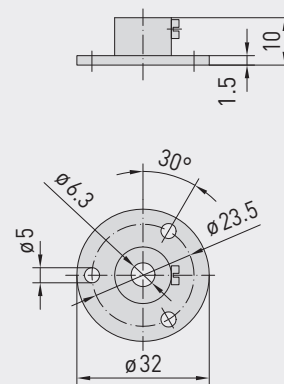
Dimensional drawing
TH -VA /xx



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	9,97 €
TH-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-001	11,37 €
TH-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-001	12,00 €
TH-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-001	12,39 €
TH-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-001	14,34 €
TH-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-001	14,74 €
TH-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-001	14,86 €
TH-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-001	15,00 €
TH-VA/xx	Stainless steel, V4A (1.4571)			without neck tube	
TH-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-001	21,73 €
TH-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-001	24,00 €
TH-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-001	25,79 €
TH-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-001	27,19 €
TH-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-001	33,80 €
TH-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-001	35,32 €
TH-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-001	35,56 €
TH-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-001	36,18 €
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	31,11 €
TH-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-2020-001	32,51 €
TH-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-2030-001	34,11 €
TH-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-2040-001	35,56 €
TH-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-2050-001	37,26 €
TH-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-2060-001	40,39 €
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	13,47 €
Note:	For further information see last chapter!				