

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

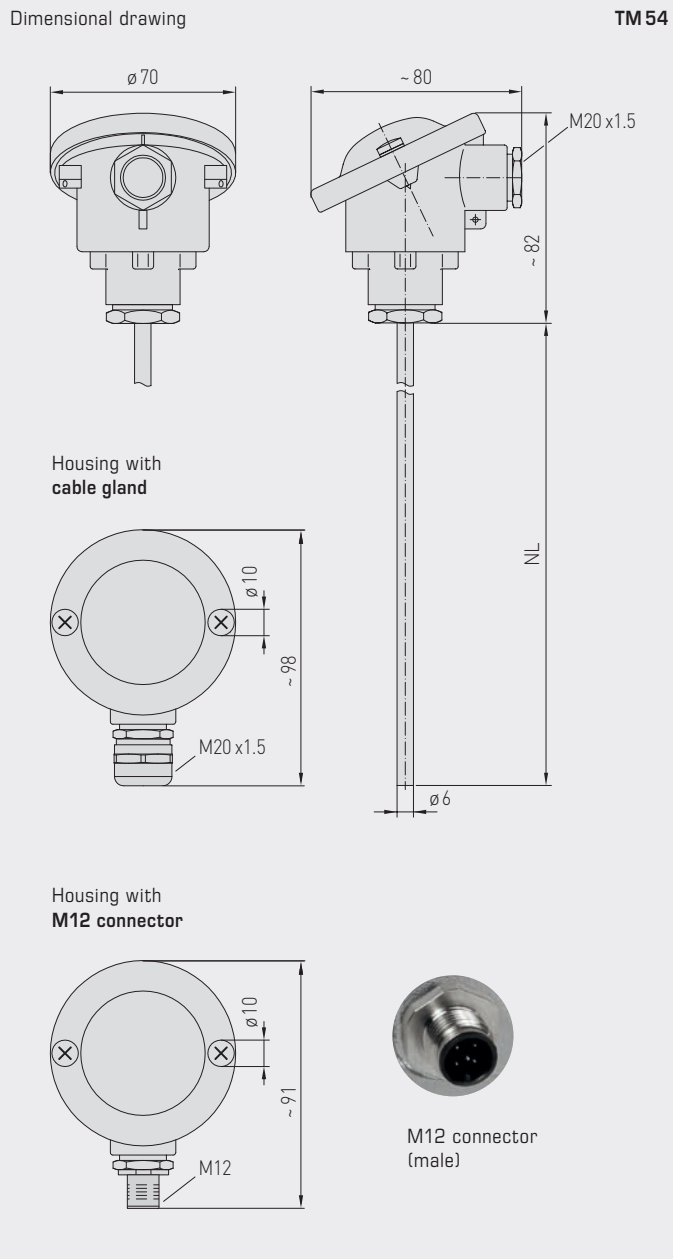
Power supply:	24 V AC / DC (± 10%) for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_b \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 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 (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, 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, $T_{max} = +700^\circ\text{C}$



S+S REGELTECHNIK

Thermasgard® TM 54

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



High-performance encapsulation against vibration, mechanical stress and humidity



TM 54 standard (IP 54)



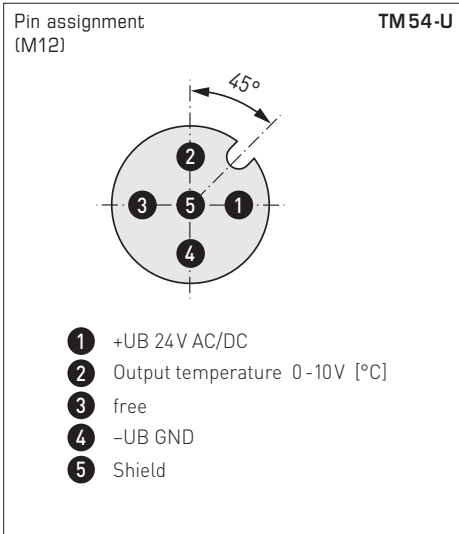
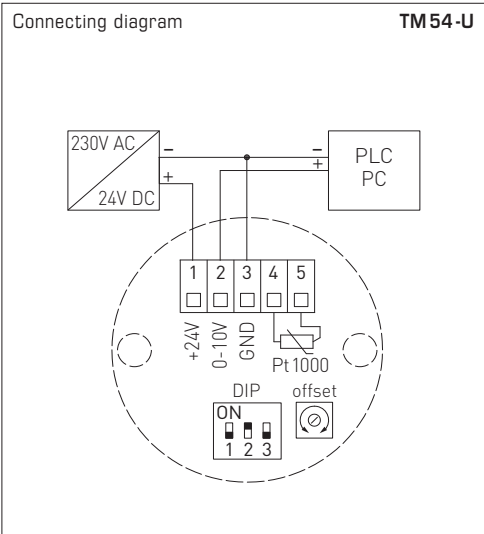
TM 54-KV with cable gland (IP 65)



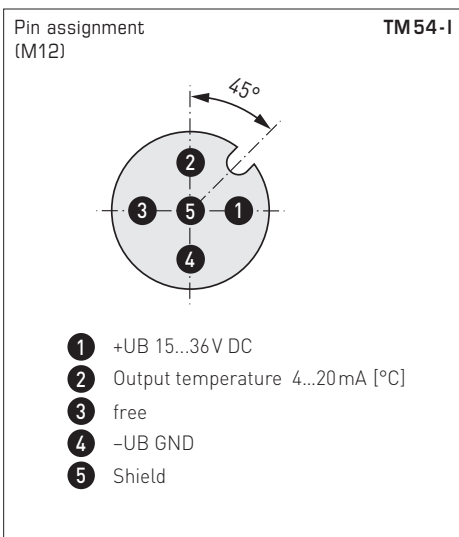
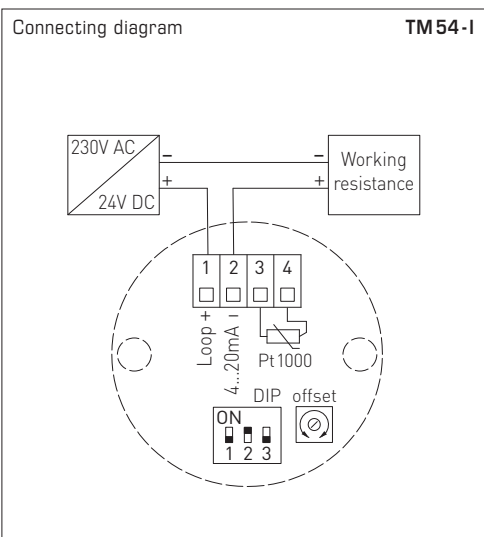
TM 54-Q with M12 connector (IP 65)



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



S+S REGELTECHNIK

THERMASGARD® TM 54

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				IP 54, I - variant	
TM54-I 50mm	Pt1000	4...20 mA	50 mm	1101-7152-0019-910	151,87 €
TM54-I 100mm	Pt1000	4...20 mA	100 mm	1101-7152-0029-910	155,45 €
TM54-I 150mm	Pt1000	4...20 mA	150 mm	1101-7152-0039-910	162,45 €
TM54-I 200mm	Pt1000	4...20 mA	200 mm	1101-7152-0049-910	164,67 €
TM54-I 250mm	Pt1000	4...20 mA	250 mm	1101-7152-0059-910	166,71 €
TM54-I 300mm	Pt1000	4...20 mA	300 mm	1101-7152-0069-910	168,42 €
TM54-I 350mm	Pt1000	4...20 mA	350 mm	1101-7152-0079-910	171,85 €
TM54-I 400mm	Pt1000	4...20 mA	400 mm	1101-7152-0089-910	181,43 €
TM 54 - U				IP 54, U - variant	
TM54-U 50mm	Pt1000	0 - 10 V	50 mm	1101-7151-0019-910	151,87 €
TM54-U 100mm	Pt1000	0 - 10 V	100 mm	1101-7151-0029-910	155,45 €
TM54-U 150mm	Pt1000	0 - 10 V	150 mm	1101-7151-0039-910	162,45 €
TM54-U 200mm	Pt1000	0 - 10 V	200 mm	1101-7151-0049-910	164,67 €
TM54-U 250mm	Pt1000	0 - 10 V	250 mm	1101-7151-0059-910	166,71 €
TM54-U 300mm	Pt1000	0 - 10 V	300 mm	1101-7151-0069-910	168,42 €
TM54-U 350mm	Pt1000	0 - 10 V	350 mm	1101-7151-0079-910	171,86 €
TM54-U 400mm	Pt1000	0 - 10 V	400 mm	1101-7151-0089-910	181,43 €
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				25,40 €

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

TM 54 - Q
with M12 connector
(IP 65)



THERMASGARD®		Temperature measuring transducer (Basic unit with M12 connector)				
Type / WG01	Sensor	Output	Installation length (EL)	Q	Item No.	Price
TM 54 - I xx Q				IP 65, I - variant		
TM54-I 50mm Q	Pt1000	4...20 mA	50 mm	●	2001-4111-2100-011	193,80 €
TM54-I 100mm Q	Pt1000	4...20 mA	100 mm	●	2001-4111-2100-021	197,36 €
TM54-I 150mm Q	Pt1000	4...20 mA	150 mm	●	2001-4111-2100-031	204,36 €
TM54-I 200mm Q	Pt1000	4...20 mA	200 mm	●	2001-4111-2100-041	206,59 €
TM54-I 250mm Q	Pt1000	4...20 mA	250 mm	●	2001-4111-2100-051	208,64 €
TM54-I 300mm Q	Pt1000	4...20 mA	300 mm	●	2001-4111-2100-061	210,36 €
TM54-I 350mm Q	Pt1000	4...20 mA	350 mm	●	2001-4111-2100-071	213,79 €
TM54-I 400mm Q	Pt1000	4...20 mA	400 mm	●	2001-4111-2100-081	223,35 €
TM 54 - U xx Q				IP 65, 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	197,36 €
TM54-U 150mm Q	Pt1000	0 - 10 V	150 mm	●	2001-4111-1100-031	204,36 €
TM54-U 200mm Q	Pt1000	0 - 10 V	200 mm	●	2001-4111-1100-041	206,59 €
TM54-U 250mm Q	Pt1000	0 - 10 V	250 mm	●	2001-4111-1100-051	208,64 €
TM54-U 300mm Q	Pt1000	0 - 10 V	300 mm	●	2001-4111-1100-061	210,36 €
TM54-U 350mm Q	Pt1000	0 - 10 V	350 mm	●	2001-4111-1100-071	213,79 €
TM54-U 400mm Q	Pt1000	0 - 10 V	400 mm	●	2001-4111-1100-081	223,35 €
Housing variant "Q":		Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:		other measuring ranges optional				25,40 €

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®		Temperature measuring transducer TM 54 - KV			
		(Basic unit with cable gland)			
Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
TM 54 - I xx KV				IP 65, I - variant	
TM54-I 50mm KV	Pt1000	4...20 mA	50 mm	1101-7172-0019-910	161,31 €
TM54-I 100mm KV	Pt1000	4...20 mA	100 mm	1101-7172-0029-910	164,88 €
TM54-I 150mm KV	Pt1000	4...20 mA	150 mm	1101-7172-0039-910	171,86 €
TM54-I 200mm KV	Pt1000	4...20 mA	200 mm	1101-7172-0049-910	174,10 €
TM54-I 250mm KV	Pt1000	4...20 mA	250 mm	1101-7172-0059-910	176,15 €
TM54-I 300mm KV	Pt1000	4...20 mA	300 mm	1101-7172-0069-910	177,87 €
TM54-I 350mm KV	Pt1000	4...20 mA	350 mm	1101-7172-0079-910	181,29 €
TM54-I 400mm KV	Pt1000	4...20 mA	400 mm	1101-7172-0089-910	190,85 €
TM 54 - U xx KV				IP 65, U - variant	
TM54-U 50mm KV	Pt1000	0 - 10 V	50 mm	1101-7171-0019-910	161,31 €
TM54-U 100mm KV	Pt1000	0 - 10 V	100 mm	1101-7171-0029-910	164,88 €
TM54-U 150mm KV	Pt1000	0 - 10 V	150 mm	1101-7171-0039-910	171,86 €
TM54-U 200mm KV	Pt1000	0 - 10 V	200 mm	1101-7171-0049-910	174,10 €
TM54-U 250mm KV	Pt1000	0 - 10 V	250 mm	1101-7171-0059-910	176,15 €
TM54-U 300mm KV	Pt1000	0 - 10 V	300 mm	1101-7171-0069-910	177,87 €
TM54-U 350mm KV	Pt1000	0 - 10 V	350 mm	1101-7171-0079-910	181,29 €
TM54-U 400mm KV	Pt1000	0 - 10 V	400 mm	1101-7171-0089-910	190,85 €
Housing variant "KV":	Cable connection with cable gland				
Extra charge:	other measuring ranges optional				25,40 €

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

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

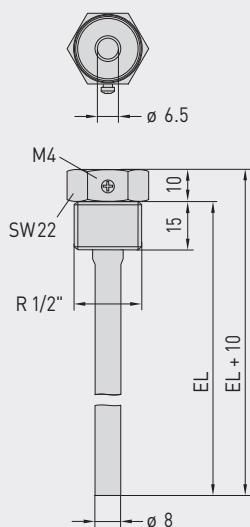
**TM54 +
TH -VA/xx/90**

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

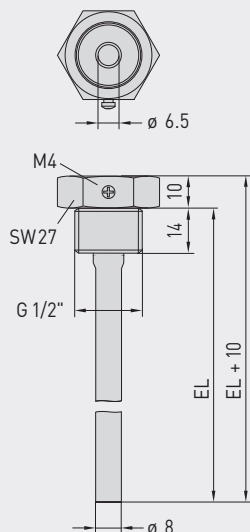
**TM54 +
MF-06-M**

Duct temperature sensor
with mounting flange, metal

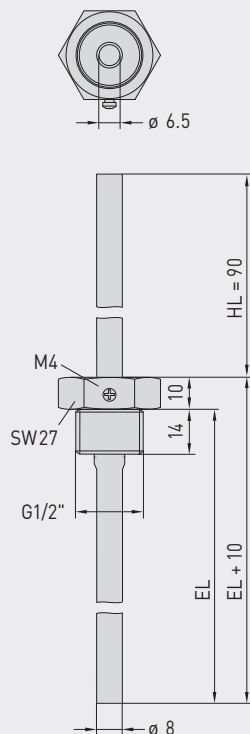
**Dimensional drawing
TH -ms/xx**



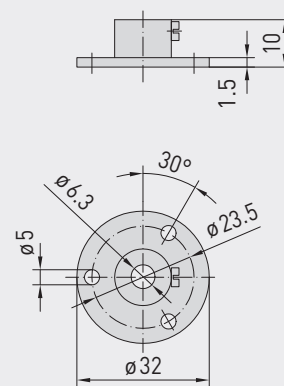
**Dimensional drawing
TH -VA/xx**



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



**Dimensional drawing
MF-06-M**





...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					
TH-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-001	9,31 €
TH-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-001	10,61 €
TH-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-001	11,20 €
TH-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-001	11,56 €
TH-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-001	13,39 €
TH-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-001	13,76 €
TH-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-001	13,87 €
TH-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-001	14,00 €
TH - VA / xx Stainless steel, V4A (1.4571)					
without neck tube					
TH-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-001	20,28 €
TH-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-001	22,41 €
TH-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-001	24,08 €
TH-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-001	25,38 €
TH-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-001	31,55 €
TH-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-001	32,97 €
TH-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-001	33,19 €
TH-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-001	33,78 €
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	29,04 €
TH-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-2020-001	30,35 €
TH-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-2030-001	31,84 €
TH-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-2040-001	33,19 €
TH-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-2050-001	34,79 €
TH-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-2060-001	37,71 €
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	9,56 €
Note:	For further information see last chapter!				