

**Patented quality product** (patent no. DE 10 2012 017 500.0 and DE 10 2015 015 941 B4)

Calibratable temperature measuring transducer **THERMASGARD® TM43**, with eight switchable measuring ranges (max. -20...+150 °C), active output, straight protective tube, housing made from impact-resistant plastic with snap-on lid (IP54), optionally with or without display. The measuring transducer converts the measured variables into a standard signal of 0-10V or 4...20mA. Available as a U variant (3-wire) or I variant (2-wire).

Calibratable temperature measuring transducer **THERMASGARD® TM65**, with eight switchable measuring ranges (max. -20...+150 °C), active output, straight protective tube, housing made from impact-resistant plastic with quick-locking screws (IP67), optionally with or without display. The standard display can be changed from SI [°C] to imperial [°F] units via DIP switch. The measuring transducer converts the measured variables into a standard signal of 0-10V or 4...20mA. The unit with **Automatic Output Switching (AOS)** detects the required output type and automatically switches to U or I output. Alternatively, a **type version** (2-wire) with 2-wire connection and I output is available.

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.

**TM43**

with snap-on lid  
(IP54)



**TM65**

with quick-locking screws  
(IP67)



**TECHNICAL DATA**

**TMxx - U**

Power supply:	24 V AC / DC (± 10 %)
Load resistance:	$R_L > 15 \text{ k}\Omega$ with U variant ( <b>TM43</b> )
Connection type:	3-wire connection
Output:	<b>0-10V</b>

**TMxx - I**

Power supply:	15...36V DC, depending on working resistance, residual ripple stabilised ± 0.3V
Working resistance:	$R_B \text{ (}\Omega\text{)} = (U_B - 14 \text{ V}) / 0.02 \text{ A}$
Connection type:	2-wire connection
Output:	<b>4...20 mA</b>

**TMxx - A (AOS)**

Power supply:	24 V AC / DC (± 10 %)
Load resistance:	$R_L = 25...450 \text{ }\Omega$ with AOS I variant $R_L > 15 \text{ k}\Omega$ with AOS U variant
Connection type:	3-wire connection
Output:	<b>automatic 0-10V / 4...20 mA</b> (via <b>Automatic Output Switching</b> – the unit detects the required output type and automatically switches to U or I output)

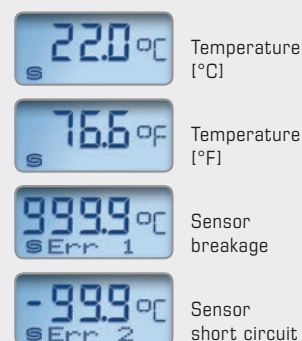
**GENERAL**

Power consumption:	< 1.0VA / 24V DC; < 2.2VA / 24V AC
System of units:	<b>SI</b> (default) or <b>imperial</b> ( <b>TM65</b> can be changed via DIP switch)
Data points:	temperature [°C] [°F]
Measuring ranges:	<b>Multi-range switching with 8 measuring ranges,</b> see table (other ranges optional) <b>with manual zero point correction (± 10K)</b>
Sensor:	Pt1000, DIN EN 60751, class B ( <b>Perfect Sensor Protection</b> )
Accuracy, temperature:	typically ± 0.2K at +25 °C
Protective tube:	stainless steel, <b>V4A</b> (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Housing:	Plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, colour traffic white (similar to RAL 9016), housing cover for display is transparent! <b>TM43 with snap-on lid</b> <b>TM65 with quick-locking screws</b> (slotted / Phillips head combination)
Housing dimension:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable connection:	<b>Cable gland</b> , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or <b>M12 connector</b> according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> , via terminal screws
Ambient temperature:	measuring transducer -30...+70 °C
Permitted humidity:	< 95% RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	<b>TM43 IP54</b> (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) <b>TM65 IP67</b> (according to EN 60 529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state
Standards:	CE conformity 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</b> temperature and the internal diagnostics (sensor breakage, sensor short circuit)

**ACCESSORIES**

(see table)

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





**NEW**

S+S REGELTECHNIK

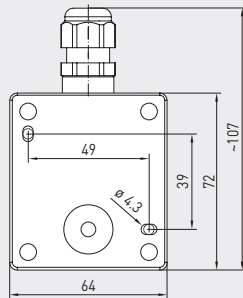
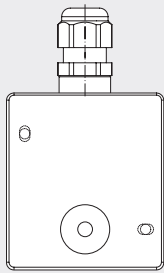
**THERMASGARD® TM 43**  
**THERMASGARD® TM 65**

Immersion / screw-in / duct temperature measuring transducer,  
calibratable, with multi-range switching  
and active output (Automatic Output Switching)

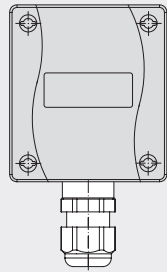
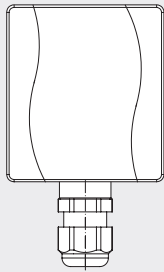
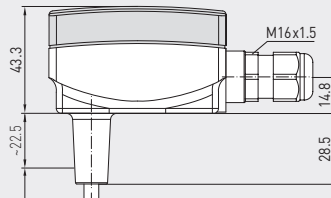
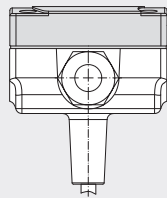
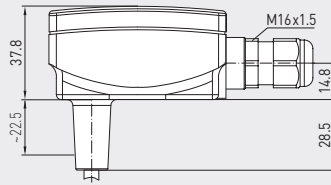
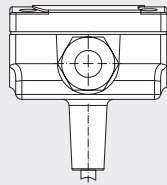


Dimensional drawing  
(mm)

TM 43  
TM 65



M12 connector  
(optional on request)



with snap-on lid

with quick-locking  
screws



TM 43  
with display and  
snap-on lid  
(IP54)



TM 65  
with display and  
quick-locking screws  
(IP67)



High-performance encapsulation against  
vibration, mechanical stress and humidity

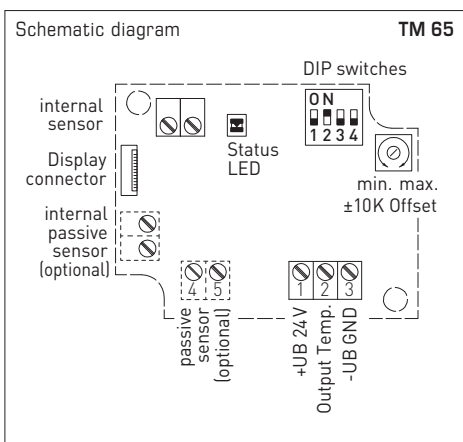
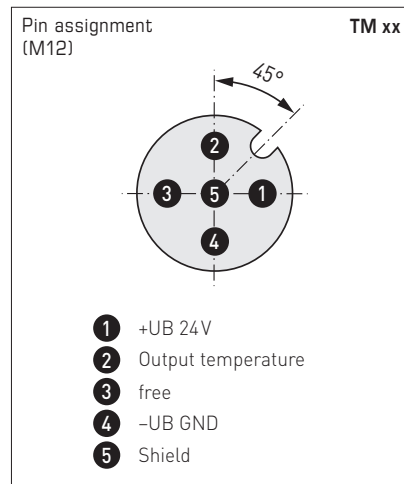
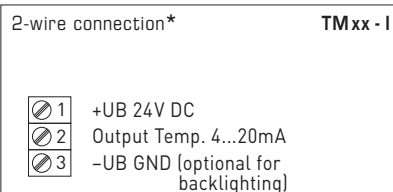
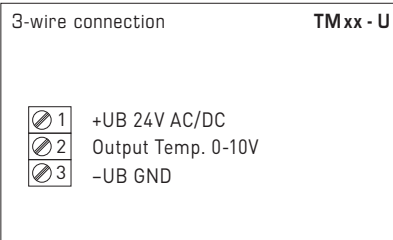
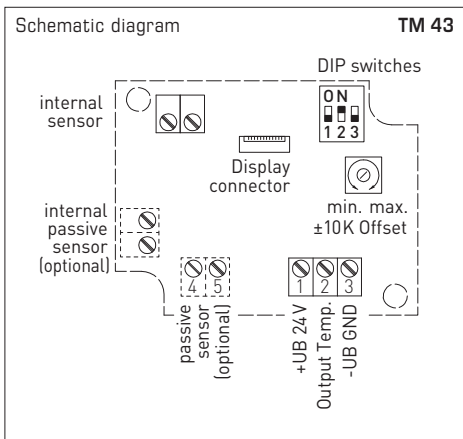
Automatic detection and switching  
to standard signal 0...10V or 4...20 mA

**PS-PROTECTION**  
PERFECT SENSOR PROTECTION

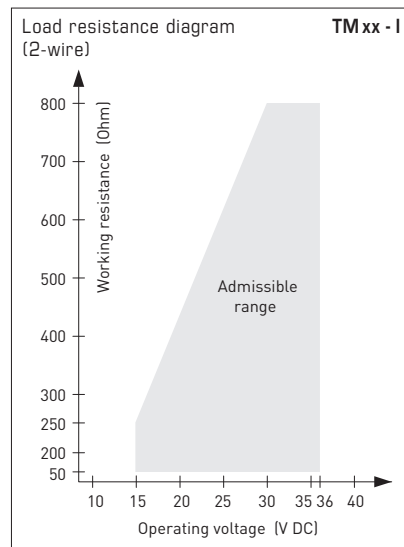
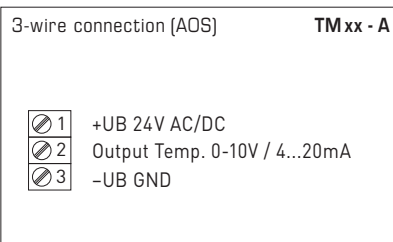
**AOS-PATENTED**  
AUTOMATIC OUTPUT SWITCHING



TM 65  
Basic device  
with accessories



\* 2-wire connection for devices with / without display (not illuminated)  
3-wire connection for devices with illuminated display



Measuring ranges [°C]	DIP 1	DIP 2	DIP 3	Measuring ranges [°F]
-20...+150 °C	ON	ON	ON	-4...+302 °F
-50... +50 °C	OFF	ON	ON	-58...+122 °F
-20... +80 °C	ON	OFF	ON	-4...+176 °F
-30... +60 °C	OFF	OFF	ON	-22...+140 °F
0... +40 °C	ON	ON	OFF	32...+104 °F
<b>0... +50 °C *</b>	<b>OFF</b>	<b>ON</b>	<b>OFF</b>	<b>32...+122 °F *</b>
0...+100 °C	ON	OFF	OFF	32...+212 °F
0...+150 °C	OFF	OFF	OFF	32...+302 °F

Display [°C] / [°F]	DIP 4
Imperial [°F]	ON
<b>SI (default) [°C]</b>	<b>OFF</b>

**TM 65 Display switchable**  
Temperature [°C] → [°F]  
The display value depends on the set unit system (DIP 4).

For further technical information, see the operating instructions

\* (default)





NEW

S+S REGELTECHNIK

THERMASGARD® TM 43  
THERMASGARD® TM 65

Immersion / screw-in / duct temperature measuring transducer,  
calibratable, with multi-range switching  
and active output (Automatic Output Switching)

THERMASGARD® TM 43 Temperature measuring transducer (basic device with snap-on lid), <i>Standard</i>					
Type / WG01B	Output	Inserted Length (EL)	Display	Item No.	Price
<b>TM 43-I</b>	<b>(2-wire)</b>			<b>IP54</b>	
TM43-I 50mm	4...20mA	50 mm		1101-7112-0019-900	79,76 €
TM43-I 50mm LCD	4...20mA	50 mm	■	1101-7112-2019-900	152,98 €
TM43-I 100mm	4...20mA	100 mm		1101-7112-0029-900	81,07 €
TM43-I 100mm LCD	4...20mA	100 mm	■	1101-7112-2029-900	154,27 €
TM43-I 150mm	4...20mA	150 mm		1101-7112-0039-900	82,26 €
TM43-I 150mm LCD	4...20mA	150 mm	■	1101-7112-2039-900	155,48 €
TM43-I 200mm	4...20mA	200 mm		1101-7112-0049-900	82,66 €
TM43-I 200mm LCD	4...20mA	200 mm	■	1101-7112-2049-900	155,87 €
TM43-I 250mm	4...20mA	250 mm		1101-7112-0059-900	84,03 €
TM43-I 250mm LCD	4...20mA	250 mm	■	1101-7112-2059-900	158,08 €
TM43-I 300mm	4...20mA	300 mm		1101-7112-0069-900	85,40 €
TM43-I 300mm LCD	4...20mA	300 mm	■	1101-7112-2069-900	158,60 €
<b>TM 43-U</b>	<b>(3-wire)</b>			<b>IP54</b>	
TM43-U 50mm	0-10V	50 mm		1101-7111-0019-900	79,76 €
TM43-U 50mm LCD	0-10V	50 mm	■	1101-7111-2019-900	152,98 €
TM43-U 100mm	0-10V	100 mm		1101-7111-0029-900	81,07 €
TM43-U 100mm LCD	0-10V	100 mm	■	1101-7111-2029-900	154,27 €
TM43-U 150mm	0-10V	150 mm		1101-7111-0039-900	82,26 €
TM43-U 150mm LCD	0-10V	150 mm	■	1101-7111-2039-900	155,48 €
TM43-U 200mm	0-10V	200 mm		1101-7111-0049-900	82,66 €
TM43-U 200mm LCD	0-10V	200 mm	■	1101-7111-2049-900	155,87 €
TM43-U 250mm	0-10V	250 mm		1101-7111-0059-900	84,03 €
TM43-U 250mm LCD	0-10V	250 mm	■	1101-7111-2059-900	158,08 €
TM43-U 300mm	0-10V	300 mm		1101-7111-0069-900	85,40 €
TM43-U 300mm LCD	0-10V	300 mm	■	1101-7111-2069-900	158,60 €

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
<b>TM 65-I</b>	<b>(2-wire)</b>			<b>IP67</b>	
TM65-I 50mm	4...20mA	50 mm		1101-7122-0019-900	110,54 €
TM65-I 50mm LCD	4...20mA	50 mm	■	1101-7122-2019-900	166,73 €
TM65-I 100mm	4...20mA	100 mm		1101-7122-0029-900	110,84 €
TM65-I 100mm LCD	4...20mA	100 mm	■	1101-7122-2029-900	167,01 €
TM65-I 150mm	4...20mA	150 mm		1101-7122-0039-900	111,09 €
TM65-I 150mm LCD	4...20mA	150 mm	■	1101-7122-2039-900	167,29 €
TM65-I 200mm	4...20mA	200 mm		1101-7122-0049-900	111,32 €
TM65-I 200mm LCD	4...20mA	200 mm	■	1101-7122-2049-900	167,50 €
TM65-I 250mm	4...20mA	250 mm		1101-7122-0059-900	111,67 €
TM65-I 250mm LCD	4...20mA	250 mm	■	1101-7122-2059-900	167,85 €
TM65-I 300mm	4...20mA	300 mm		1101-7122-0069-900	112,51 €
TM65-I 300mm LCD	4...20mA	300 mm	■	1101-7122-2069-900	168,67 €
TM65-I 400mm	4...20mA	400 mm		1101-7122-0089-900	114,77 €
TM65-I 400mm LCD	4...20mA	400 mm	■	1101-7122-2089-900	170,96 €
<b>TM 65-A</b>	<b>* (3-wire AOS)</b>			<b>IP67</b>	
TM65-A 50mm	0-10V / 4...20mA	50 mm		1101-712E-0019-900	110,54 €
TM65-A 50mm LCD	0-10V / 4...20mA	50 mm	■	1101-712E-2019-900	166,73 €
TM65-A 100mm	0-10V / 4...20mA	100 mm		1101-712E-0029-900	110,84 €
TM65-A 100mm LCD	0-10V / 4...20mA	100 mm	■	1101-712E-2029-900	167,01 €
TM65-A 150mm	0-10V / 4...20mA	150 mm		1101-712E-0039-900	111,09 €
TM65-A 150mm LCD	0-10V / 4...20mA	150 mm	■	1101-712E-2039-900	167,29 €
TM65-A 200mm	0-10V / 4...20mA	200 mm		1101-712E-0049-900	111,32 €
TM65-A 200mm LCD	0-10V / 4...20mA	200 mm	■	1101-712E-2049-900	167,50 €
TM65-A 250mm	0-10V / 4...20mA	250 mm		1101-712E-0059-900	111,67 €
TM65-A 250mm LCD	0-10V / 4...20mA	250 mm	■	1101-712E-2059-900	167,85 €
TM65-A 300mm	0-10V / 4...20mA	300 mm		1101-712E-0069-900	112,51 €
TM65-A 300mm LCD	0-10V / 4...20mA	300 mm	■	1101-712E-2069-900	168,67 €
TM65-A 400mm	0-10V / 4...20mA	400 mm		1101-712E-0089-900	114,77 €
TM65-A 400mm LCD	0-10V / 4...20mA	400 mm	■	1101-712E-2089-900	170,96 €

**Automatic Output Switching:** \* patented analogue interface (patent no. DE 10 2015 015 941 B4)  
Unit automatically detects the required output type 0-10V or 4...20mA.

Extra charge: Cable connection with **M12 connector** according to DIN EN 61076-2-101 on request

Immersion / screw-in / duct temperature measuring transducer,  
calibratable, with multi-range switching  
and active output (Automatic Output Switching)

One basic device in four variants ...



**PATENTED**  
DE 10 2012 017 500.0

**TMxx +  
TH08-MS-G/xx**

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

**TMxx +  
TH08-VA/xx**

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

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

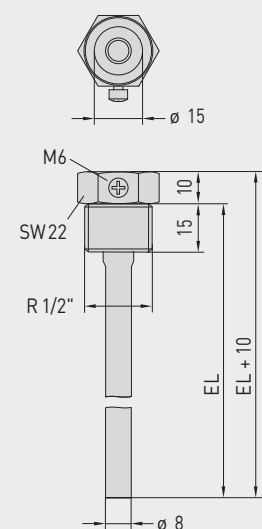
Immersion / screw-in  
temperature sensor with  
immersion sleeve with  
neck tube, stainless steel, V4A

**TMxx +  
MF-15-K**

Duct temperature sensor  
with mounting flange, plastic  
sleeve with neck tube, stainless steel, V4A

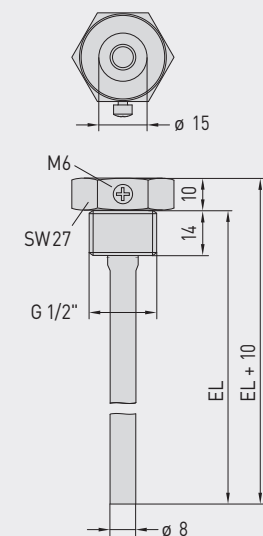
**TH08-MS-G/xx**

Dimensional drawing  
[mm]



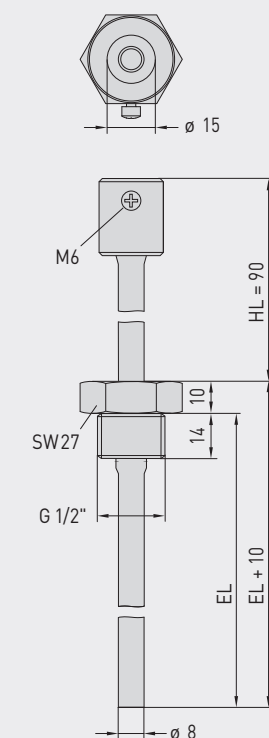
**TH08-VA/xx**

Dimensional drawing  
[mm]



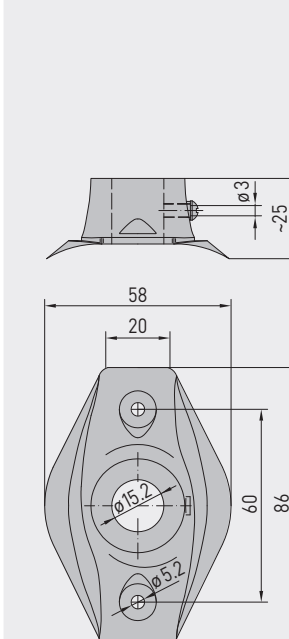
**TH08-VA/xx/90**

Dimensional drawing  
[mm]



**MF-15-K**

Dimensional drawing  
[mm]





... through combination with accessories:



**TH08-MS-G/xx**  
Immersion sleeve,  
polished brass,  
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 <sub>max</sub> (static)	T <sub>max</sub>	Inserted Length (EL)	Item No.	Price
<b>TH08-MS-G xx</b>	<b>polished brass</b>			without neck tube	
TH08-MS-G 50MM	10 bar	+150 °C	50 mm	7100-0017-0010-132	13,82 €
TH08-MS-G 100MM	10 bar	+150 °C	100 mm	7100-0017-0020-132	14,46 €
TH08-MS-G 150MM	10 bar	+150 °C	150 mm	7100-0017-0030-132	15,64 €
TH08-MS-G 200MM	10 bar	+150 °C	200 mm	7100-0017-0040-132	16,73 €
TH08-MS-G 250MM	10 bar	+150 °C	250 mm	7100-0017-0050-132	19,37 €
TH08-MS-G 300MM	10 bar	+150 °C	300 mm	7100-0017-0060-132	20,25 €
TH08-MS-G 350MM	10 bar	+150 °C	350 mm	7100-0017-0070-132	20,79 €
TH08-MS-G 400MM	10 bar	+150 °C	400 mm	7100-0017-0080-132	21,32 €
<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	23,82 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	26,24 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	28,39 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	29,78 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	37,06 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	38,78 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	39,53 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	40,60 €
<b>TH08-VA/xx/90</b>	<b>Stainless steel, V4A (1.4571)</b>			<b>with neck tube (90 mm)</b>	
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	32,04 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	33,49 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	35,13 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	36,63 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	38,38 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	41,60 €
Note:	inner diameter of socket 15.0 mm For further information see last chapter!				
<b>Mounting flange (Accessories)</b>					
Type / WG01B		T <sub>max</sub>		Item No.	Price
<b>MF</b>					
<b>MF-15-K</b>	<b>Mounting flange, plastic,</b> 56.8x84.3mm, Ø 15.2mm tube gland	+100 °C		7100-0032-0000-000	6,75 €
Note:	For further information see last chapter!				