

**Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection**

**Patented quality product (Immersion sensor patent no. DE 10 2012 017 500.0)**

Calibratable temperature measuring transducer with sensor tube **THERMASGARD® TM 65 - Modbus - T3**, with Modbus connection, in an impact-resistant plastic housing with quick-locking screws, stainless steel-protective tube (50 - 400 mm), optionally with /without display, measures temperature (-50...+150 °C). International system of units **SI** (default) can be changed to **imperial** (via Modbus).

The duct sensor is used to detect the temperature in liquid or gaseous media. Use the stainless steel immersion sleeves for aggressive media. It is used in heating engineering, ventilation and air conditioning ducts, pipes, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, machine and systems engineering and the entire industry sector.

**Innovative Modbus sensor** with galvanically separated RS485 Modbus interface, selectable bus termination resistance, DIP switch for setting the bus parameters and bus address in current-free state, internal LEDs for telegram status display, two separate push-in terminals and large three-line display (illuminated, with customised programming in the 7-segment range and dot-matrix range). Uses **internal diagnostics** to detect sensor breakage or sensor short circuit as errors. The error messages can be retrieved via Modbus and are shown on the display. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TM 65 - Modbus - T3

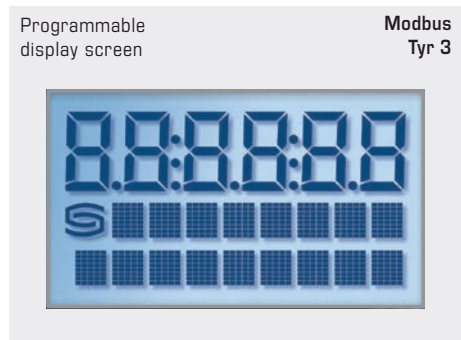
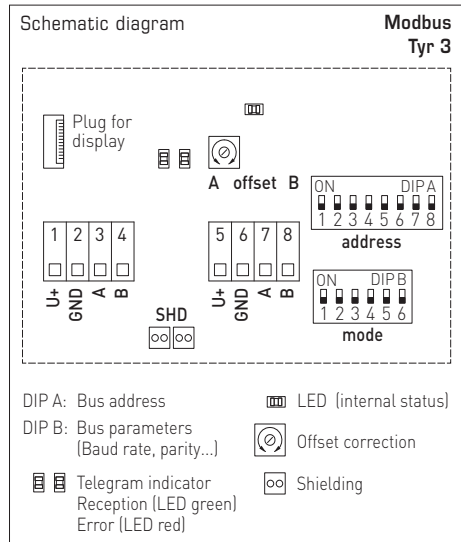


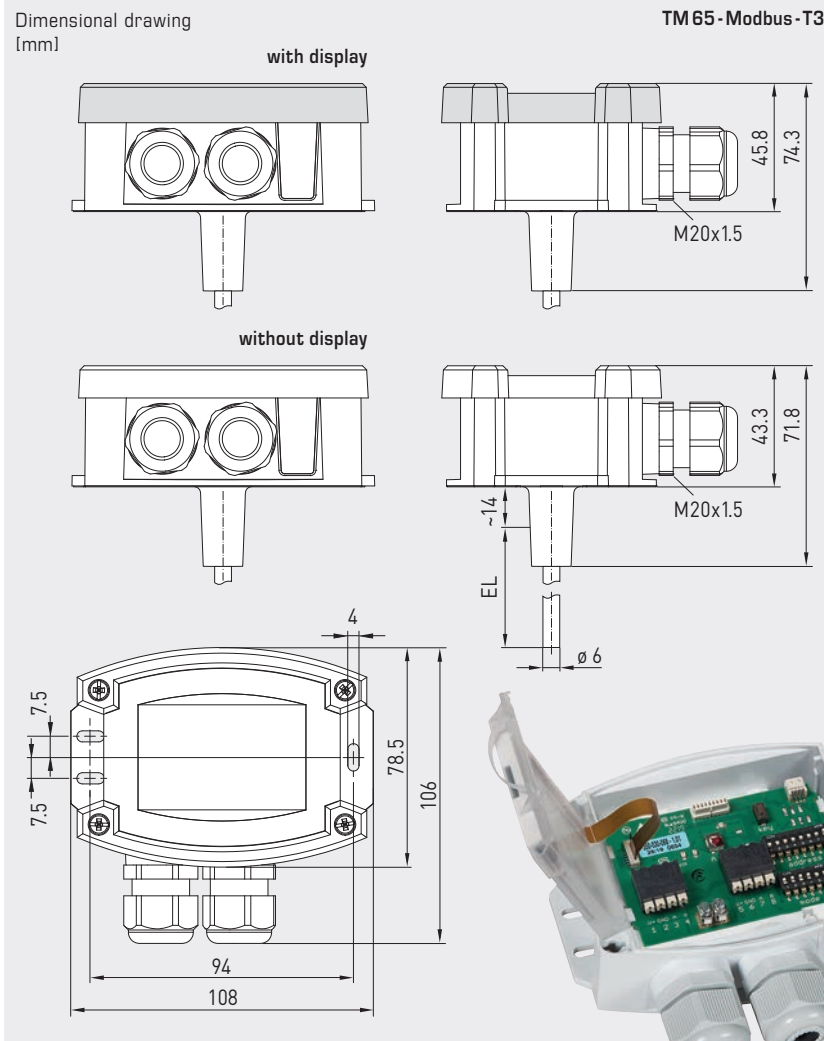
Device version with **M12 connector** (optional on request)



**TECHNICAL DATA**

Voltage supply:	24 V AC (± 20 %); 15...36 V DC
Power consumption:	< 1.2 W / 24 V DC; < 1.8 VA / 24 V AC
System of units:	<b>SI</b> (default) or <b>Imperial</b> (switchable via Modbus)
Data points:	Temperature [°C] [°F]
Sensor:	Pt1000, DIN EN 60751, class B <b>(Perfect Sensor Protection)</b>
Measuring range:	-50...+150 °C
Deviation, temperature:	typically ± 0.2 K at +25 °C
Zero point offset:	± 10 °C
Ambient temperature:	Measuring transducer -30...+70 °C
Medium:	depending on selected immersion sleeve
Bus protocol:	Modbus (RTU mode), address range 0... <b>247</b> selectable
Baud rate:	9600, 19200, 38400 Baud
Signal filtering:	0.3 s / 1 s / 10 s
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, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	108 x 78.5 x 43.3 mm (Tyr 3 without display) 108 x 78.5 x 45.8 mm (Tyr 3 with display)
Cable connection:	<b>cable gland</b> , plastic (2x M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm) or <b>M12 connector</b> according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Permissible air humidity:	< 95% RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	<b>IP 65</b> (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Features:	<b>Display with illumination</b> , three-line, programmable, cutout approx. 51 x 29 mm (W x H), for displaying the actual temperature, error message or an individually programmable display value
Internal diagnostics:	<b>Error 1</b> at sensor breakage <b>Error 2</b> at sensor short circuit





High-performance encapsulation against vibration, mechanical stress and humidity

**PS-PROTECTION**  
PERFECT SENSOR PROTECTION



THERMASGARD® TM 65 - Modbus - T3 Temperature sensor (basic device)

Type / WG01	Output	Inserted Length (EL)	Display	Item No.	Price
<b>TM65 - Modbus - T3</b>					
TM65-Modbus-T3 50mm	Modbus	50 mm		1101-7236-0010-000	167,04 €
TM65-Modbus-T3 50mm LCD	Modbus	50 mm	■	1101-7236-4010-000	221,24 €
TM65-Modbus-T3 100mm	Modbus	100 mm		1101-7236-0020-000	167,33 €
TM65-Modbus-T3 100mm LCD	Modbus	100 mm	■	1101-7236-4020-000	221,52 €
TM65-Modbus-T3 150mm	Modbus	150 mm		1101-7236-0030-000	167,55 €
TM65-Modbus-T3 150mm LCD	Modbus	150 mm	■	1101-7236-4030-000	221,78 €
TM65-Modbus-T3 200mm	Modbus	200 mm		1101-7236-0040-000	167,78 €
TM65-Modbus-T3 200mm LCD	Modbus	200 mm	■	1101-7236-4040-000	221,98 €
TM65-Modbus-T3 250mm	Modbus	250 mm		1101-7236-0050-000	168,09 €
TM65-Modbus-T3 250mm LCD	Modbus	250 mm	■	1101-7236-4050-000	222,32 €
TM65-Modbus-T3 300mm	Modbus	300 mm		1101-7236-0060-000	168,89 €
TM65-Modbus-T3 300mm LCD	Modbus	300 mm	■	1101-7236-4060-000	223,08 €
TM65-Modbus-T3 350mm	Modbus	350 mm		1101-7236-0070-000	169,93 €
TM65-Modbus-T3 350mm LCD	Modbus	350 mm	■	1101-7236-4070-000	185,23 €
TM65-Modbus-T3 400mm	Modbus	400 mm		1101-7236-0080-000	170,99 €
TM65-Modbus-T3 400mm LCD	Modbus	400 mm	■	1101-7236-4080-000	225,24 €
Optional:	Cable connection with <b>M12 connector</b> according to DIN EN 61076-2-101			on request	
<b>Note:</b>	System of units <b>SI</b> (default) or <b>imperial</b> (can be changed via Modbus).				
<b>ACCESSORIES</b>					
<b>KA2-Modbus</b>	<b>Communication adapter</b> (USB/RS485) for system connection			1906-1200-0000-100	213,99 €
<b>LA-Modbus</b>	<b>Line termination device</b> (with terminating resistor) as an active bus termination			1906-1300-0000-100	79,81 €

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One basic device in four variants ...



**PATENTED**

**TM 65 - Modbus - T3 + TH08 - ms / xx**

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

**TM 65 - Modbus - T3 + TH08 - VA / xx**

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

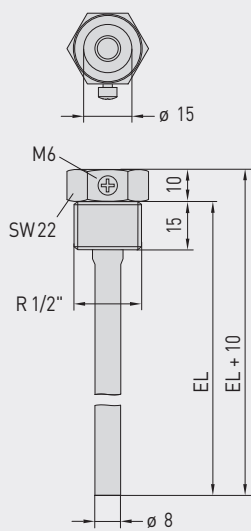
**TM 65 - Modbus - T3 + TH08 - VA / xx / 90**

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

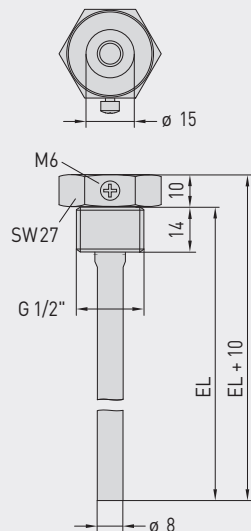
**TM 65 - Modbus - T3 + MF - 15 - K**

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

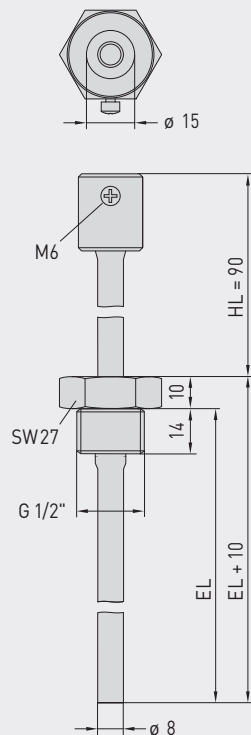
Dimensional drawing [mm]  
**TH08 - ms / xx**



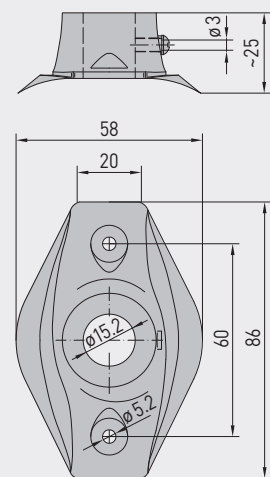
Dimensional drawing [mm]  
**TH08 - VA / xx**



Dimensional drawing [mm]  
**TH08 - VA / xx / 90**



Dimensional drawing [mm]  
**MF - 15 - K**





... 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 <sub>max</sub> (static)	T <sub>max</sub>	Inserted Length (EL)	Item No.	Price
<b>TH08-ms/xx</b>	<b>Brass nickel-plated</b>			without neck tube	
TH08-MS 50MM	10 bar	+150 °C	<b>50 mm</b>	7100-0011-0010-132	<b>9,31 €</b>
TH08-MS 100MM	10 bar	+150 °C	<b>100 mm</b>	7100-0011-0020-132	<b>10,61 €</b>
TH08-MS 150MM	10 bar	+150 °C	<b>150 mm</b>	7100-0011-0030-132	<b>11,20 €</b>
TH08-MS 200MM	10 bar	+150 °C	<b>200 mm</b>	7100-0011-0040-132	<b>11,56 €</b>
TH08-MS 250MM	10 bar	+150 °C	<b>250 mm</b>	7100-0011-0050-132	<b>13,39 €</b>
TH08-MS 300MM	10 bar	+150 °C	<b>300 mm</b>	7100-0011-0060-132	<b>13,76 €</b>
TH08-MS 350MM	10 bar	+150 °C	<b>350 mm</b>	7100-0011-0070-132	<b>13,87 €</b>
TH08-MS 400MM	10 bar	+150 °C	<b>400 mm</b>	7100-0011-0080-132	<b>14,00 €</b>
<b>TH08-VA/xx</b>	<b>Stainless steel V4A (1.4571)</b>			without neck tube	
TH08-VA 50MM	40 bar	+600 °C	<b>50 mm</b>	7100-0012-0010-132	<b>20,28 €</b>
TH08-VA 100MM	40 bar	+600 °C	<b>100 mm</b>	7100-0012-0020-132	<b>22,41 €</b>
TH08-VA 150MM	40 bar	+600 °C	<b>150 mm</b>	7100-0012-0030-132	<b>24,08 €</b>
TH08-VA 200MM	40 bar	+600 °C	<b>200 mm</b>	7100-0012-0040-132	<b>25,38 €</b>
TH08-VA 250MM	40 bar	+600 °C	<b>250 mm</b>	7100-0012-0050-132	<b>31,55 €</b>
TH08-VA 300MM	40 bar	+600 °C	<b>300 mm</b>	7100-0012-0060-132	<b>32,97 €</b>
TH08-VA 350MM	40 bar	+600 °C	<b>350 mm</b>	7100-0012-0070-132	<b>33,19 €</b>
TH08-VA 400MM	40 bar	+600 °C	<b>400 mm</b>	7100-0012-0080-132	<b>33,78 €</b>
<b>TH08-VA/xx/90</b>	<b>Stainless steel V4A (1.4571)</b>			with neck tube (90 mm)	
TH08-VA 50/90MM	40 bar	+600 °C	<b>50 mm</b>	7100-0012-0012-132	<b>29,04 €</b>
TH08-VA 100/90MM	40 bar	+600 °C	<b>100 mm</b>	7100-0012-0022-132	<b>30,35 €</b>
TH08-VA 150/90MM	40 bar	+600 °C	<b>150 mm</b>	7100-0012-0032-132	<b>31,84 €</b>
TH08-VA 200/90MM	40 bar	+600 °C	<b>200 mm</b>	7100-0012-0042-132	<b>33,19 €</b>
TH08-VA 250/90MM	40 bar	+600 °C	<b>250 mm</b>	7100-0012-0052-132	<b>34,79 €</b>
TH08-VA 300/90MM	40 bar	+600 °C	<b>300 mm</b>	7100-0012-0062-132	<b>37,71 €</b>
Note:	inner diameter of socket 15.0 mm For further information see last chapter!				
<b>Mounting flange (Accessories)</b>					
Type / WG01B				Item No.	Price
<b>MF</b>					
<b>MF-15-K</b>	<b>Mounting flange, plastic,</b> 56.8x84.3mm, Ø 15.2mm tube gland, T <sub>max</sub> +100°C			7100-0032-0000-000	<b>6,12 €</b>
Note:	For information see last chapter!				