

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, optionally with / without display, stainless steel-protective tube (50–400 mm).

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, 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.

TECHNICAL DATA

Voltage supply:	24 V AC (± 20 %) and 15...36 V DC
Power consumption:	< 1.2 W / 24 V DC; < 1.8 VA / 24 V AC
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection)
Measuring range:	–50...+150 °C
Temperature deviation:	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... 247 selectable
Signal filtering:	0.3 s / 1 s / 10 s
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, inserted length (EL) = 50–400 mm (see table)
Housing:	plastic, UV-stabilised, 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:	cable gland , plastic (2x M20 x 1.5; with strain relief, exchangeable, inner diameter 8–13 mm) or M12 connector 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 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Equipment:	Display with illumination , three-line, programmable, cutout approx. 51 x 29 mm (W x H), for displaying the actual temperature or an individually programmable display value
Internal diagnostics:	Error 1 at sensor breakage Error 2 at sensor short circuit
ACCESSORIES	see table

TM 65 - Modbus - T3

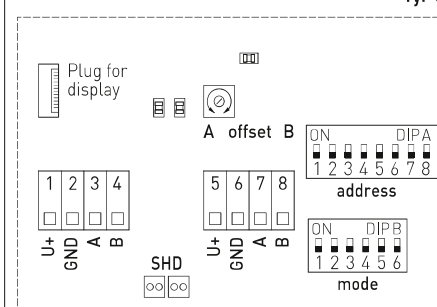


Device version
with **M12 connector**
(optional on request)



Schematic diagram

**Modbus
Tyr 3**



DIP A: Bus address
DIP B: Bus parameters (Baud rate, parity...)
Telegram indicator: Reception (LED green) Error (LED red)
LED (internal status)
Offset correction
Shielding

Programmable
display screen

**Modbus
Tyr 3**



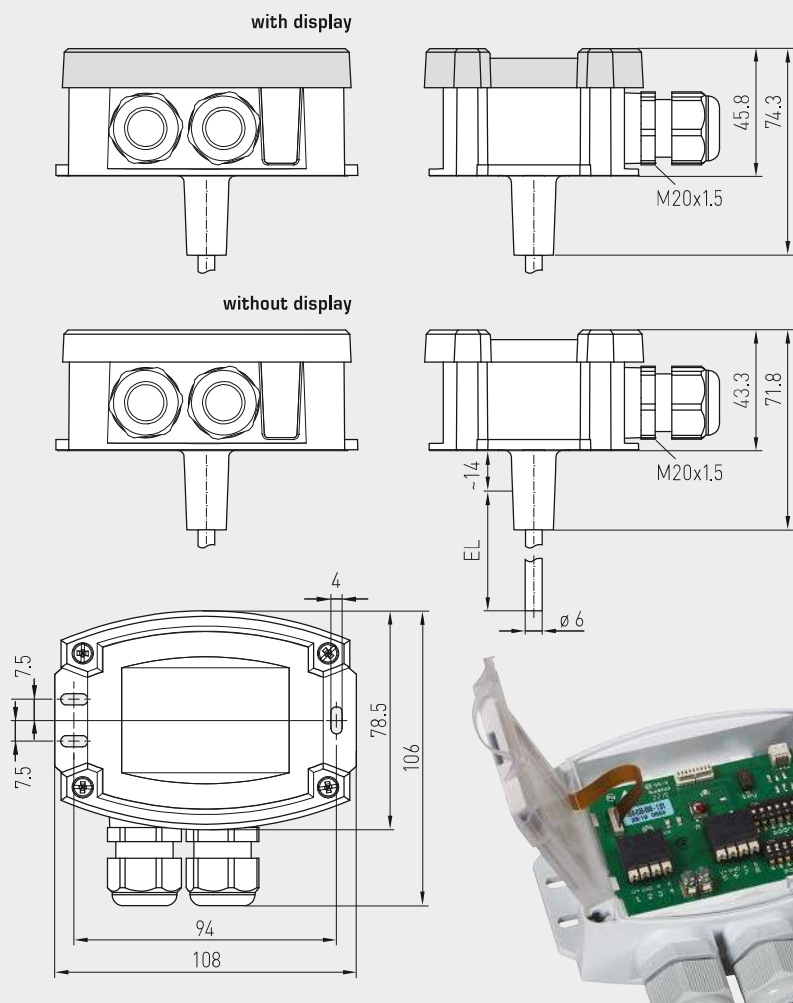
**NEW**

S+S REGELTECHNIK

THERMASGARD® TM 65 - Modbus-T3Immersion / screw-in / duct temperature measuring transducer,
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Dimensional drawing

TM 65-Modbus-T3

TM 65-Modbus-T3
with displayHigh-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.
TM65-Modbus-T3				
TM65-MODBUS-T3 50MM	Modbus	50 mm		1101-7236-0010-000
TM65-MODBUS-T3 50MM LCD	Modbus	50 mm	■	1101-7236-4010-000
TM65-MODBUS-T3 100MM	Modbus	100 mm		1101-7236-0020-000
TM65-MODBUS-T3 100MM LCD	Modbus	100 mm	■	1101-7236-4020-000
TM65-MODBUS-T3 150MM	Modbus	150 mm		1101-7236-0030-000
TM65-MODBUS-T3 150MM LCD	Modbus	150 mm	■	1101-7236-4030-000
TM65-MODBUS-T3 200MM	Modbus	200 mm		1101-7236-0040-000
TM65-MODBUS-T3 200MM LCD	Modbus	200 mm	■	1101-7236-4040-000
TM65-MODBUS-T3 250MM	Modbus	250 mm		1101-7236-0050-000
TM65-MODBUS-T3 250MM LCD	Modbus	250 mm	■	1101-7236-4050-000
TM65-MODBUS-T3 300MM	Modbus	300 mm		1101-7236-0060-000
TM65-MODBUS-T3 300MM LCD	Modbus	300 mm	■	1101-7236-4060-000
TM65-MODBUS-T3 350MM	Modbus	350 mm		1101-7236-0070-000
TM65-MODBUS-T3 350MM LCD	Modbus	350 mm	■	1101-7236-4070-000
TM65-MODBUS-T3 400MM	Modbus	400 mm		1101-7236-0080-000
TM65-MODBUS-T3 400MM LCD	Modbus	400 mm	■	1101-7236-4080-000
Optional: Cable connection with M12 connector according to DIN EN 61076-2-101				on request
ACCESSORIES				
KA2-Modbus	Communication adapter (USB/RS485) for system connection			1906-1200-0000-100
LA-Modbus	Line termination device (with terminating resistor) as an active bus termination			1906-1300-0000-100

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One basic device in four variants ...



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

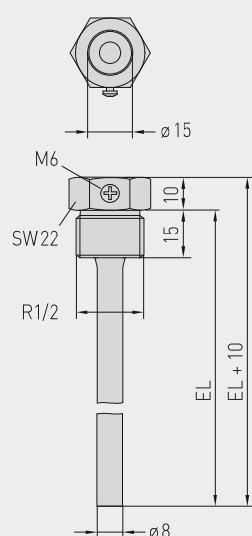
TM 65 - Modbus - T3 + TH08 - VA / xx / 90

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

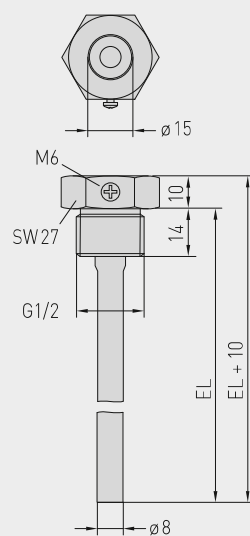
TM 65 - Modbus - T3 + MF - 15 - K

Duct temperature sensor with mounting flange, plastic

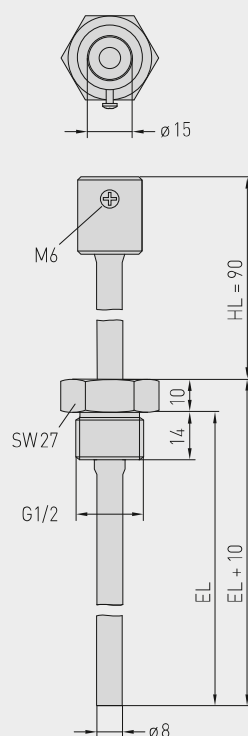
Dimensional drawing TH08 - ms / xx



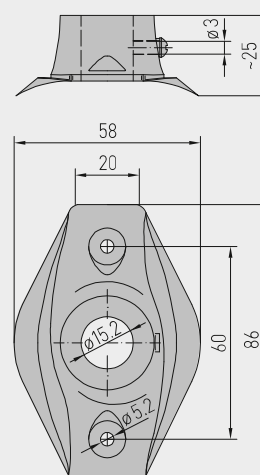
Dimensional drawing TH08 - VA / xx



Dimensional drawing TH08 - VA / xx / 90



Dimensional drawing MF - 15 - K



**NEW**

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...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 _{max} (static)	T _{max}	Inserted Length (EL)	Item No.
TH08-ms/xx	Brass nickel-plated			without neck tube
TH08-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-132
TH08-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-132
TH08-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-132
TH08-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-132
TH08-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-132
TH08-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-132
TH08-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-132
TH08-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-132
TH08-VA/xx	Stainless steel V4A (1.4571)			without neck tube
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132
TH08-VA/xx/90	Stainless steel V4A (1.4571)			with neck tube (90 mm)
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132

Note: inner diameter of socket 15.0 mm
For further information see last chapter!**Mounting flange (Accessories)**

Type / WG01B	Item No.
MF	
MF-15-K	Mounting flange, plastic, 56.8 x 84.3 mm, Ø 15.2 mm tube gland, T _{max} +100 °C
	7100-0032-0000-000

Note: For information see last chapter!