

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

TM65

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

Calibratable temperature measuring transducer with straight protective tube
THERMASGARD® TM 65 - Modbus with Modbus connection, enclosure made from impact-resistant plastic with quick-locking screws, with / without optional display (for displaying actual temperature).

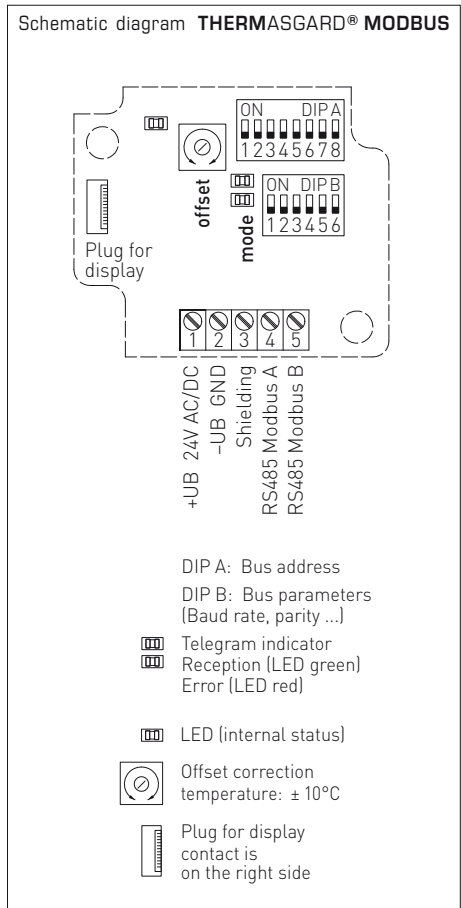
For the detection of temperatures in liquid or gaseous media. For aggressive media, stainless steel immersion sleeves must be used. Applications of the TM65 are in piping systems, in heating technology, in ventilation and air conditioning ducts, in storage tanks, district heating compact stations, hot-water and cold-water systems, oil and lubricant circulation systems, in mechanical, apparatus, and plant engineering as well as throughout the industrial sector. The temperature measuring transducers are factory-calibrated. Adjustment / fine adjustment by the user is possible (zero point offset is adjustable).



TECHNICAL DATA

Voltage supply:	24V AC (±20%) and 15...36V DC
Power consumption:	< 1.0VA / 24V DC; < 2.2VA / 24V AC
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection)
Measuring range:	-50...+150 °C
Temperature deviation:	± 0.2K at +25 °C
Zero point offset:	± 10 °C
Ambient temperature:	Measuring transducer -30...+70 °C
Medium:	depending on selected immersion sleeve
Error detection:	sensor breakage, sensor short circuit
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)
Enclosure:	plastic, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover for display is transparent!
Enclosure dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Cable gland:	2x M12 x 1.5 (Y-adapter); with strain relief, exchangeable, max. inner diameter 6 mm
Permissible air humidity:	<95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	IP65 (according to EN 60529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	two-line display with illumination , programmable, cutout approx. 36 x 15 mm (W x H), for displaying the actual temperature or an individually programmable display value (The Modbus interface allows the display to be individually configured in the 7-segment area and in the dot-matrix area.)
ACCESSORIES	see table
MODBUS-Y	Y-adapter for cable gland M16x1.5 (on 2x M12x1.5), plastic (included in the scope of delivery)
MF-15-K	Mounting flange plastic, 56.8 x 84.3 mm, Ø = 15.2 mm tube gland, T _{max} = +100 °C
TH08-ms / xx	Immersion sleeve , brass, nickel-plated , Ø = 8 mm, T _{max} = +150 °C, p _{max} = 10 bar
TH08-VA / xx	Immersion sleeve , stainless steel, V4A (1.4571), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar
TH08-VA / xx / 90	Immersion sleeve , stainless steel, V4A (1.4571), with neck tube (90 mm) Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar

High-performance encapsulation against vibration, mechanical stress and humidity

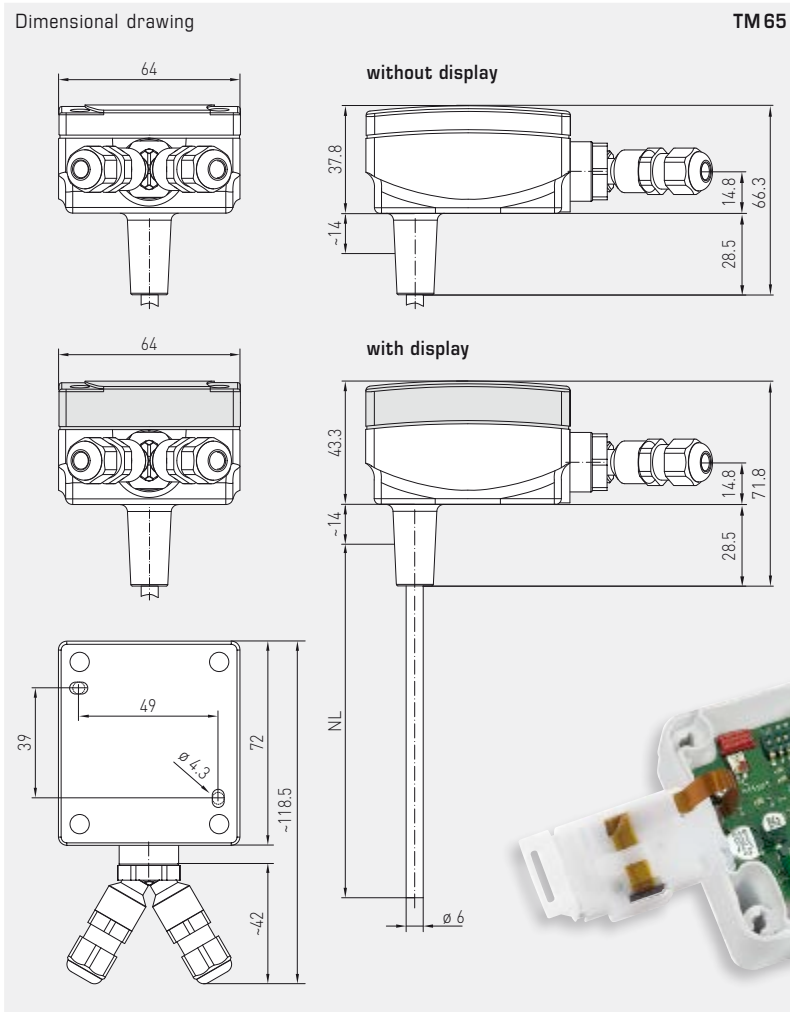




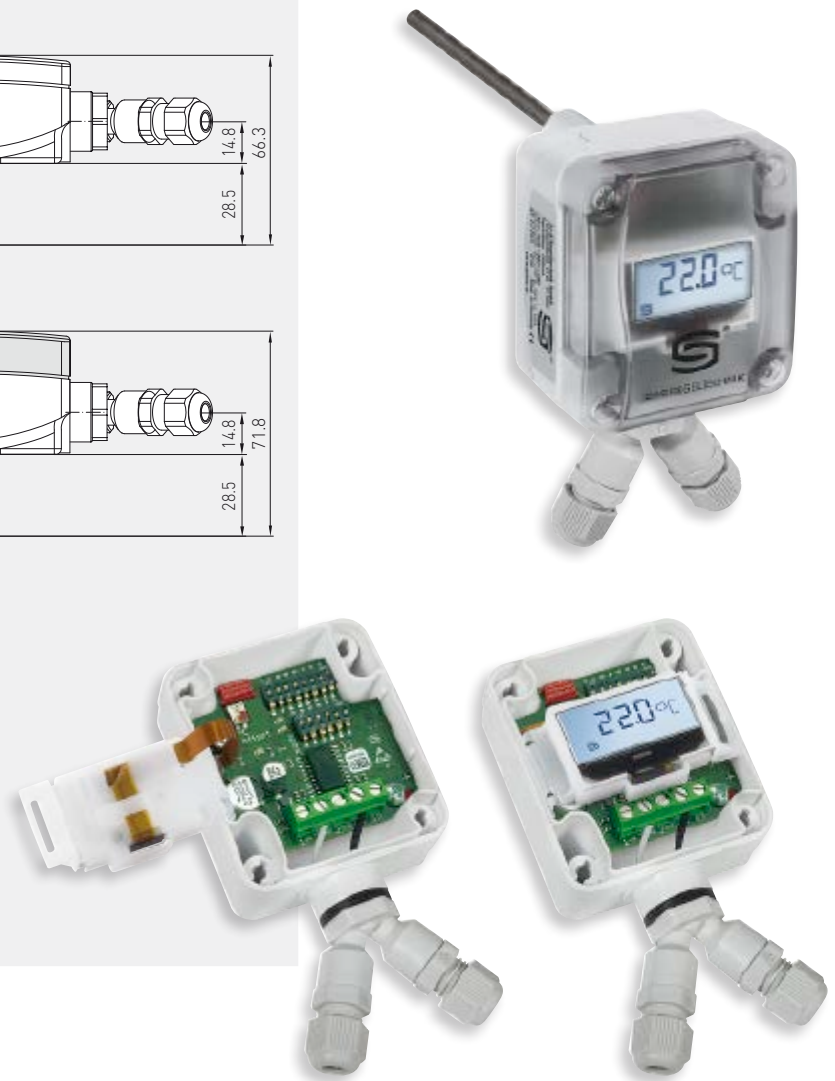
S+S REGELTECHNIK

THERMASGARD® TM 65 - Modbus

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



TM 65 - Modbus
with display



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

Type / WG01	Output	Inserted Length [EL]	Display	Item No.	Price
TM65 - Modbus				IP65	
TM65 MODBUS 50MM	Modbus	50 mm		1101-7226-0010-000	
TM65 MODBUS 50MM DISPLAY	Modbus	50 mm	■	1101-7226-2010-000	
TM65 MODBUS 100MM	Modbus	100 mm		1101-7226-0020-000	
TM65 MODBUS 100MM DISPLAY	Modbus	100 mm	■	1101-7226-2020-000	
TM65 MODBUS 150MM	Modbus	150 mm		1101-7226-0030-000	
TM65 MODBUS 150MM DISPLAY	Modbus	150 mm	■	1101-7226-2030-000	
TM65 MODBUS 200MM	Modbus	200 mm		1101-7226-0040-000	
TM65 MODBUS 200MM DISPLAY	Modbus	200 mm	■	1101-7226-2040-000	
TM65 MODBUS 250MM	Modbus	250 mm		1101-7226-0050-000	
TM65 MODBUS 250MM DISPLAY	Modbus	250 mm	■	1101-7226-2050-000	
TM65 MODBUS 300MM	Modbus	300 mm		1101-7226-0060-000	
TM65 MODBUS 300MM DISPLAY	Modbus	300 mm	■	1101-7226-2060-000	
TM65 MODBUS 350MM	Modbus	350 mm		1101-7226-0070-000	
TM65 MODBUS 350MM DISPLAY	Modbus	350 mm	■	1101-7226-2070-000	
TM65 MODBUS 400MM	Modbus	400 mm		1101-7226-0080-000	
TM65 MODBUS 400MM DISPLAY	Modbus	400 mm	■	1101-7226-2080-000	

Accessories

KA-2	Modbus communication adapter with USB/RS485 interface for system connection or/and as an active bus termination resistance	on request
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One basic device in four variants...



PATENTED

TM 65 - Modbus + TH 08 - ms / xx

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

TM 65 - Modbus + TH 08 - VA / xx

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

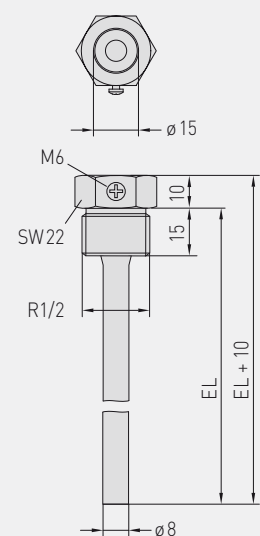
TM 65 - Modbus + TH 08 - VA / xx / 90

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

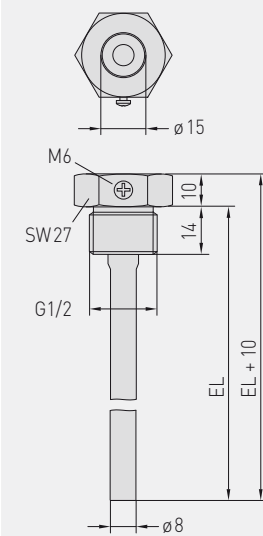
TM 65 - Modbus + MF - 15 - K

Duct temperature sensor with mounting flange, plastic

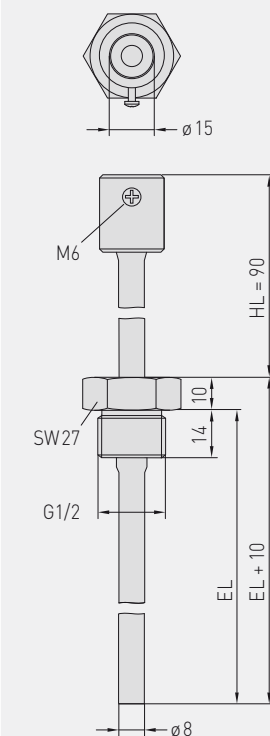
Dimensional drawing TH 08 - ms / xx



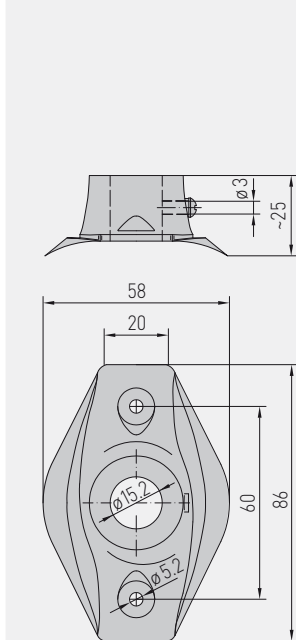
Dimensional drawing TH 08 - VA / xx



Dimensional drawing TH 08 - VA / xx / 90



Dimensional drawing 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 / WG01	p _{max} (static)	T _{max}	Inserted Length (EL)	Item No.	Price
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 / WG01	T _{max}	Item No.	Price
MF			
MF-15-K	Mounting flange, plastic, 56.8x84.3 mm, Ø 15.2 mm tube gland	+100 °C	7100-0032-0000-000

Note: For further information see last chapter!