THERMASGARD® MWTM - Modbus-SD

Mean value temperature measuring transducers, incl. mounting flange, calibratable, with Y-adapter, with Modbus connection (not galvanically isolated)

S+S REGELTECHNIK

Calibratable mean value temperature measuring transducer **THERM**ASGARD® **MWTM-Modbus-SD**, with Modbus connection (Y-adapter), in an impact-resistant plastic housing with quick-locking screws, with bendable sensor rod (3.0 m / 6.0 m, fully active), protective tube made from reinforced thermoplastic hose and anti-kink spring, incl. mounting flange, optionally with /without display, measures temperature (–50...+150 °C / –58...+302 °F). International system of units **SI** (default) can be changed to **imperial** (via Modbus).

The rod sensor is used to detect the mean temperature (mean value) in gaseous media. It is used in ventilation and air conditioning ducts over the entire cross-section or on a defined length (laid along a meandering route, it uniformly detects the surrounding temperature). For proper mounting of the rod, mounting clamps **MK-05-M** (accessories) are available.

Modbus sensor SD with RS485 Modbus interface (not galvanically isolated), selectable bus termination resistance, DIP switch for setting the bus parameters and bus address in current-free state, internal LEDs for telegram status display (illuminated, with customised programming). Uses **internal diagnostics** to detect sensor breakage or sensor short circuit as errors. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

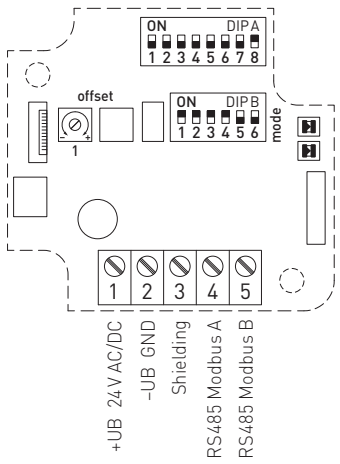




TECHNICAL DATA

Voltage supply:	24 V AC (± 20 %) and 15...36 V DC (± 10 %)
Power consumption:	< 1.0 W / 24 V DC; < 2.2 VA / 24 V AC
System of units:	**SI** (default) or **Imperial** (switchable via Modbus)
Data points:	Temperature [°C] [°F]
Sensor:	Pt1000, DIN EN 60751, class B
Measuring range:	–50...+150 °C / –58...+302 °F; **T_{min} –50 °C / –58 °F, T_{max} +80 °C / +176 °F**
Accuracy temperature:	typical ± 0.2 K at +25 °C
Zero point offset:	± 10 K
Ambient temperature:	Measuring transducer –30...+70 °C
Medium:	clean air and **non-aggressive**, non-combustible gases
Error detection:	Sensor breakage, sensor short circuit
Bus interface:	RS 485, **not galvanically isolated**, bus termination activatable via DIP switches. Up to 32 devices possible in one segment. In case of a greater number of devices, RS485 repeaters must be used.
Bus protocol:	Modbus (RTU mode) address range 0...**247** selectable
Baud rate:	9600, 19200, 38400 Baud
Status display:	LED green = Telegram valid LED red = Telegram error
Signal filtering:	0.3 s / 1 s / 10 s
Sensor:	active across the entire length (averaging)
Rod material:	Protective tube made from reinforced thermoplastic hose, with anti-kink spring and sleeve, stainless steel V4A (1.4571)
Rod dimensions:	Ø = 5.0 mm, nominal length (NL) = 0.4 m / 3 m / 6 m (nominal length optional up to max. 20 m)
Rod laying:	**Observe the admissible values!** Bending radius: **> 35 mm** Vibration load: **≤ 0.5 g** Tensile load: **< 100 N**
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 dimension:	72 x 64 x 37.8 mm (Typ 1 without display) 72 x 64 x 43.3 mm (Typ 1 with display)
Cable connection:	**Cable gland**, plastic 2x M 12 x 1.5 (Y-adapter); with strain relief, exchangeable, max. inner diameter 6 mm
electrical connection:	0.14 - 1.5 mm² , via terminal screws
Process connection:	by mounting flange, plastic **MF-06-K** (included in the scope of delivery, galvanised steel optional) and mounting clamps **MK-05-M** (included in the scope of delivery)
Permissible humidity:	< 95 % RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) housing tested, TÜV SÜD, Report No.713139052 (Typ 1)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	**Display with illumination,** two-line, programmable, cutout approx. 36 x 15 mm (W x H), for displaying the actual temperature, error message or an individually programmable display value
ACCESSORIES	see table

Schematic diagram **THERM**ASGARD **xx-Modbus-SD**



DIP A: Bus address

DIP B: Bus parameters (Baud rate, parity ...)

LED (internal status)
Telegram indicator
Reception (LED green)
Error (LED red)

Plug for display (contact on right side)

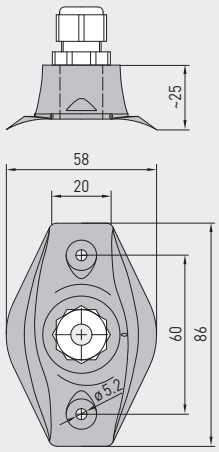
Offset correction ca. ±10 K (temperature)

S+S REGELTECHNIK

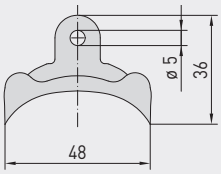
THERMASGARD® MWTM - Modbus-SD

Mean value temperature measuring transducers, incl. mounting flange, calibratable, with Y-adapter, with Modbus connection (not galvanically isolated)

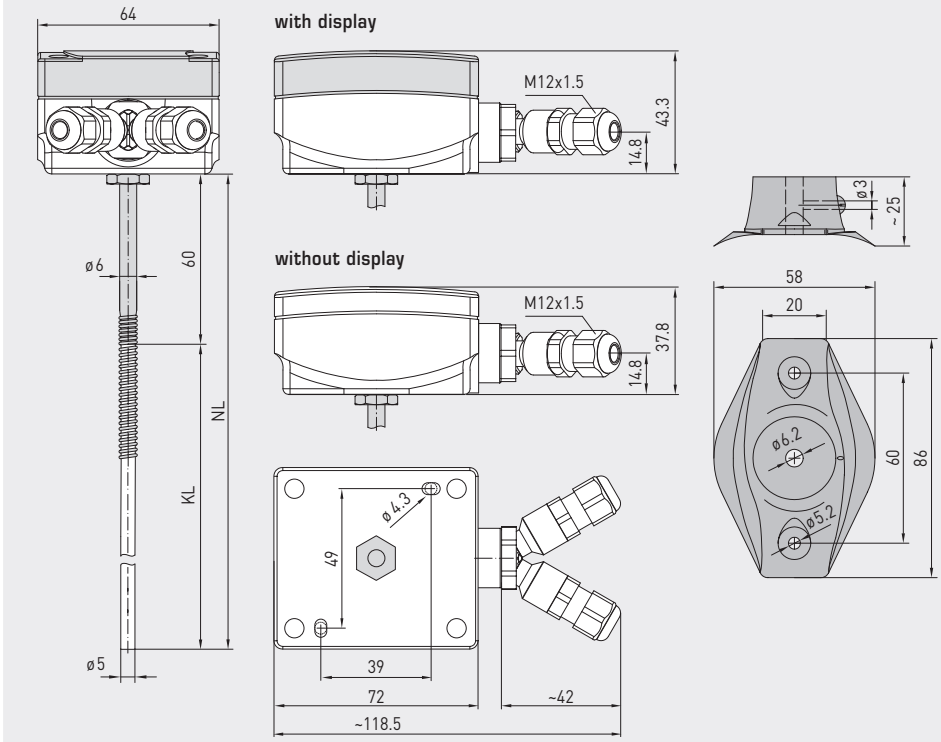
Dimensional drawing [mm] **KRD-04**



Dimensional drawing [mm] **MK-05-M**



Dimensional drawing [mm] **MWTM-Modbus-SD MF-06-K**



MK-05-M
Galvanised steel mounting clamps



KRD-04
Capillary tube gland bracket, plastic



MF-06-K
Mounting flange, plastic



THERMASGARD® MWTM - Modbus-SD	Mean value temperature measuring transducers with Modbus connection (not galvanically isolated)				
Type / WG01	**Output**	**Rod Length (NL)**	**Display**	**Item No.**	**Price**
MWTM-Modbus-SD					
MWTM-Modbus-SD 3,0m	Modbus	**3.0 m**		1101-328H-0230-000	**272,50 €**
MWTM-Modbus-SD 3,0m LCD	Modbus	**3.0 m**	■	1101-328H-2230-000	**327,46 €**
MWTM-Modbus-SD 6,0m	Modbus	**6.0 m**		1101-328H-0260-000	**337,43 €**
MWTM-Modbus-SD 6,0m LCD	Modbus	**6.0 m**	■	1101-328H-2260-000	**393,10 €**
Extra charge:	per meter sensor cable (from 6 m to max. 20 m)			on request	
Note:	System of units **SI** (default) or **imperial** (can be changed via Modbus).				

ACCESSORIES			
KA2-Modbus	**Communication adapter** (USB/RS485) for system connection	1906-1200-0000-100	**236,11 €**
LA-Modbus	**Line termination device** (with terminating resistor) as an active bus termination	1906-1300-0000-100	**88,05 €**
MF-06-K	**Mounting flange,** plastic (included in the scope of delivery)	7100-0030-1000-000	**6,75 €**
MF-06-M	**Mounting flange,** metal (Galvanised steel), Ø 32 mm	7100-0030-5000-100	**13,87 €**
KRD-04	**Capillary tube gland bracket,** plastic	7100-0030-7000-000	**9,84 €**
MK-05-M	**Mounting clamps**, galvanised steel (6 pieces)	7100-0034-0000-000	**10,91 €**
	For further information see chapter Accessories!		