

Mean value / rod / duct temperature measuring transducer, including mounting flange, calibratable, with multi-range switching and active output (Automatic Output Switching)

Patented quality product (patent no. DE 10 2015 015 941 B4)

Calibratable mean-value temperature measuring transducer **THERMASGARD® MWTM** (rod sensor 0.4...20 m), with eight switchable measuring ranges (max. -20...+150 °C), active output, housing made from impact-resistant plastic with quick-locking screws, with bendable sensor rod (fully active), protective tube made from copper, plastic-coated, and anti-kink spring, incl. mounting flange, 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 0-10 V or 4...20 mA. 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.

Calibratable mean-value temperature measuring transducer **THERMASGARD® MWTM-SD** (rod sensor 3 m / 6 m) with eight switchable measuring ranges (max. -20...+150 °C), active output, housing made from impact-resistant plastic with snap-on lid, with bendable sensor rod (fully active), protective tube made from reinforced thermoplastic hose and anti-kink spring, incl. mounting flange. The measuring transducer converts the measured variables into a standard signal of 0-10 V or 4...20 mA. Available as a U variant (3-wire) or I variant (2-wire).

The sensor is used to detect the mean temperature (mean value) in gaseous media, e.g. in ventilation and air conditioning ducts over the entire cross section or over a defined length. Laid along a meandering route, it uniformly detects the surrounding temperature, as a duct temperature sensor. For proper mounting of the rod, mounting clamps **MK-05-M** (accessories) are available. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

MWTM
Rod length 0.4 m / 3 m / 6 m
(IP 65)



TECHNICAL DATA

MWTM - U

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

MWTM - I

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

MWTM - A (AOS)

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

GENERAL

Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
System of units:	SI (default) or imperial (MWTM can be changed via DIP switch)
Data points:	temperature [°C] [°F]
Measuring ranges:	multi-range switching with 8 measuring ranges , see table (other ranges optional) $T_{\min} -30 \text{ }^\circ\text{C}$, $T_{\max} +80 \text{ }^\circ\text{C}$ with manual zero point correction (± 10 K)
Sensor:	Pt1000, DIN EN 60751, class B
Accuracy, temperature:	typically ± 0.2 K at +25 °C
Sensors:	active across the entire length (averaging)
Rod material:	protective tube made from copper, plastic-coated (MWTM) (made from reinforced thermoplastic hose for the MWTM-SD), with anti-kink spring and sleeve, stainless steel V4A (1.4571)
Rod dimensions:	$\varnothing = 5.0 \text{ mm}$, nominal length (NL) = 0.4 m / 3 m / 6 m (nominal length optionally up to max. 20 m), see table
Rod laying:	Observe the admissible values! Bending radius: > 35 mm Vibration load: ≤ 0.5 g Tensile load: < 480 N (MWTM) / < 100 N (MWTM-SD)
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, colour traffic white (similar to RAL 9016) MWTM-SD with snap-on lid MWTM with quick-locking screws (slotted / Phillips head combination), housing cover for display is transparent!
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:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws



MWTM-SD
Rod length 3 m / 6 m
(IP 54)



Continued on next page!



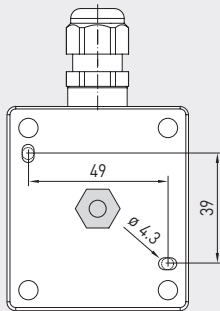
NEW

S+S REGELTECHNIK

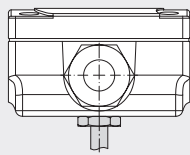
THERMASGARD® MWTM
THERMASGARD® MWTM-SD

Mean value / rod / duct temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output (Automatic Output Switching)

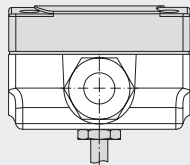
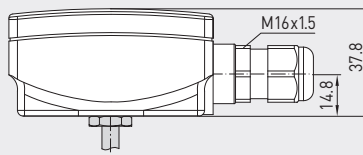
Dimensional drawing
(mm)



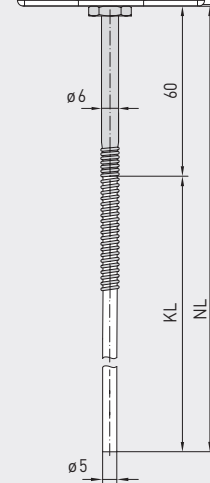
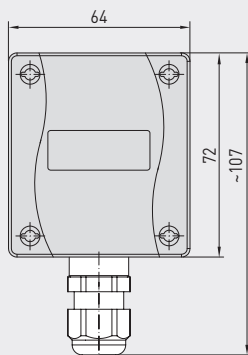
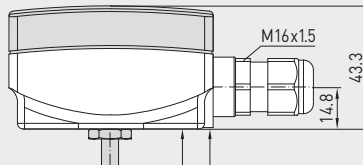
M12 connector
(optional on request)



without display



with display



MWTM

MWTM
Rod length 0.4 m / 3 m / 6 m
with Display
(IP 65)



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



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

TECHNICAL DATA

(continued)

Process connection:	by mounting flange, plastic MF-06-K (included in the scope of delivery, galvanised steel optional) and mounting clamps MK-05-M (from 3 m rod length, included in the scope of delivery)
Ambient temperature:	measuring transducer -30...+70 °C
Permitted humidity:	< 95 % RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	MWTM-SD IP 54 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) MWTM IP 65 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)
Standards:	CE conformity according to EMC directive 2014 / 30 / EU
Optional:	two-line display with illumination , cutout approx. 36 x 15 mm (W x H), for displaying the ACTUAL temperature and the internal diagnostics (sensor breakage, sensor short circuit)
ACCESSORIES	(see table)

Display and internal diagnostics
THERMASGARD®
Measuring transducer with display



Temperature
[°C]



Temperature
[°F]

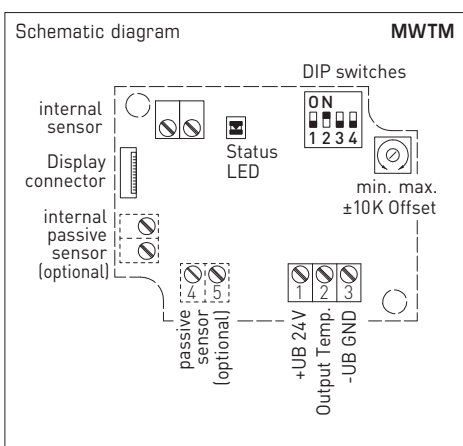
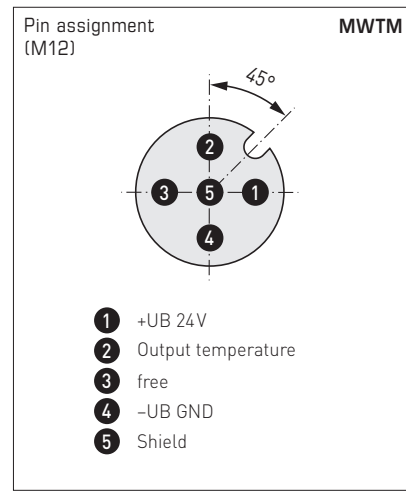
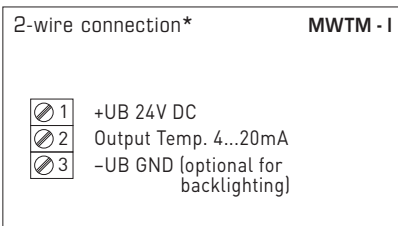
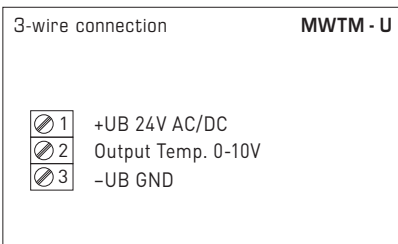
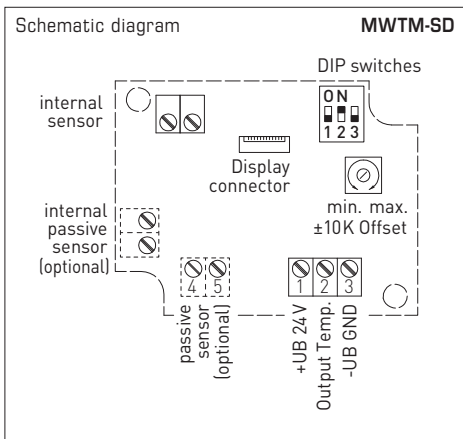


Sensor
breakage

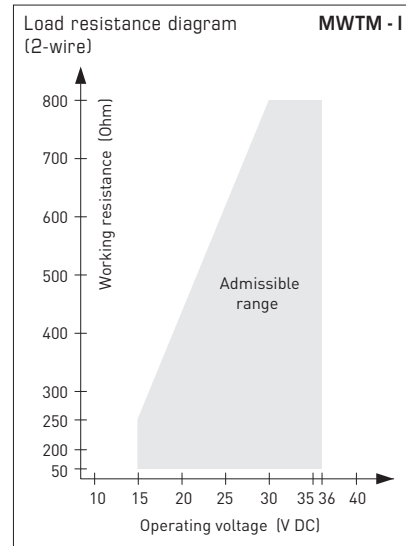
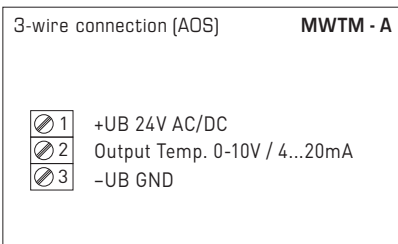


Sensor
short circuit

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

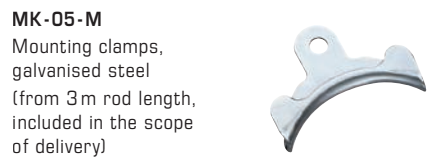
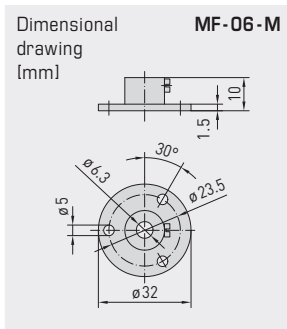
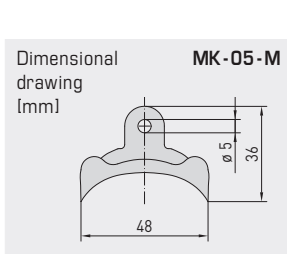
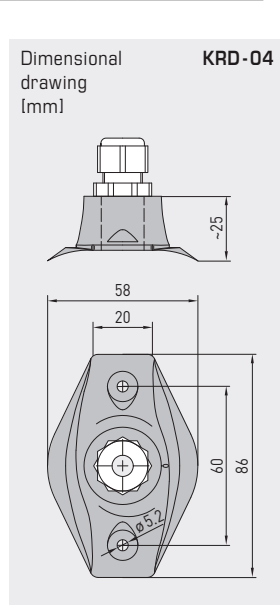
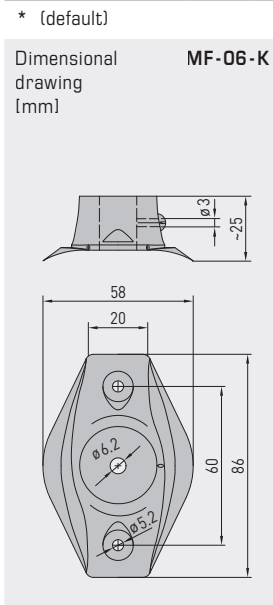


Measuring ranges [°C]	DIP 1	DIP 2	DIP 3	Measuring ranges [°F]
-20...+150 °C	ON	ON	ON	-4...+302 °F
-50... +50 °C	OFF	ON	ON	-58...+122 °F
-20... +80 °C	ON	OFF	ON	-4...+176 °F
-30... +60 °C	OFF	OFF	ON	-22...+140 °F
0... +40 °C	ON	ON	OFF	32...+104 °F
0... +50 °C *	OFF	ON	OFF	32...+122 °F *
0...+100 °C	ON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

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

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

For further technical information, see the operating instructions





NEW

S+S REGELTECHNIK

THERMASGARD® MWTM
THERMASGARD® MWTM-SD

Mean value / rod / duct temperature measuring transducer,
including mounting flange, calibratable, with multi-range switching
and active output (Automatic Output Switching)



THERMASGARD® MWTM-SD Mean-value temperature measuring transducer with rod made from reinforced thermoplastic hose (black), *Standard*

Type / WG01B	Output	Rod length	(without display)	Item No.	Price
MWTM-SD-I	(2-wire)			IP 54	
MWTM-SD-I 3m	4...20 mA	3.0 m		1101-3132-0239-90K	177,04 €
MWTM-SD-I 6m	4...20 mA	6.0 m		1101-3132-0269-90K	188,00 €
MWTM-SD-U	(3-wire)			IP 54	
MWTM-SD-U 3m	0-10 V	3.0 m		1101-3131-0239-90K	177,04 €
MWTM-SD-U 6m	0-10 V	6.0 m		1101-3131-0269-90K	188,00 €

THERMASGARD® MWTM Mean-value temperature measuring transducer with rod made from copper, plastic-coated (blue), *Premium*

Type / WG01	Output	Rod length	Display	Item No.	Price
MWTM-I	(2-wire)			IP 65	
MWTM-I 0,4m	4...20 mA	0.4 m		1101-3132-0089-900	189,06 €
MWTM-I 0,4m LCD	4...20 mA	0.4 m	■	1101-3132-1089-900	244,01 €
MWTM-I 3m	4...20 mA	3.0 m		1101-3132-0239-900	245,81 €
MWTM-I 3m LCD	4...20 mA	3.0 m	■	1101-3132-1239-900	300,77 €
MWTM-I 6m	4...20 mA	6.0 m		1101-3132-0269-900	300,54 €
MWTM-I 6m LCD	4...20 mA	6.0 m	■	1101-3132-2269-900	353,23 €
MWTM-A	(3-wire AOS)			IP 65	
MWTM-A 0,4m	0-10 V / 4...20 mA	0.4 m		1101-313E-0089-900	189,06 €
MWTM-A 0,4m LCD	0-10 V / 4...20 mA	0.4 m	■	1101-313E-1089-900	244,01 €
MWTM-A 3m	0-10 V / 4...20 mA	3.0 m		1101-313E-0239-900	245,81 €
MWTM-A 3m LCD	0-10 V / 4...20 mA	3.0 m	■	1101-313E-2239-900	300,77 €
MWTM-A 6m	0-10 V / 4...20 mA	6.0 m		1101-313E-0269-900	300,54 €
MWTM-A 6m LCD	0-10 V / 4...20 mA	6.0 m	■	1101-313E-1269-900	353,23 €

Automatic Output Switching (AOS):	Patented analogue interface (patent no. DE 10 2015 015 941 B4) Unit automatically detects the required output type 0-10 V or 4...20 mA.			
Extra charge:	other ranges optional			28,03 €
	per meter sensor cable (from 6 m to max. 20 m)		on request	
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101		on request	

ACCESSORIES

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 35 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) (from 3 m rod length, included in the scope of delivery)	7100-0034-0000-000	10,91 €

For further information see chapter Accessories!