

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output (Automatic Output Switching)

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

Calibratable tube contact temperature measuring transducer **THERMASGARD® ALTM 2**, with eight switchable measuring ranges (max. -20...+150 °C), active output, external sensor, incl. strap, housing made from impact-resistant plastic with quick-release screws, with cable gland or M12 connector according to DIN EN 61076-2-101, optionally with/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 variant) detects the required output type and automatically switches to U or I output. Alternatively, a **type version** (2-wire I variant) with 2-wire connection and I output is available.

The surface-contact sensor is used for temperature detection on lines, pipes (e.g. cold and hot water) or on heating sections for heating system control. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

ALTM2 - 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

ALTM2 - A (AOS)

Power supply:	24 V AC / DC (± 10%)
Load resistance:	$R_L = 25...450 \text{ Ohm}$ with AOS I variant $R_L > 15 \text{ kOhm}$ with AOS U variant
Connection type:	3-wire connection
Output:	automatic 0-10V / 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 (switchable via DIP switch)
Data points:	Temperature [°C] [°F]
Measuring ranges:	multi-range switching with 8 measuring ranges , see table (other ranges optional) T_{max} up to +100 °C , operating range -50...+150 °C with manual zero point correction (± 10 K)
Sensor:	Pt1000, DIN EN 60751, class B (Perfect Sensor Protection) at IP68
Accuracy, temperature:	typically ± 0.2 K at +25 °C
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor protection:	pipe feeder made of stainless steel V4A (1.4571), Ø = 6 mm, L = 50 mm
Sensor cable:	silicone, SiHF, 2x 0.25 mm ² ; cable length (KL) = 1.5 m (other lengths and jacket materials, e.g. PTFE or glass fibre with steel mesh, available on request)
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), 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 (male, 5-pin, A-code) according to DIN EN 61076-2-101
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Process connection:	endless strap with metal tightener (included in the scope of delivery) Ø = 13 - 92 mm (¼ - 3"), L = 300 mm
Ambient temperature:	measuring transducer -30...+70 °C
Permissible humidity:	< 95% RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type housing:	IP65 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)
Protection type sensor:	IP65 (according to EN 60 529) sleeve humidity-tight (standard) IP68 (according to EN 60 529) sleeve water-tight (optional)
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)

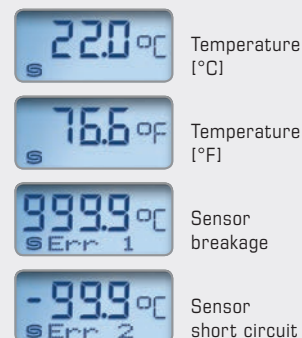
ALTM 2 with cable gland



ALTM 2 - Q with M12 connector



Display and internal diagnostics
THERMASGARD®
Measuring transducer with display



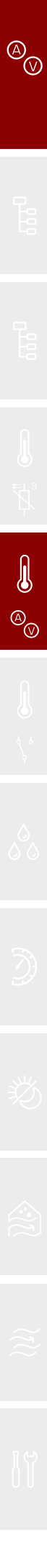


NEW

S+S REGELTECHNIK

THERMASGARD® ALTM 2

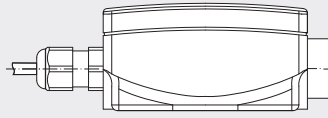
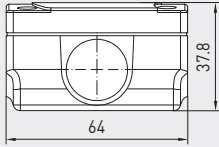
Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output (Automatic Output Switching)



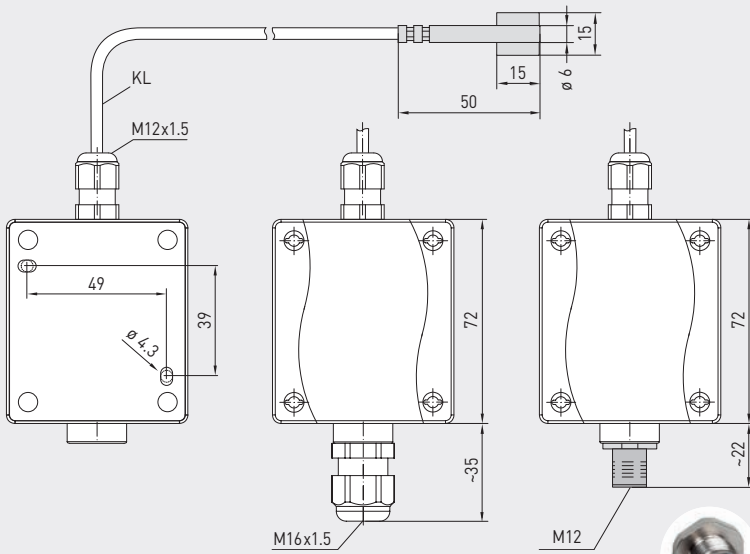
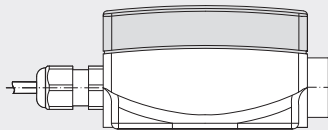
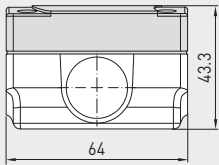
Dimensional drawing [mm]

ALTM 2

without display



with display



Housing with cable gland

Housing with M12 connector

ALTM 2 with cable gland and display



ALTM 2-Q with M12 connector and display



High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION



IP 65 (standard) humidity-tight

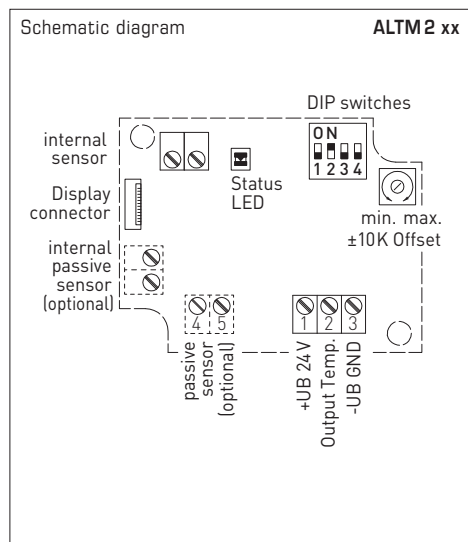


IP 68 (optional) water-tight Perfect Sensor Protection

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

AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output (Automatic Output Switching)



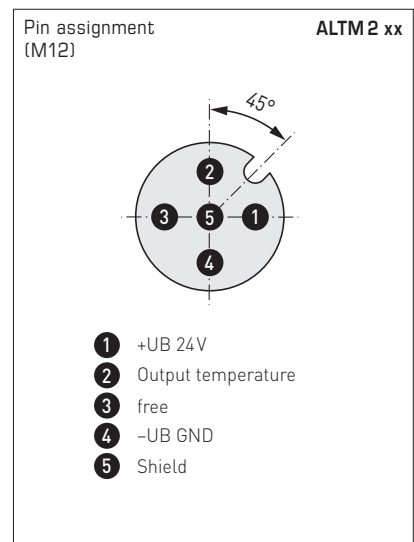
2-wire connection* ALTM 2 - I

- 1 +UB 24V DC
- 2 Output Temp. 4...20mA
- 3 -UB GND (optional for backlighting)

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

3-wire connection (AOS) ALTM 2 - A

- 1 +UB 24V AC/DC
- 2 Output Temp. 0-10V / 4...20mA
- 3 -UB GND

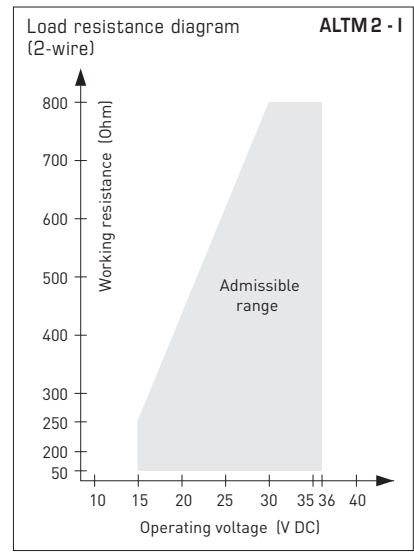


Measuring ranges [°C] (adjustable)	DIP 1	DIP 2	DIP 3
-20...+ 150 °C	ON	ON	ON
-50... + 50 °C	OFF	ON	ON
-20... + 80 °C	ON	OFF	ON
-30... + 60 °C	OFF	OFF	ON
0... + 40 °C	ON	ON	OFF
0... + 50 °C (default)	OFF	ON	OFF
0... + 100 °C	ON	OFF	OFF
0... + 150 °C	OFF	OFF	OFF

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

Display Temperature [°C] → [°F]

The display value depends on the set unit system (DIP4).



For further technical information, see the operating instructions



NEW

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output (Automatic Output Switching)

ALTM 2 - Q
with M12 connector



ALTM 2
with cable gland

THERMASGARD® ALTM 2		Surface contact / tube contact temperature measuring transducers (with cable gland)				
Type / WG01	Output	Type	Display	Item No.	Price	
ALTM 2 - I		(2-wire)				
ALTM2-I	4...20 mA	Remote sensor		1101-1122-0219-920	120,00 €	
ALTM2-I LCD	4...20 mA	Remote sensor	■	1101-1122-2219-920	174,56 €	
ALTM 2 - A		(3-wire AOS)				
ALTM2-A	0-10 V / 4...20 mA	Remote sensor		1101-112E-0219-920	120,00 €	
ALTM2-A LCD	0-10 V / 4...20 mA	Remote sensor	■	1101-112E-2219-920	174,56 €	
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.					
Housing variant:	Cable connection with cable gland					
Extra charge:	other measuring ranges optional				27,21 €	
	Protection type IP68 (Sensor sleeve watertight compound-filled)				3,64 €	
	2-wire connecting leads, per running meter (silicone / PTFE / glass fibre)				on request	

THERMASGARD® ALTM 2 - Q		Surface contact / tube contact temperature measuring transducers (with M12 connector)				
Type / WG01I	Output	Type	Display	Item No.	Price	
ALTM 2 - I Q		(2-wire)				
ALTM2-I Q	4...20 mA	Remote sensor	●	2001-2121-2100-001	164,91 €	
ALTM2-I Q LCD	4...20 mA	Remote Sensor	● ■	2001-2122-2100-001	219,46 €	
ALTM 2 - A Q		(3-wire AOS)				
ALTM2-A Q	0-10 V / 4...20 mA	Remote sensor	●	2001-2121-B100-001	164,91 €	
ALTM2-A Q LCD	0-10 V / 4...20 mA	Remote Sensor	● ■	2001-2122-B100-001	219,46 €	
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.					
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)					
Extra charge:	see table above!					

ACCESSORIES					
WLP-1	Heat-conductive paste, silicone-free			7100-0060-1000-000	4,98 €
Special accessories for M12 connector see chapter Accessories!					