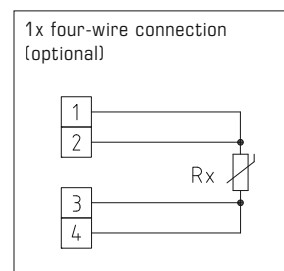
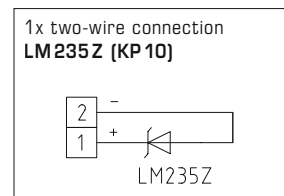
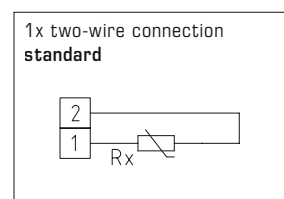


Surface contact temperature sensors / tube contact temperature sensors, including strap, with passive output

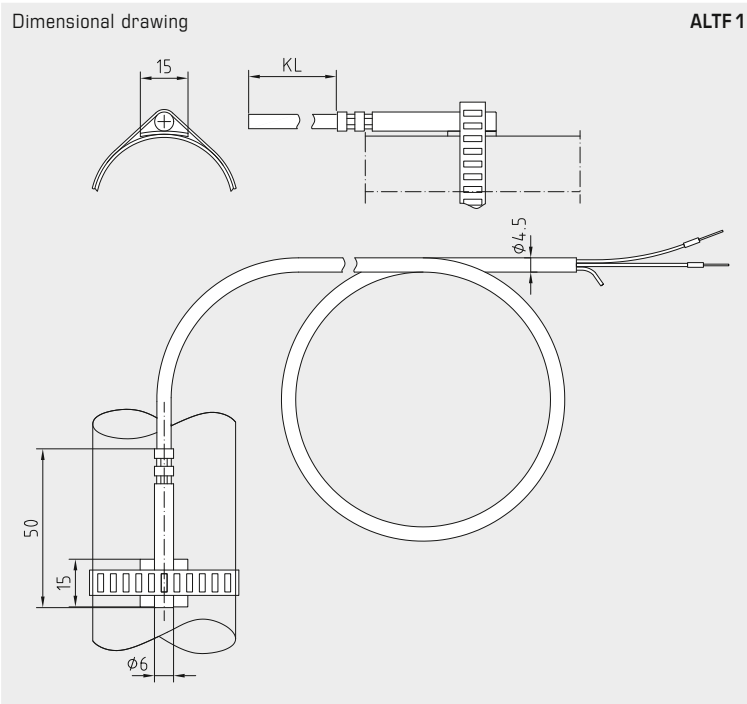
THERMASGARD® ALTF 1 surface contact sensors are electric contact thermometers and are used for measuring surface temperatures of solids, having at least one so-called contact area that is brought into contact with the surface to be measured. The surface contact temperature sensor ALTF 1 with connection cable and passive output determines the temperature of a medium flowing inside a pipe (e.g. water temperature) via the surface temperature. ALTF 1 is a tube contact resistance thermometer with strap and axial feeler tube for measuring temperature on piping and tubes (e.g. cold-water and hot-water), or at heating sections for heating system control.

TECHNICAL DATA

Measuring range:	-35...+105 °C PVC -35...+180 °C silicone (T_{max} NTC = +150 °C, T_{max} LM235Z = +125 °C)
Sensors / output:	see table, passive (optional also with 2 sensors) (Perfect Sensor Protection with IP68)
Connection type:	2-wire connection (4-wire connection optional)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100) < 0.3 mA (Ni1000, Ni1000 TK5000) < 2.0 mW (NTC xx) 400 µA...5 mA (LM235Z)
Process connection:	endless strap and metal tightener (included in the scope of delivery)
Protective tube:	stainless steel, V4A (1.4571), including pre-bent contact plate
Strap dimensions:	Ø = 13-92 mm (1/4 - 3"); length 300 mm
Connecting cable:	PVC; 1.5 m, LiYY, 2 x 0.25 mm ² or silicone, SiHF, 2 x 0.25 mm ² ends stripped, with wire end sleeves
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Humidity:	< 95% r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529) humidity-tight stamped IP68 (optional sensor sleeve watertight compound-filled*)



THERMASGARD® ALTF 1 Surface contact temperature sensors / tube contact temperature sensors (PVC)			
Type / WG03	Sensor / Output	Item No.	Price
ALTF 1 xx PVC		IP 65, PVC	
ALTF1 PT100	Pt100 (according to DIN EN 60 751, class B)	1101-6020-1211-110	17,51 €
ALTF1 PT1000	Pt1000 (according to DIN EN 60 751, class B)	1101-6020-5211-110	17,51 €
ALTF1 Ni1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-6020-9211-110	18,16 €
ALTF1 NiTK	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-6021-0211-110	18,82 €
ALTF1 LM235Z	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-6022-1211-110	18,49 €
ALTF1 NTC1,8K	NTC 1.8K	1101-6021-2211-110	17,95 €
ALTF1 NTC10K	NTC 10K	1101-6021-5211-110	17,95 €
ALTF1 NTC20K	NTC 20K	1101-6021-6211-110	17,95 €
Note:	including strap, connecting cable PVC (KL = 1.5 m)		
Extra charge:	Protection type IP68 (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (PVC) Other sensors optional	on request on request	2,94 €
ACCESSORIES			
WLP-1	Heat-conductive paste, silicone-free	7100-0060-1000-000	2,92 €



* High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

THERMASGARD® ALTF 1 Surface contact temperature sensors / tube contact temperature sensors (silicone)

Type / WG03	Sensor / Output	Item No.	Price
ALTF 1 xx SILIKON		IP 65, silicone	
ALTF1 PT100	Pt100 (according to DIN EN 60 751, class B)	1101-6020-1211-120	18,16 €
ALTF1 PT1000	Pt1000 (according to DIN EN 60 751, class B)	1101-6020-5211-120	18,16 €
ALTF1 NI1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-6020-9211-120	19,38 €
ALTF1 NITK	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-6021-0211-120	20,37 €
ALTF1 LM235Z	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-6022-1211-120	18,82 €
ALTF1 NTC1,8K	NTC 1.8K	1101-6021-2211-120	18,72 €
ALTF1 NTC10K	NTC 10K	1101-6021-5211-120	18,72 €
ALTF1 NTC20K	NTC 20K	1101-6021-6211-120	18,72 €
Note:	including strap, connecting cable silicone (KL = 1.5 m)		
Extra charge:	Protection type IP 68 (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (silicone) Other sensors optional	on request on request	2,94 €
ACCESSORIES			
WLP-1	Heat-conductive paste, silicone-free	7100-0060-1000-000	2,92 €