

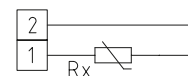
Surface contact temperature sensors /
tube contact temperature sensors, including strap,
with passive output

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.

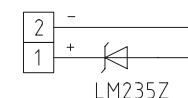
TECHNICAL DATA

Measuring range:	-35...+105 °C PVC -35...+180 °C silicone (T _{max} NTC = +150 °C, T _{max} LM 235 Z = +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:	approx. 1 mA
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:	IP 65 (according to EN 60 529) humidity-tight stamped IP 68 (optional sensor sleeve watertight compound-filled*)

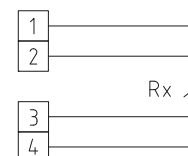
1x two-wire connection
standard



1x two-wire connection
LM 235 Z (KP 10)



1x four-wire connection
(optional)

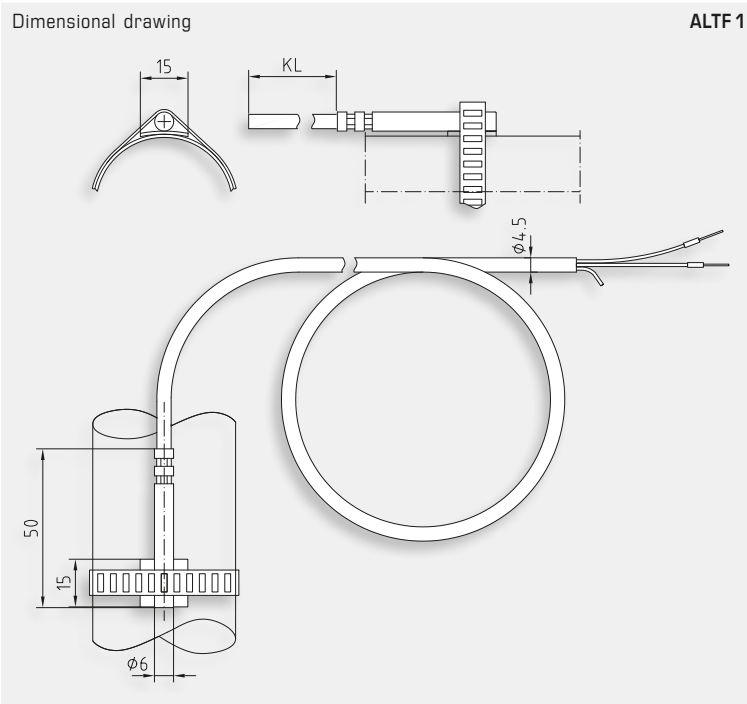


THERMASGARD® ALTF 1 – Surface contact temperature sensors / tube contact temperature sensors (PVC)

Type / WG03	Sensor / Output	Item No.	Price
ALTF 1 xx PVC	Pt, Ni, LM235Z	IP 65, PVC	
ALTF1 PT100	Pt100 (according to DIN EN 60 751, class B)	1101-6020-1211-110	17,08 €
ALTF1 PT1000	Pt1000 (according to DIN EN 60 751, class B)	1101-6020-5211-110	17,08 €
ALTF1 Ni1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-6020-9211-110	16,80 €
ALTF1 Ni1000TK5000	Ni1000 TK5000 (TCR = 5000 ppm / K), LG - Ni1000	1101-6021-0211-110	18,36 €
ALTF1 LM235Z	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-6022-1211-110	18,04 €
ALTF 1 xx PVC	NTC	IP 65, PVC	
ALTF1 NTC1,8K	NTC 1.8K	1101-6021-2211-110	17,51 €
ALTF1 NTC10K	NTC 10K	1101-6021-5211-110	17,51 €
ALTF1 NTC20K	NTC 20K	1101-6021-6211-110	17,51 €
Note:	including strap, connecting cable PVC (KL = 1.5 m)		
Extra charge:	Protection type IP 68 (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (PVC) Other sensors optional	on request on request	2,86 €

Accessories

WLP-1	Heat-conductive paste set	7100-0060-1000-000	2,85 €
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* 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	Pt, Ni, LM235Z	IP65, silicone	
ALTF1 PT100	Pt100 (according to DIN EN 60 751, class B)	1101-6020-1211-120	17,72 €
ALTF1 PT1000	Pt1000 (according to DIN EN 60 751, class B)	1101-6020-5211-120	17,72 €
ALTF1 Ni1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-6020-9211-120	18,91 €
ALTF1 Ni1000TK5000	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-6021-0211-120	19,87 €
ALTF1 LM235Z	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-6022-1211-120	18,36 €
ALTF 1 xx SILIKON	NTC	IP65, silicone	
ALTF1 NTC1,8K	NTC 1.8K	1101-6021-2211-120	18,26 €
ALTF1 NTC10K	NTC 10K	1101-6021-5211-120	18,26 €
ALTF1 NTC20K	NTC 20K	1101-6021-6211-120	18,26 €
Note:	including strap, connecting cable silicone (KL = 1.5m)		
Extra charge:	Protection type IP68 (Sensor sleeve watertight compound-filled) 2-wire connecting leads, per running meter (silicone) Other sensors optional	on request on request	2,86 €
Accessories			
WLP-1	Heat-conductive paste set	7100-0060-1000-000	2,85 €