

TEMPERATUR PASSIV



RØR- & KANALFØLERE

**Immersion / screw-in / duct temperature sensors
with passive output**

Patented quality product (Immersion sensor patent no. DE 10 2012 017 500.0)

THERMASGARD® TF 43 is a resistance thermometer with a passive output, housing made from impact-resistant plastic with snap-on lid, and straight protective tube.

THERMASGARD® TF 65 is a resistance thermometer with a passive output, housing made from impact-resistant plastic with quick-locking screws, and straight protective tube.

These immersion / screw-in / duct temperature sensors are electric contact thermometers for temperature measurement in liquids and gases, which are installed for example in piping systems and vessels. For aggressive media, stainless steel immersion sleeves must be used.

Applications of these temperature sensors in piping systems, in heating technology, in storage tanks, in district heating compact stations, in hot and cold-water systems, in oil and lubricant circulation systems, in mechanical, apparatus and plant engineering as well as in the entire industrial sector.

TECHNICAL DATA

Measuring range:	–30...+150 °C (T _{max} NTC = +150 °C, T _{max} LM235Z = +125 °C)
Sensors / output:	see table, passive (Perfect Sensor Protection) (optional also with two sensors)
Connection type:	2-wire connection (4-wire connection on PT100/PT1000A, optional on other sensors)
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)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Ambient temperature:	–20...+100 °C
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016) TF 43 with snap-on lid TF 65 with quick-locking screws (slotted / Phillips head combination)
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 / Tyr 01)
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
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Permissible humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	TF 43 IP54 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) TF 65 IP65 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) * Housing in the built-in state

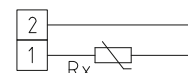
ACCESSORIES

MF-15-K	Mounting flange , plastic, 56.8 x 84.3 mm, Ø = 15.2 mm tube gland, T _{max} = +100 °C
TH08-ms/xx	Immersion sleeve , brass, nickel-plated, Ø = 8 mm, T _{max} = +150 °C, p _{max} = 10 bar
TH08-VA/xx	Immersion sleeve , stainless steel, V4A (1.4571), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar
TH08-VA/xx/90	Immersion sleeve , stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar

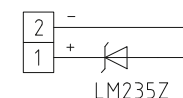
High-performance encapsulation against
vibration, mechanical stress and humidity



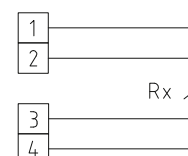
1x two-wire connection
Standard



1x two-wire connection
LM235Z (KP 10)



1x four-wire connection
(optional)

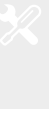




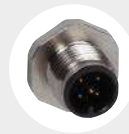
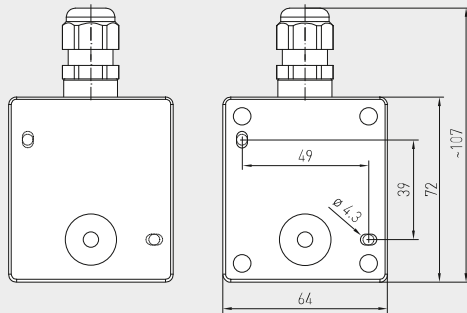
S+S REGELTECHNIK

THERMASGARD® TF 43
THERMASGARD® TF 65

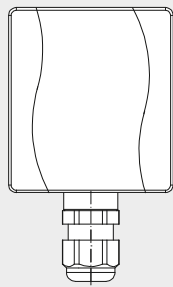
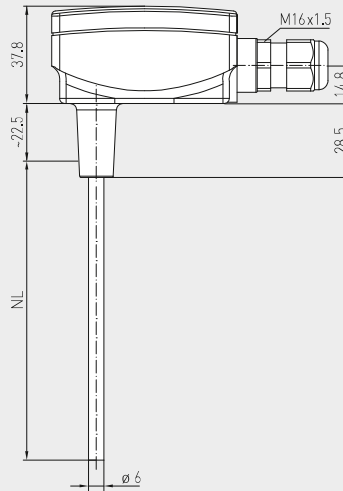
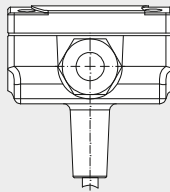
Immersion / screw-in / duct temperature sensors
with passive output



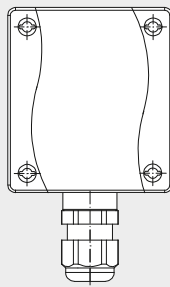
Dimensional drawing



M12 connector
(optional on request)



with snap-on lid



with quick-locking
screws

TF 43
TF 65

TF 43
with snap-on lid
(IP 54)



TF 65
with quick-locking screws
(IP 65)



PATENTED



TFxx
Basic device
with accessories

THERMASGARD® TF 65 Temperature sensors (Basic device with quick-locking screws), *Premium*

Type / WG03 / EL	Sensor / Output	Item No.	Price
TF65 PT100 xx	Pt100	IP65	
TF65 Pt100 50mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1013-000	36,02 €
TF65 Pt100 100mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1023-000	37,49 €
TF65 Pt100 150mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1033-000	38,96 €
TF65 Pt100 200mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1043-000	39,53 €
TF65 Pt100 250mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1053-000	41,33 €
TF65 Pt100 300mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1063-000	42,69 €
TF65 Pt100 350mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1073-000	43,47 €
TF65 Pt100 400mm	Pt100 (according to DIN EN 60 751, class B)	1101-7020-1083-000	44,50 €
TF65 PT1000 xx	Pt1000	IP65	
TF65 Pt1000 50mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5011-000	38,50 €
TF65 Pt1000 100mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5021-000	39,98 €
TF65 Pt1000 150mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5031-000	41,44 €
TF65 Pt1000 200mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5041-000	42,00 €
TF65 Pt1000 250mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5051-000	43,82 €
TF65 Pt1000 300mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5061-000	45,17 €
TF65 Pt1000 350mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5071-000	45,73 €
TF65 Pt1000 400mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7020-5081-000	46,52 €
TF65 PT1000A xx	Pt1000A	IP65	
TF65 Pt1000A 50mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6013-000	40,35 €
TF65 Pt1000A 100mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6023-000	41,00 €
TF65 Pt1000A 150mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6033-000	43,14 €
TF65 Pt1000A 200mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6043-000	43,70 €
TF65 Pt1000A 250mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6053-000	45,51 €
TF65 Pt1000A 300mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6063-000	46,97 €
TF65 Pt1000A 350mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6073-000	48,44 €
TF65 Pt1000A 400mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7020-6083-000	48,66 €
TF65 Ni1000 xx	Ni1000	IP65	
TF65 Ni1000 50mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9011-000	37,83 €
TF65 Ni1000 100mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9021-000	39,64 €
TF65 Ni1000 150mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9031-000	41,10 €
TF65 Ni1000 200mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9041-000	41,67 €
TF65 Ni1000 250mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9051-000	43,47 €
TF65 Ni1000 300mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9061-000	44,82 €
TF65 Ni1000 350mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9071-000	45,73 €
TF65 Ni1000 400mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7020-9081-000	46,30 €
TF65 NI1000TK xx	Ni1000 TK5000	IP65	
TF65 NiTK 50mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0011-000	37,83 €
TF65 NiTK 100mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0021-000	39,64 €
TF65 NiTK 150mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0031-000	41,10 €
TF65 NiTK 200mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0041-000	41,67 €
TF65 NiTK 250mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0051-000	43,47 €
TF65 NiTK 300mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0061-000	44,82 €
TF65 NiTK 350mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0071-000	45,73 €
TF65 NiTK 400mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7021-0081-000	42,27 €

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High-performance encapsulation against
vibration, mechanical stress and humidity





THERMASGARD® TF 65 Temperature sensors (Basic device with quick-locking screws), <i>Premium</i>			
Type / WG03 / EL	Sensor / Output	Item No.	Price
TF65 LM235Z xx	LM235Z	IP65	
TF65 LM235Z 50mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1011-000	36,58 €
TF65 LM235Z 100mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1021-000	37,94 €
TF65 LM235Z 150mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1031-000	39,41 €
TF65 LM235Z 200mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1041-000	39,98 €
TF65 LM235Z 250mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1051-000	41,89 €
TF65 LM235Z 300mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1061-000	43,25 €
TF65 LM235Z 350mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1071-000	44,04 €
TF65 LM235Z 400mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7022-1081-000	44,60 €
TF65 NTC 1.8K xx	NTC 1.8K	IP65	
TF65 NTC1,8K 50mm	NTC 1.8K	1101-7021-2011-000	34,56 €
TF65 NTC1,8K 100mm	NTC 1.8K	1101-7021-2021-000	36,02 €
TF65 NTC1,8K 150mm	NTC 1.8K	1101-7021-2031-000	37,49 €
TF65 NTC1,8K 200mm	NTC 1.8K	1101-7021-2041-000	37,94 €
TF65 NTC1,8K 250mm	NTC 1.8K	1101-7021-2051-000	39,85 €
TF65 NTC1,8K 300mm	NTC 1.8K	1101-7021-2061-000	41,21 €
TF65 NTC1,8K 350mm	NTC 1.8K	1101-7021-2071-000	41,95 €
TF65 NTC1,8K 400mm	NTC 1.8K	1101-7021-2081-000	42,91 €
TF65 NTC10K xx	NTC 10K	IP65	
TF65 NTC10K 50mm	NTC 10K	1101-7021-5011-000	34,56 €
TF65 NTC10K 100mm	NTC 10K	1101-7021-5021-000	36,02 €
TF65 NTC10K 150mm	NTC 10K	1101-7021-5031-000	37,49 €
TF65 NTC10K 200mm	NTC 10K	1101-7021-5041-000	37,94 €
TF65 NTC10K 250mm	NTC 10K	1101-7021-5051-000	39,85 €
TF65 NTC10K 300mm	NTC 10K	1101-7021-5061-000	41,21 €
TF65 NTC10K 350mm	NTC 10K	1101-7021-5071-000	41,95 €
TF65 NTC10K 400mm	NTC 10K	1101-7021-5081-000	42,91 €
TF65 NTC20K xx	NTC 20K	IP65	
TF65 NTC20K 50mm	NTC 20K	1101-7021-6011-000	34,56 €
TF65 NTC20K 100mm	NTC 20K	1101-7021-6021-000	36,02 €
TF65 NTC20K 150mm	NTC 20K	1101-7021-6031-000	37,49 €
TF65 NTC20K 200mm	NTC 20K	1101-7021-6041-000	37,94 €
TF65 NTC20K 250mm	NTC 20K	1101-7021-6051-000	39,74 €
TF65 NTC20K 300mm	NTC 20K	1101-7021-6061-000	41,21 €
TF65 NTC20K 350mm	NTC 20K	1101-7021-6071-000	41,95 €
TF65 NTC20K 400mm	NTC 20K	1101-7021-6081-000	42,91 €
Note:	Other sensors optional	on request	
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101	on request	



THERMASGARD® TF 43 Temperature sensors (Basic device with snap-on lid), *Standard*

Type / WG03 / EL	Sensor / Output	Item No.	Price
TF43 PT100 xx	Pt100	IP54	
TF43 Pt100 50mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1013-000	26,92 €
TF43 Pt100 100mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1023-000	27,04 €
TF43 Pt100 150mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1033-000	27,90 €
TF43 Pt100 200mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1043-000	28,68 €
TF43 Pt100 250mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1053-000	30,14 €
TF43 Pt100 300mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1063-000	32,62 €
TF43 Pt100 350mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1073-000	33,62 €
TF43 Pt100 400mm	Pt100 (according to DIN EN 60 751, class B)	1101-7010-1083-000	34,69 €
TF43 PT1000 xx	Pt1000	IP54	
TF43 Pt1000 50mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5011-000	26,92 €
TF43 Pt1000 100mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5021-000	27,04 €
TF43 Pt1000 150mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5031-000	27,90 €
TF43 Pt1000 200mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5041-000	28,68 €
TF43 Pt1000 250mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5051-000	30,14 €
TF43 Pt1000 300mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5061-000	32,62 €
TF43 Pt1000 350mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5071-000	33,62 €
TF43 Pt1000 400mm	Pt1000 (according to DIN EN 60 751, class B)	1101-7010-5081-000	34,69 €
TF43 PT1000A xx	Pt1000A	IP54	
TF43 Pt1000A 50mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6013-000	28,61 €
TF43 Pt1000A 100mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6023-000	28,74 €
TF43 Pt1000A 150mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6033-000	29,59 €
TF43 Pt1000A 200mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6043-000	30,37 €
TF43 Pt1000A 250mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6053-000	31,83 €
TF43 Pt1000A 300mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6063-000	34,31 €
TF43 Pt1000A 350mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6073-000	35,32 €
TF43 Pt1000A 400mm	Pt1000 (according to VDI/VDE 3512, class A-TGA)	1101-7010-6083-000	36,39 €
TF43 Ni1000 xx	Ni1000	IP54	
TF43 Ni1000 50mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9011-000	27,59 €
TF43 Ni1000 100mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9021-000	30,20 €
TF43 Ni1000 150mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9031-000	30,42 €
TF43 Ni1000 200mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9041-000	31,09 €
TF43 Ni1000 250mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9051-000	31,96 €
TF43 Ni1000 300mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9061-000	34,07 €
TF43 Ni1000 350mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9071-000	35,04 €
TF43 Ni1000 400mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm/K)	1101-7010-9081-000	36,61 €
TF43 NI1000TK xx	Ni1000 TK5000	IP54	
TF43 NiTK 50mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0011-000	27,64 €
TF43 NiTK 100mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0021-000	30,26 €
TF43 NiTK 150mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0031-000	30,57 €
TF43 NiTK 200mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0041-000	31,22 €
TF43 NiTK 250mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0051-000	32,07 €
TF43 NiTK 300mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0061-000	34,20 €
TF43 NiTK 350mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0071-000	35,27 €
TF43 NiTK 400mm	Ni1000 TK5000 (TCR = 5000 ppm/K), LG-Ni1000	1101-7011-0081-000	36,74 €

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 High-performance encapsulation against
vibration, mechanical stress and humidity




THERMASGARD® TF 43 Temperature sensors (Basic device with snap-on lid), <i>Standard</i>			
Type / WG03 / EL	Sensor / Output	Item No.	Price
TF43 LM235Z xx	LM235Z	IP54	
TF43 LM235Z 50mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1011-000	28,13 €
TF43 LM235Z 100mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1021-000	28,44 €
TF43 LM235Z 150mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1031-000	29,47 €
TF43 LM235Z 200mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1041-000	30,14 €
TF43 LM235Z 250mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1051-000	30,49 €
TF43 LM235Z 300mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1061-000	33,10 €
TF43 LM235Z 350mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1071-000	33,50 €
TF43 LM235Z 400mm	LM235Z (TCR = 10 mV / K; 2.73 V at 0 °C), KP10	1101-7012-1081-000	35,60 €
TF43 NTC 1.8K xx	NTC 1.8K	IP54	
TF43 NTC1,8K 50mm	NTC 1.8K	1101-7011-2011-000	26,92 €
TF43 NTC1,8K 100mm	NTC 1.8K	1101-7011-2021-000	28,38 €
TF43 NTC1,8K 150mm	NTC 1.8K	1101-7011-2031-000	29,10 €
TF43 NTC1,8K 200mm	NTC 1.8K	1101-7011-2041-000	29,78 €
TF43 NTC1,8K 250mm	NTC 1.8K	1101-7011-2051-000	31,22 €
TF43 NTC1,8K 300mm	NTC 1.8K	1101-7011-2061-000	32,25 €
TF43 NTC1,8K 350mm	NTC 1.8K	1101-7011-2071-000	33,34 €
TF43 NTC1,8K 400mm	NTC 1.8K	1101-7011-2081-000	34,20 €
TF43 NTC10K xx	NTC 10K	IP54	
TF43 NTC10K 50mm	NTC 10K	1101-7011-5011-000	26,92 €
TF43 NTC10K 100mm	NTC 10K	1101-7011-5021-000	28,38 €
TF43 NTC10K 150mm	NTC 10K	1101-7011-5031-000	29,10 €
TF43 NTC10K 200mm	NTC 10K	1101-7011-5041-000	29,78 €
TF43 NTC10K 250mm	NTC 10K	1101-7011-5051-000	31,22 €
TF43 NTC10K 300mm	NTC 10K	1101-7011-5061-000	32,25 €
TF43 NTC10K 350mm	NTC 10K	1101-7011-5071-000	33,34 €
TF43 NTC10K 400mm	NTC 10K	1101-7011-5081-000	34,20 €
TF43 NTC20K xx	NTC 20K	IP54	
TF43 NTC20K 50mm	NTC 20K	1101-7011-6011-000	26,92 €
TF43 NTC20K 100mm	NTC 20K	1101-7011-6021-000	28,38 €
TF43 NTC20K 150mm	NTC 20K	1101-7011-6031-000	29,10 €
TF43 NTC20K 200mm	NTC 20K	1101-7011-6041-000	29,78 €
TF43 NTC20K 250mm	NTC 20K	1101-7011-6051-000	31,22 €
TF43 NTC20K 300mm	NTC 20K	1101-7011-6061-000	32,25 €
TF43 NTC20K 350mm	NTC 20K	1101-7011-6071-000	33,34 €
TF43 NTC20K 400mm	NTC 20K	1101-7011-6081-000	34,20 €
Note	Other sensors optional	on request	
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101	on request	

TF 43
with snap-on lid
(IP 54)

**Immersion / screw-in / duct temperature sensors
 with passive output**

One basic device in four variants ...

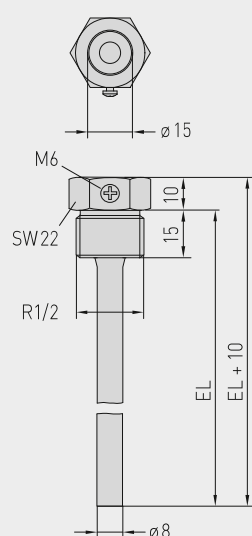


PATENTED

**TFxx +
 TH08-ms/xx**

Immersion / screw-in
 temperature sensor
 with immersion sleeve,
 brass, nickel-plated

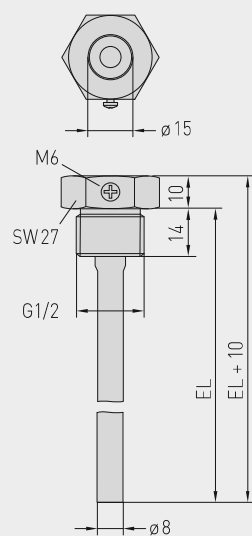
**Dimensional drawing
 TH08-ms/xx**



**TFxx +
 TH08-VA/xx**

Immersion / screw-in
 temperature sensor
 with immersion sleeve,
 stainless steel, V4A

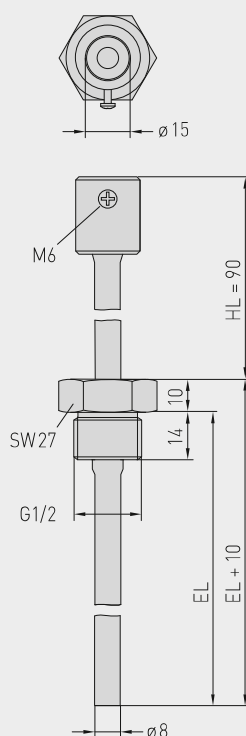
**Dimensional drawing
 TH08-VA/xx**



**TFxx +
 TH08-VA/xx/90**

Immersion / screw-in
 temperature sensor with
 immersion sleeve with neck
 tube, stainless steel, V4A

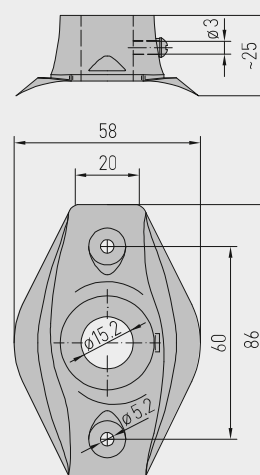
**Dimensional drawing
 TH08-VA/xx/90**



**TFxx +
 MF-15-K**

Duct temperature sensor
 with mounting flange, plastic

**Dimensional drawing
 MF-15-K**





S+S REGELTECHNIK

THERMASGARD® TF 43
THERMASGARD® TF 65

Immersion / screw-in / duct temperature sensors
with passive output

...through combination with accessories:



TH08-ms/xx

Immersion sleeve,
brass, nickel-plated,
thread-sealing, conical,
according to DIN 10226



TH08-VA/xx

Immersion sleeve,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



TH08-VA/xx/90

Immersion sleeve with neck tube,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



MF-15-K

Mounting flange,
plastic

THERMASGARD® TH08		Immersion sleeve Ø 8 mm (Accessories)			
Type / WG01B	p _{max} (static)	T _{max}	Inserted Length (EL)	Item No.	Price
TH 08 -ms / xx	Brass, nickel-plated			without neck tube	
TH08-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-132	8,87 €
TH08-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-132	10,10 €
TH08-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-132	10,67 €
TH08-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-132	11,01 €
TH08-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-132	12,75 €
TH08-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-132	13,10 €
TH08-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-132	13,21 €
TH08-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-132	13,33 €
TH 08 -VA / xx	Stainless steel, V4A (1.4571)			without neck tube	
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132	19,31 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	21,34 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	22,93 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	24,17 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	30,05 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	31,40 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	31,61 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	32,17 €
TH 08 -VA / xx / 90	Stainless steel, V4A (1.4571)			with neck tube (90 mm)	
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	27,66 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	28,90 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	30,32 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	31,61 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	33,13 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	35,91 €
Note:	inner diameter of socket 15.0 mm For further information see last chapter!				
Mounting flange (Accessories)					
Type / WG01B			T _{max}	Item No.	Price
MF					
MF-15-K	Mounting flange, plastic, 56.8 x 84.3 mm, Ø 15.2 mm tube gland		+100 °C	7100-0032-0000-000	5,83 €
Note:	For further information see last chapter!				

THERMASGARD® TF 43-F THERMASGARD® TF 65-F

Flexible sleeve / cable temperature sensors,
immersion / screw-in temperature sensors,
with passive output



S+S REGELTECHNIK

Patented quality product (Immersion sensor patent no. DE 10 2012 017 500.0)

THERMASGARD® TF 43-F is a resistance thermometer with a passive output, housing made from impact-resistant plastic with snap-on lid, with sensor sleeve and flexible cable length.

THERMASGARD® TF 65-F is a resistance thermometer with a passive output, housing made from impact-resistant plastic with quick-locking screws, with sensor sleeve and flexible cable length.

These built-in temperature sensors / immersion temperature sensors are electric contact thermometers for temperature measurement in liquids and gases, which are installed for example in piping systems and vessels. For aggressive media, stainless steel immersion sleeves must be used. Applications of these temperature sensors in piping systems, in heating technology, in storage tanks, in district heating compact stations, in hot and cold-water systems, in oil and lubricant circulation systems, in mechanical, apparatus and plant engineering as well as in the entire industrial sector.

TECHNICAL DATA

Measuring range:	-50...+180 °C
Sensors / output:	see table, passive (Perfect Sensor Protection) (optional also with two sensors)
Connection type:	2-wire connection (4-wire connection optional)
Testing current:	< 0.6 mA (Pt1000) < 0.3 mA (Ni1000)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Ambient temperature:	-20...+100 °C
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016) TF 43-F with snap-on lid TF 65-F with quick-locking screws (slotted / Phillips head combination)
Housing dimensions:	72 x 64 x 37,8 mm (Tyr 1 / Tyr 01)
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 mm², via terminal screws
Connecting cable:	silicone, SiHF, 2 x 0.25 mm², cable length (KL) = flexible, inserted length (EL) > 50 mm
Sensor sleeve:	stainless steel V4A (1.4571), Ø = 6 mm, nominal length = 50 mm
Permissible humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type housing:	TF 43-F IP54 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) TF 65-F IP65 (according to EN 60529)* * Housing in the built-in state
Protection type sensor:	IP65 (according to EN 60529) sleeve humidity-tight (standard) IP68 (according to EN 60529) sleeve water-tight (optional)

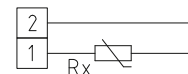
ACCESSORIES

TH08-ms / xx	Immersion sleeve , brass, nickel-plated, Ø = 8 mm, T _{max} = +150 °C, p _{max} = 10 bar
TH08-VA / xx	Immersion sleeve , stainless steel, V4A (1.4571), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar
TH08-VA / xx / 90	Immersion sleeve , stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar

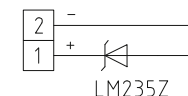
High-performance encapsulation against
vibration, mechanical stress and humidity



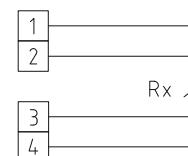
1x two-wire connection
Standard



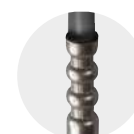
1x two-wire connection
LM235Z (KP 10)



1x four-wire connection
(optional)



IP65 (standard)
humidity-tight



IP68 (optional)
water-tight
Perfect Sensor Protection



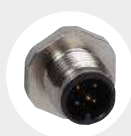
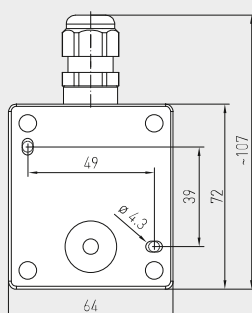
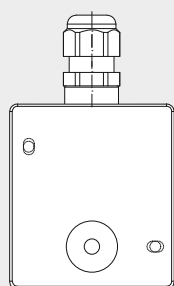
S+S REGELTECHNIK

THERMASGARD® TF 43-F
THERMASGARD® TF 65-F

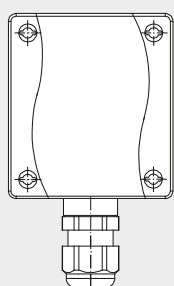
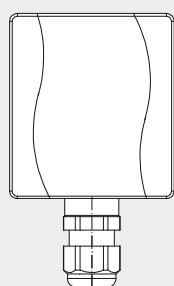
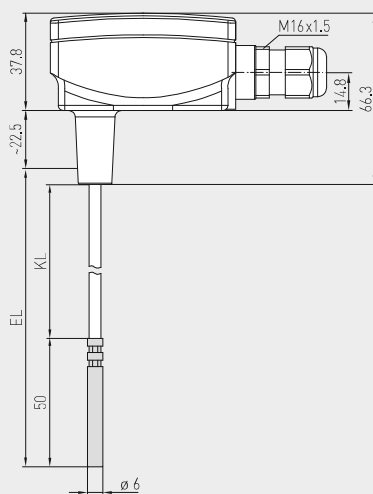
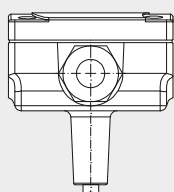
Flexible sleeve / cable temperature sensors,
immersion / screw-in temperature sensors,
with passive output



Dimensional drawing



M12 connector
(optional on request)



with snap-on lid

with quick-locking screws

TF 43-F
TF 65-F



TF 43-F
with snap-on lid
(IP 54)



TF 65-F
with quick-locking screws
(IP 65)

THERMASGARD® TF 43 F Flexible cable temperature sensor (basic unit with snap-on lid), *Standard*

Type / WG01 / EL	Sensor / Output	Sensor / Output	Price
TF 43-F xx		IP 54	
TF 43-F Pt1000 250mm	Pt1000 (according to DIN EN 60 751, class B)	1101-3080-5051-000	41,21 €
TF 43-F Pt1000 450mm	Pt1000 (according to DIN EN 60 751, class B)	1101-3080-5091-000	42,35 €
TF 43-F Ni1000 250mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-3080-9051-000	43,82 €
TF 43-F Ni1000 450mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-3080-9091-000	44,95 €
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101	on request	
Note:	flexible cable length (EL > 50 mm)		

THERMASGARD® TF 65-F Flexible cable temperature sensor (basic unit with quick-locking screws), *Premium*

Type / WG01 / EL	Sensor / Output	Sensor / Output	Price
TF 65-F xx		IP 65	
TF 65-F Pt1000 250mm	Pt1000 (according to DIN EN 60 751, class B)	1101-3060-5051-000	47,63 €
TF 65-F Pt1000 450mm	Pt1000 (according to DIN EN 60 751, class B)	1101-3060-5091-000	48,77 €
TF 65-F Ni1000 250mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-3060-9051-000	50,23 €
TF 65-F Ni1000 450mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-3060-9091-000	51,36 €
Extra charge:	Other sensors and cable lengths optional	on request	
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101	on request	
Note:	flexible cable length (EL > 50 mm)		

A basic unit with flexible cable length in three variants...



**TFxx-F +
TH08-ms/xx**

Immersion / screw-in
 temperature sensor
 with immersion sleeve,
 brass, nickel-plated

**TFxx-F +
TH08-VA/xx**

Immersion / screw-in
 temperature sensor
 with immersion sleeve,
 stainless steel, V4A

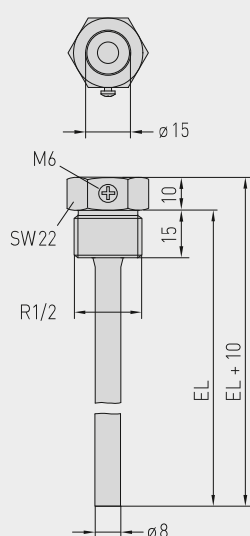
**TFxx-F +
TH08-VA/xx/90**

Immersion / screw-in
 temperature sensor with
 immersion sleeve with neck
 tube, stainless steel, V4A

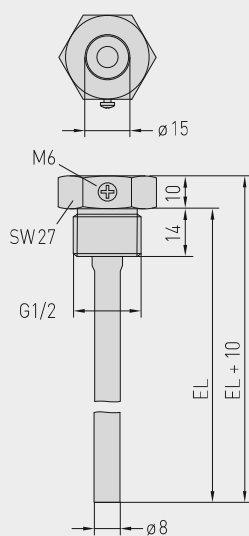
**TFxx-F
Basic unit**

Flexible cable length
 through cable entry
 in the housing

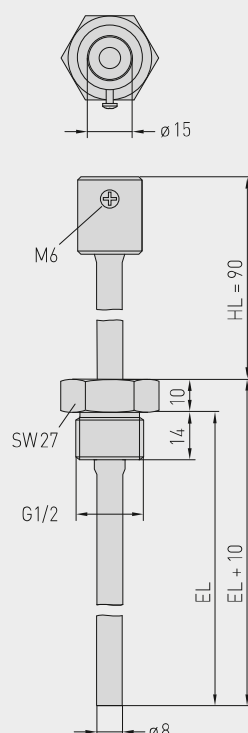
Dimensional drawing
TH08-ms/xx



Dimensional drawing
TH08-VA/xx



Dimensional drawing
TH08-VA/xx/90





S+S REGELTECHNIK

THERMASGARD® TF 43-F
THERMASGARD® TF 65-F

Flexible sleeve / cable temperature sensors,
immersion / screw-in temperature sensors,
with passive output

...through combination with accessories:



TH08-ms/xx

Immersion sleeve,
brass, nickel-plated,
thread-sealing, conical,
according to DIN 10226



TH08-VA/xx

Immersion sleeve,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



TH08-VA/xx/90

Immersion sleeve with neck tube,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228

THERMASGARD® TH08 Immersion sleeve Ø 8 mm (Accessories)					
Type / WG01B	p _{max} (static)	T _{max}	Inserted Length (EL)	Item No.	Price
TH08-ms/xx	Brass, nickel-plated			without neck tube	
TH08-MS 50MM	10 bar	+150 °C	50 mm	7100-0011-0010-132	8,87 €
TH08-MS 100MM	10 bar	+150 °C	100 mm	7100-0011-0020-132	10,10 €
TH08-MS 150MM	10 bar	+150 °C	150 mm	7100-0011-0030-132	10,67 €
TH08-MS 200MM	10 bar	+150 °C	200 mm	7100-0011-0040-132	11,01 €
TH08-MS 250MM	10 bar	+150 °C	250 mm	7100-0011-0050-132	12,75 €
TH08-MS 300MM	10 bar	+150 °C	300 mm	7100-0011-0060-132	13,10 €
TH08-MS 350MM	10 bar	+150 °C	350 mm	7100-0011-0070-132	13,21 €
TH08-MS 400MM	10 bar	+150 °C	400 mm	7100-0011-0080-132	13,33 €
TH08-VA/xx	Stainless steel, V4A (1.4571)			without neck tube	
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132	19,31 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	21,34 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	22,93 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	24,17 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	30,05 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	31,40 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	31,61 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	32,17 €
TH08-VA/xx/90	Stainless steel, V4A (1.4571)			with neck tube (90 mm)	
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	27,66 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	28,90 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	30,32 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	31,61 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	33,13 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	35,91 €
Note: inner diameter of socket 15.0 mm For further information see last chapter!					

**Mean value / rod / duct temperature sensor
including mounting flange, with passive output**

Mean-value temperature sensor **THERMASGARD® MWTF** (rod sensor 0.4...20 m)
with passive output, in an impact-resistant plastic housing with quick-locking screws,
with bendable sensor rod (fully active), protective tube made from copper, plastic-coated,
and anti-kink spring, incl. mounting flange.

Mean-value temperature sensor **THERMASGARD® MWTF-SD** (rod sensor 3 m / 6 m)
with passive output, in an impact-resistant plastic housing 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 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.

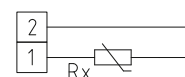
MWTF
Rod length 0,4 m
(IP 65)



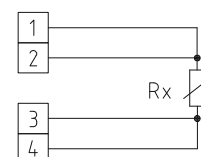
TECHNICAL DATA

Measuring range:	−30...+80 °C
Sensors / output:	see table, passive
Connection type:	2-wire connection (4-wire connection on PT100, optional on other sensors)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100) < 0.3 mA (Ni1000)
Sensor:	active over the entire length (averaging)
Rod material:	protective tube made from copper, plastic-coated, (MWTF) (made from reinforced thermoplastic hose on the MWTF-SD), 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, see table (nominal length optionally up to max. 20 m)
Rod laying:	Observe the admissible values! Bending radius: > 35 mm Vibration load: ≤ 0.5 g Tensile load: < 480 N for the MWTF < 100 N for the MWTF-SD
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 dimensions:	72 x 64 x 37.8 mm (Tyr 1)
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 mm² via terminal screws
Process connection:	by mounting flange, plastic, (galvanised steel optional, see accessories) and mounting clamps MK-05-M
Ambient temperature:	−20...+80 °C
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) for the MWTF-SD IP 65 (according to EN 60 529) for the MWTF Housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)
ACCESSORIES	see table

1x two-wire connection
standard



1x four-wire connection
(optional)





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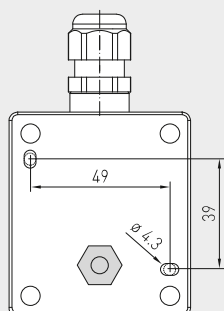
THERMASGARD® MWTF
THERMASGARD® MWTF-SD

Mean value / rod / duct temperature sensor
including mounting flange, with passive output

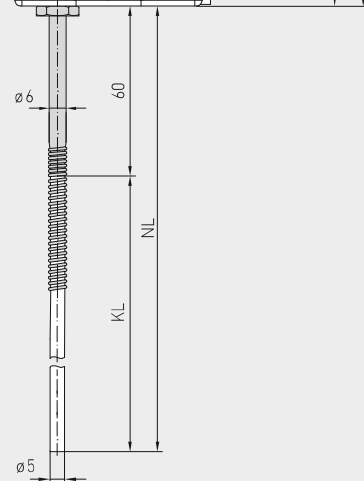
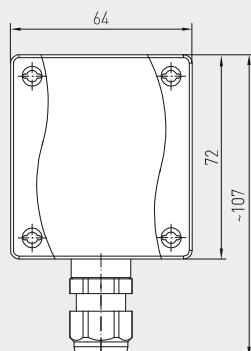
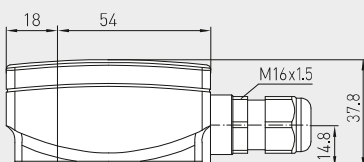
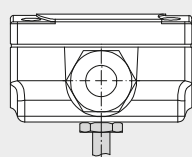


Dimensional drawing

MWTF



M12 connector
(optional on request)



MWTF

Rod length 3 m / 6 m
(IP65)



MWTF-SD

Rod length 3 m / 6 m
(IP54)



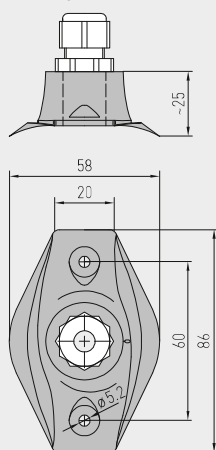
Mean value / rod / duct temperature sensor
 including mounting flange, with passive output

MWTF
 Rod length 0,4 m
 (IP 65)



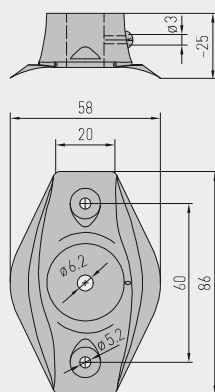
Dimensional drawing

KRD-04



Dimensional drawing

MF-06-K



MF-06-K

Mounting flange,
 plastic
 (Included in the
 scope of delivery)



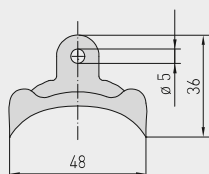
KRD-04

Capillary tube
 bushing, plastic
 (optional)



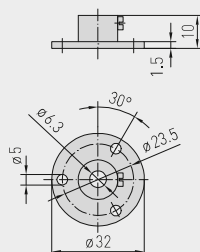
Dimensional drawing

MK-05-M



Dimensional drawing

MF-06-M



MF-06-M

Mounting flange,
 metal
 (optional)



MK-05-M

Mounting clamps,
 galvanised steel
 (from 3 m rod length,
 included in the scope
 of delivery)





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THERMASGARD® MWTF
THERMASGARD® MWTF-SD

Mean value / rod / duct temperature sensor
including mounting flange, with passive output

MWTF

Rod length 3 m / 6 m
(IP 65)



MWTF-SD

Rod length 3 m / 6 m
(IP 54)



THERMASGARD® MWTF-SD

Mean-value temperature sensor
with rod made from reinforced thermoplastic hose, *Standard*

Type / WG03B	Sensor / Output	Rod length	Item No.	Price
MWTF-SD	Pt 1000		IP 54	
MWTF-SD Pt1000 3m	Pt1000 (according to DIN EN 60 751, class B)	3.0 m	1101-3050-5231-200	90,12 €
MWTF-SD Pt1000 6m	Pt1000 (according to DIN EN 60 751, class B)	6.0 m	1101-3050-5261-200	100,27 €
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101			on request

THERMASGARD® MWTF

Mean-value temperature sensor
with rod made from copper, plastic-coated, *Premium*

Type / WG03	Sensor / Output	Rod length	Item No.	Price
MWTF	Pt 100		IP 65	
MWTF Pt100 0,4m	Pt100 (according to DIN EN 60 751, class B)	0.4 m	1101-3050-1083-000	78,82 €
MWTF Pt100 3m	Pt100 (according to DIN EN 60 751, class B)	3.0 m	1101-3050-1233-000	138,21 €
MWTF Pt100 6m	Pt100 (according to DIN EN 60 751, class B)	6.0 m	1101-3050-1263-000	185,51 €
MWTF	Pt 1000		IP 65	
MWTF Pt1000 0,4m	Pt1000 (according to DIN EN 60 751, class B)	0.4 m	1101-3050-5081-000	78,82 €
MWTF Pt1000 3m	Pt1000 (according to DIN EN 60 751, class B)	3.0 m	1101-3050-5231-000	138,21 €
MWTF Pt1000 6m	Pt1000 (according to DIN EN 60 751, class B)	6.0 m	1101-3050-5261-000	185,51 €
MWTF	Ni 1000		IP 65	
MWTF Ni1000 0,4m	Ni1000 (according to DIN EN 43 760, class B)	0.4 m	1101-3050-9081-000	78,82 €
MWTF Ni1000 3m	Ni1000 (according to DIN EN 43 760, class B)	3.0 m	1101-3050-9231-000	144,89 €
MWTF Ni1000 6m	Ni1000 (according to DIN EN 43 760, class B)	6.0 m	1101-3050-9261-000	185,51 €
Extra charge:	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	5,83 €
MF-06-M	Mounting flange, metal, galvanised steel, Ø = 35 mm	7100-0030-5000-100	9,10 €
KRD-04	Capillary tube gland bracket, plastic	7100-0030-7000-000	8,49 €
MK-05-M	Mounting clamps, galvanised steel (6 pieces) (from 3 m rod length, included in the scope of delivery)	7100-0034-0000-000	9,41 €

For further information see last chapter!

**Screw-in / immersion temperature sensors
with neck tube (stepped once)
with passive output**

ETF 7

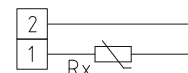
Very quickly responding screw-in resistance thermometer / immersion temperature sensor **THERMASGARD® ETF 7** with passive output, neck tube and a single-tapered stainless steel protective tube, housing cover with quick-locking screws, very short reaction time, particularly suitable for very quick temperature changes and control operations, e.g. in hydraulic systems.

TECHNICAL DATA

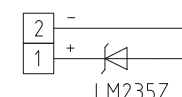
Measuring range:	–35...+150 °C
Sensors / output:	see table, passive (Perfect Sensor Protection)
Response times:	$t_{0,5} = 2.8 \text{ s}$ $t_{0,9} = 10 \text{ s}$ (for water at a flow rate of 2 m/s)
Connection type:	2-wire connection (4-wire connection on PT100, optional on other sensors)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100) < 0.3 mA (Ni1000, Ni1000 TK5000)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 1.5 mm² via terminal screws
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101
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 dimensions:	72 x 64 x 37.8 mm (Tyr 1)
Protective tube:	stainless steel V4A (1.4571), G ½" straight pipe thread, wrench size 27 mm, $p_{\max} = 6 \text{ bar}$, $\varnothing = 6 \text{ mm}$, single-tapered to $\varnothing = 4 \text{ mm}$ (see dimensional drawing) length of neck tube (HL) = 25 mm inserted length (EL) = 100 - 250 mm (see table)
Process connection:	screwed socket with G ½" straight pipe thread
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)



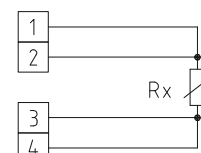
1x two-wire connection
standard



1x two-wire connection
LM235Z (KP 10)



1x four-wire connection
(optional)



High-performance encapsulation against
vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION





S+S REGELTECHNIK

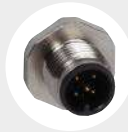
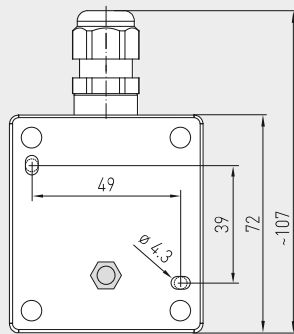
THERMASGARD® ETF 7

Screw-in / immersion temperature sensors
with neck tube (stepped once)
with passive output

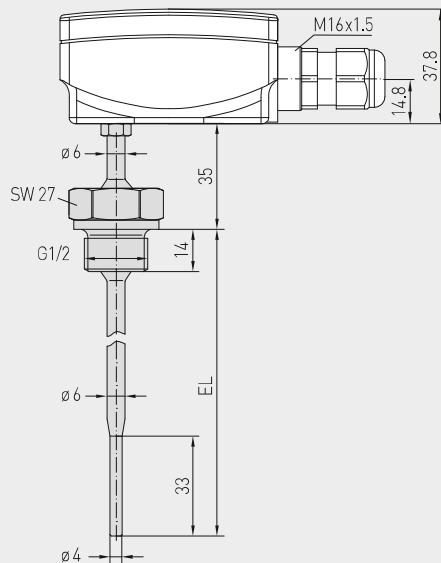
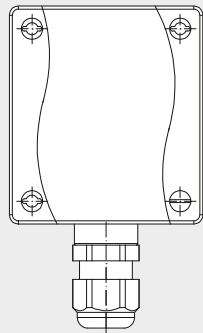
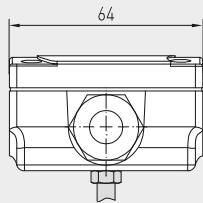


Dimensional drawing

ETF 7



M12 connector
(optional on request)



ETF 7

THERMASGARD® ETF 7

Screw-in / immersion temperature sensor with neck tube

Type / WG01	Sensor / Output	Item No.	Price
ETF7 Pt100 xx	Pt100		
ETF7 Pt100 100mm	Pt100 (according to DIN EN 60 751, class B)	1101-2080-1023-000	135,91 €
ETF7 Pt100 150mm	Pt100 (according to DIN EN 60 751, class B)	1101-2080-1033-000	137,26 €
ETF7 Pt100 250mm	Pt100 (according to DIN EN 60 751, class B)	1101-2080-1053-000	140,39 €
ETF7 Pt1000 xx	Pt1000		
ETF7 Pt1000 100mm	Pt1000 (according to DIN EN 60 751, class B)	1101-2080-5021-000	137,37 €
ETF7 Pt1000 150mm	Pt1000 (according to DIN EN 60 751, class B)	1101-2080-5031-000	138,27 €
ETF7 Pt1000 250mm	Pt1000 (according to DIN EN 60 751, class B)	1101-2080-5051-000	141,06 €
ETF7 Ni1000 xx	Ni1000		
ETF7 Ni1000 100mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-2084-2021-000	151,50 €
ETF7 Ni1000 150mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-2084-2031-000	152,96 €
ETF7 Ni1000 250mm	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-2084-2051-000	154,88 €
ETF7 Ni1000TK xx	Ni1000 TK5000		
ETF7 NiTK 100mm	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-2081-0021-000	142,81 €
ETF7 NiTK 150mm	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-2081-0031-000	143,19 €
ETF7 NiTK 250mm	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000	1101-2081-0051-000	144,51 €
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101	on request	

**Immersion / screw-in / duct temperature sensor,
with passive output**
TF 54
Basic unit

Resistance thermometer / temperature sensor **THERMASGARD® TF 54** with passive output, with connecting head made from aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101) and straight protective tube.

A basic unit in four variants through combination with accessories, eg, for robust applications with a separate immersion sleeve made from stainless steel.

The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, heating engineering, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, mechanical, apparatus and plant engineering and throughout the industrial sector.

TECHNICAL DATA

Measuring range:	-35...+180 °C (T _{max} NTC = +150 °C, T _{max} LM235Z = +125 °C)
Sensors / output:	see table, passive (Perfect Sensor Protection) (optionally also with two or other sensors)
Connection type:	2-wire connection (4-wire connection on PT100, optional on other sensors)
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)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm ² , via terminal screws on ceramic base
Cable connection:	TF 54 (standard) adjusting screw made of metal (M20 x 1.5) TF 54-KV (optional) cable gland, brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) TF 54-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar RAL 9006), ambient temperature -20...+100 °C
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Process connection:	by means of immersion sleeve or mounting flange (accessories)
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) TF 54 IP 65 (according to EN 60 529) TF 54-KV / TF 54-Q
ACCESSORIES	(see table)
TH-ms / xx	Immersion sleeve, brass, nickel-plated, Ø = 8 mm, T _{max} = +150 °C, p _{max} = 10 bar
TH-VA / xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar
TH-VA / xx / 90	Immersion sleeve, stainless steel, V4A (1.4571), with neck tube (90 mm), Ø = 8 mm, T _{max} = +600 °C, p _{max} = 40 bar
MF-06-M	Mounting flange, metal, galvanised steel, Ø = 32 mm, Ø = 6.3 mm tube gland, T _{max} = +700 °C


 2-wire
connection

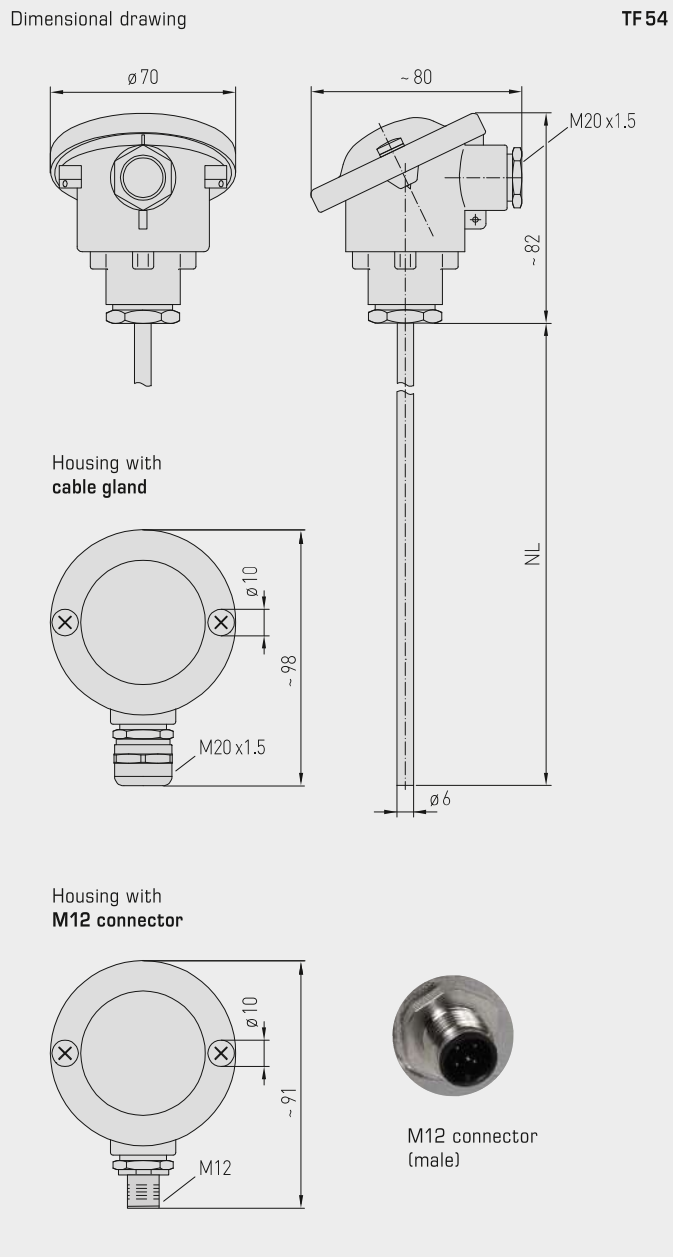
 4-wire
connection




S+S REGELTECHNIK

THERMASGARD® TF 54

Immersion / screw-in / duct temperature sensor,
with passive output



High-performance encapsulation against
vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

TF 54
Standard
(IP 54)



TF 54 - KV
with cable gland
(IP 65)



TF 54 - Q
with M12 connector
(IP 65)



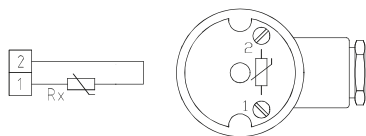
Immersion / screw-in / duct temperature sensor,
with passive output

S+S REGELTECHNIK

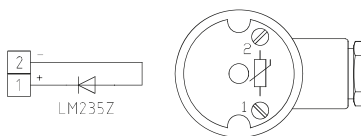
TM 54
standard
(IP 54)



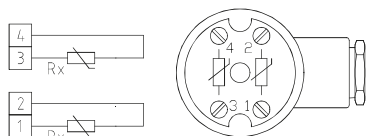
1x two-wire connection
standard



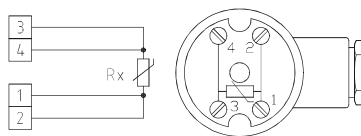
1x two-wire connection
LM235Z (KP 10)



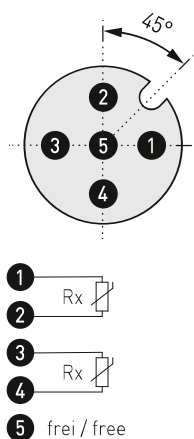
2x two-wire connection
(optional)



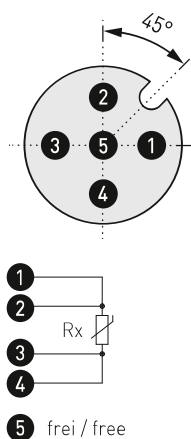
1x four-wire connection
(Pt100 / optional)



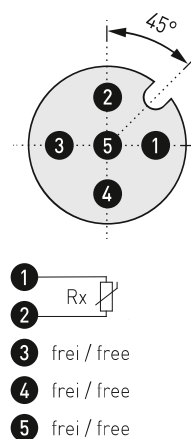
2x two-wire connection
pin assignment (M12)



1x four-wire connection
pin assignment (M12)



1x two-wire connection
pin assignment (M12)



THERMASGARD® TF 54

Temperature sensor
(Basic unit)

Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
TF 54 Pt100 xx	Pt100 (according to DIN EN 60751, class B)		IP 54, 4-wire	
TF54 Pt100 50mm	Pt100	50 mm	1101-7050-1013-000	63,22 €
TF54 Pt100 100mm	Pt100	100 mm	1101-7050-1023-000	64,75 €
TF54 Pt100 150mm	Pt100	150 mm	1101-7050-1033-000	66,14 €
TF54 Pt100 200mm	Pt100	200 mm	1101-7050-1043-000	68,69 €
TF54 Pt100 250mm	Pt100	250 mm	1101-7050-1053-000	68,98 €
TF54 Pt100 300mm	Pt100	300 mm	1101-7050-1063-000	69,23 €
TF54 Pt100 400mm	Pt100	400 mm	1101-7050-1083-000	70,19 €
TF 54 Pt1000 xx	Pt1000 (according to DIN EN 60751, class B)		IP 54, 2-wire	
TF54 Pt1000 50mm	Pt1000	50 mm	1101-7050-5011-000	63,22 €
TF54 Pt1000 100mm	Pt1000	100 mm	1101-7050-5021-000	64,75 €
TF54 Pt1000 150mm	Pt1000	150 mm	1101-7050-5031-000	66,14 €
TF54 Pt1000 200mm	Pt1000	200 mm	1101-7050-5041-000	68,69 €
TF54 Pt1000 250mm	Pt1000	250 mm	1101-7050-5051-000	69,04 €
TF54 Pt1000 300mm	Pt1000	300 mm	1101-7050-5061-000	69,23 €
TF54 Pt1000 400mm	Pt1000	400 mm	1101-7050-5081-000	70,19 €

Continued on next page...



THERMASGARD® TF 54		Temperature sensor (Basic unit)		
Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
TF 54 Ni1000 xx	Ni 1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)		IP 54, 2-wire	
TF54 Ni1000 50mm	Ni1000	50 mm	1101-7050-9011-000	64,31 €
TF54 Ni1000 100mm	Ni1000	100 mm	1101-7050-9021-000	66,15 €
TF54 Ni1000 150mm	Ni1000	150 mm	1101-7050-9031-000	67,22 €
TF54 Ni1000 200mm	Ni1000	200 mm	1101-7050-9041-000	68,74 €
TF54 Ni1000 250mm	Ni1000	250 mm	1101-7050-9051-000	69,17 €
TF54 Ni1000 300mm	Ni1000	300 mm	1101-7050-9061-000	69,42 €
TF54 Ni1000 400mm	Ni1000	400 mm	1101-7050-9081-000	70,45 €
TF 54 Ni1000TK xx	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000		IP 54, 2-wire	
TF54 NiTK 50mm	Ni1000 TK5000	50 mm	1101-7051-0011-000	64,57 €
TF54 NiTK 100mm	Ni1000 TK5000	100 mm	1101-7051-0021-000	66,93 €
TF54 NiTK 150mm	Ni1000 TK5000	150 mm	1101-7051-0031-000	68,05 €
TF54 NiTK 200mm	Ni1000 TK5000	200 mm	1101-7051-0041-000	68,99 €
TF54 NiTK 250mm	Ni1000 TK5000	250 mm	1101-7051-0051-000	69,42 €
TF54 NiTK 300mm	Ni1000 TK5000	300 mm	1101-7051-0061-000	69,64 €
TF54 NiTK 400mm	Ni1000 TK5000	400 mm	1101-7051-0081-000	70,69 €
TF 54 LM235Z xx	LM235Z (TCR = 10 mV / K; 2,73 V at 0 °C), KP10		IP 54, 2-wire	
TF54 LM235Z 50mm	LM235Z	50 mm	1101-7052-1011-000	64,52 €
TF54 LM235Z 100mm	LM235Z	100 mm	1101-7052-1021-000	64,93 €
TF54 LM235Z 150mm	LM235Z	150 mm	1101-7052-1031-000	65,05 €
TF54 LM235Z 200mm	LM235Z	200 mm	1101-7052-1041-000	65,78 €
TF54 LM235Z 250mm	LM235Z	250 mm	1101-7052-1051-000	67,48 €
TF54 LM235Z 300mm	LM235Z	300 mm	1101-7052-1061-000	68,03 €
TF54 LM235Z 400mm	LM235Z	400 mm	1101-7052-1081-000	69,17 €
TF 54 NTC 1,8K xx	NTC 1,8K		IP 54, 2-wire	
TF54 NTC1,8K 50mm	NTC 1,8K	50 mm	1101-7051-2011-000	64,21 €
TF54 NTC1,8K 100mm	NTC 1,8K	100 mm	1101-7051-2021-000	68,03 €
TF54 NTC1,8K 150mm	NTC 1,8K	150 mm	1101-7051-2031-000	68,37 €
TF54 NTC1,8K 200mm	NTC 1,8K	200 mm	1101-7051-2041-000	68,86 €
TF54 NTC1,8K 250mm	NTC 1,8K	250 mm	1101-7051-2051-000	70,02 €
TF54 NTC1,8K 300mm	NTC 1,8K	300 mm	1101-7051-2061-000	70,69 €
TF54 NTC1,8K 400mm	NTC 1,8K	400 mm	1101-7051-2081-000	70,95 €
TF 54 NTC10K xx	NTC 10K		IP 54, 2-wire	
TF54 NTC10K 50mm	NTC 10K	50 mm	1101-7051-5011-000	64,21 €
TF54 NTC10K 100mm	NTC 10K	100 mm	1101-7051-5021-000	68,03 €
TF54 NTC10K 150mm	NTC 10K	150 mm	1101-7051-5031-000	68,37 €
TF54 NTC10K 200mm	NTC 10K	200 mm	1101-7051-5041-000	68,86 €
TF54 NTC10K 250mm	NTC 10K	250 mm	1101-7051-5051-000	70,02 €
TF54 NTC10K 300mm	NTC 10K	300 mm	1101-7051-5061-000	70,69 €
TF54 NTC10K 400mm	NTC 10K	400 mm	1101-7051-5081-000	70,95 €
TF 54 NTC20K xx	NTC 20K		IP 54, 2-wire	
TF54 NTC20K 50mm	NTC 20K	50 mm	1101-7051-6011-000	64,21 €
TF54 NTC20K 100mm	NTC 20K	100 mm	1101-7051-6021-000	68,03 €
TF54 NTC20K 150mm	NTC 20K	150 mm	1101-7051-6031-000	68,37 €
TF54 NTC20K 200mm	NTC 20K	200 mm	1101-7051-6041-000	68,86 €
TF54 NTC20K 250mm	NTC 20K	250 mm	1101-7051-6051-000	70,02 €
TF54 NTC20K 300mm	NTC 20K	300 mm	1101-7051-6061-000	70,69 €
TF54 NTC20K 400mm	NTC 20K	400 mm	1101-7051-6081-000	70,95 €
Housing variant:	equipped as standard with pressure screw (IP 54), optional housing variants with cable gland (IP 65) or M12 connector (IP 65) see the next page!			
Extra charge:	optionally also with two or other sensors		on request	

Immersion / screw-in / duct temperature sensor,
with passive output

S+S REGELTECHNIK

TF 54 - Q
with M12 connector
(IP65)



THERMASGARD® TF 54 - Q

Temperature sensor
(Basic unit with M12 connector)

Type / WG03	Sensor / Output	Installation length (EL)	Q	Item No.	Price
TF 54 Pt100 xx Q	Pt100 (according to DIN EN 60751, class B)		●	IP65, 4-wire	
TF54 Pt100 50mm Q	Pt100	50 mm	●	2Z01-4111-0100-011	103,14 €
TF54 Pt100 100mm Q	Pt100	100 mm	●	2Z01-4111-0100-021	104,67 €
TF54 Pt100 150mm Q	Pt100	150 mm	●	2Z01-4111-0100-031	106,08 €
TF54 Pt100 200mm Q	Pt100	200 mm	●	2Z01-4111-0100-041	108,60 €
TF54 Pt100 250mm Q	Pt100	250 mm	●	2Z01-4111-0100-051	108,91 €
TF54 Pt100 300mm Q	Pt100	300 mm	●	2Z01-4111-0100-061	109,16 €
TF54 Pt100 400mm Q	Pt100	400 mm	●	2Z01-4111-0100-081	110,13 €
TF 54 Pt1000 xx Q	Pt1000 (according to DIN EN 60751, class B)		●	IP65, 2-wire	
TF54 Pt1000 50mm Q	Pt1000	50 mm	●	2Z05-4111-0100-011	103,14 €
TF54 Pt1000 100mm Q	Pt1000	100 mm	●	2Z05-4111-0100-021	104,67 €
TF54 Pt1000 150mm Q	Pt1000	150 mm	●	2Z05-4111-0100-031	106,08 €
TF54 Pt1000 200mm Q	Pt1000	200 mm	●	2Z05-4111-0100-041	108,60 €
TF54 Pt1000 250mm Q	Pt1000	250 mm	●	2Z05-4111-0100-051	108,91 €
TF54 Pt1000 300mm Q	Pt1000	300 mm	●	2Z05-4111-0100-061	109,16 €
TF54 Pt1000 400mm Q	Pt1000	400 mm	●	2Z05-4111-0100-081	110,13 €
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:	optionally also with two or other sensors				on request

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!



Immersion / screw-in / duct temperature sensor,
with passive output

TF54 - KV
with cable gland
(IP 65)



THERMASGARD® TF 54 - KV		Temperature sensor (Basic unit with cable gland)		
Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
TF54 Pt100 xx KV	Pt100 (according to DIN EN 60751, class B)		IP65, 4-wire	
TF54 Pt100 50mm KV	Pt100	50 mm	1101-7070-1013-000	72,20 €
TF54 Pt100 100mm KV	Pt100	100 mm	1101-7070-1023-000	73,72 €
TF54 Pt100 150mm KV	Pt100	150 mm	1101-7070-1033-000	75,11 €
TF54 Pt100 200mm KV	Pt100	200 mm	1101-7070-1043-000	74,55 €
TF54 Pt100 250mm KV	Pt100	250 mm	1101-7070-1053-000	77,97 €
TF54 Pt100 300mm KV	Pt100	300 mm	1101-7070-1063-000	78,20 €
TF54 Pt100 400mm KV	Pt100	400 mm	1101-7070-1083-000	79,19 €
TF54 Pt1000 xx KV	Pt1000 (according to DIN EN 60751, class B)		IP65, 2-wire	
TF54 Pt1000 50mm KV	Pt1000	50 mm	1101-7070-5011-000	72,21 €
TF54 Pt1000 100mm KV	Pt1000	100 mm	1101-7070-5021-000	73,72 €
TF54 Pt1000 150mm KV	Pt1000	150 mm	1101-7070-5031-000	72,03 €
TF54 Pt1000 200mm KV	Pt1000	200 mm	1101-7070-5041-000	77,67 €
TF54 Pt1000 250mm KV	Pt1000	250 mm	1101-7070-5051-000	77,98 €
TF54 Pt1000 300mm KV	Pt1000	300 mm	1101-7070-5061-000	75,30 €
TF54 Pt1000 400mm KV	Pt1000	400 mm	1101-7070-5081-000	79,19 €
Housing variant "KV":		Cable connection with cable gland		
Extra charge:	optionally also with two or other sensors		on request	

Immersion / screw-in / duct temperature sensor,
with passive output

S+S REGELTECHNIK

One basic device in four variants ...



**TF 54 +
TH-ms/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
brass, nickel-plated



**TF 54 +
TH-VA/xx**

Immersion / screw-in
temperature sensor
with immersion sleeve,
stainless steel, V4A



**TF 54 +
TH-VA/xx/90**

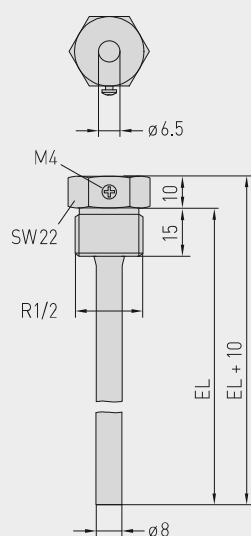
Immersion / screw-in
temperature sensor with
immersion sleeve with neck
tube, stainless steel, V4A



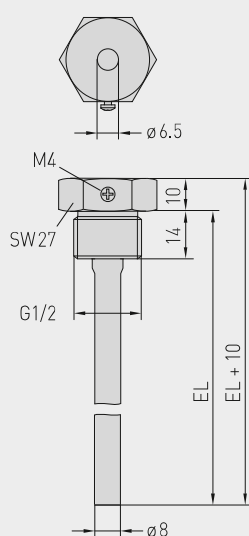
**TF 54 +
MF-06-M**

Duct temperature sensor
with mounting flange, metal

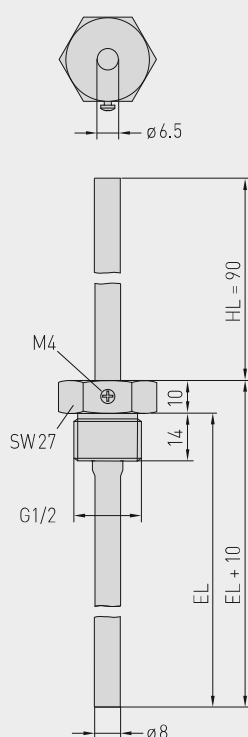
Dimensional drawing
TH-ms/xx



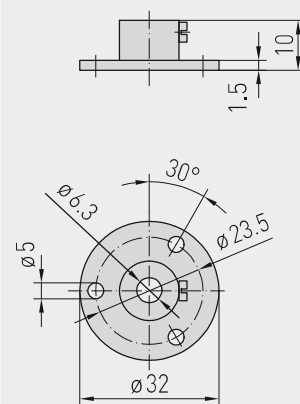
Dimensional drawing
TH-VA/xx



Dimensional drawing
TH-VA/xx/90



Dimensional drawing
MF-06-M





S+S REGELTECHNIK

THERMASGARD® TF 54

Immersion / screw-in / duct temperature sensor,
with passive output

...through combination with accessories:



TH -ms/xx

Immersion sleeve,
brass, nickel-plated,
thread-sealing, conical,
according to DIN 10226



TH -VA/xx

Immersion sleeve,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



TH -VA/xx/90

Immersion sleeve with neck tube,
stainless steel, V4A,
flat-sealing, cylindrical,
according to DIN 228



MF-06-M

Mounting flange,
metal

THERMASGARD® TH						Immersion sleeve Ø 8 mm (accessories)	
Type / WG01	p _{max} (static)	T _{max}	Inserted Length (EL)		Item No.	Price	
TH- <i>ms</i> / <i>xx</i>	Brass nickel-plated			without neck tube			
TH-MS 50MM	10 bar	+150 °C	50 mm		7100-0011-0010-001	8,87 €	
TH-MS 100MM	10 bar	+150 °C	100 mm		7100-0011-0020-001	10,10 €	
TH-MS 150MM	10 bar	+150 °C	150 mm		7100-0011-0030-001	10,67 €	
TH-MS 200MM	10 bar	+150 °C	200 mm		7100-0011-0040-001	11,01 €	
TH-MS 250MM	10 bar	+150 °C	250 mm		7100-0011-0050-001	12,75 €	
TH-MS 300MM	10 bar	+150 °C	300 mm		7100-0011-0060-001	13,10 €	
TH-MS 350MM	10 bar	+150 °C	350 mm		7100-0011-0070-001	13,21 €	
TH-MS 400MM	10 bar	+150 °C	400 mm		7100-0011-0080-001	13,33 €	
TH- <i>VA</i> / <i>xx</i>	Stainless steel, V4A (1.4571)			without neck tube			
TH-VA 50MM	40 bar	+600 °C	50 mm		7100-0012-0010-001	19,31 €	
TH-VA 100MM	40 bar	+600 °C	100 mm		7100-0012-0020-001	21,34 €	
TH-VA 150MM	40 bar	+600 °C	150 mm		7100-0012-0030-001	22,93 €	
TH-VA 200MM	40 bar	+600 °C	200 mm		7100-0012-0040-001	24,17 €	
TH-VA 250MM	40 bar	+600 °C	250 mm		7100-0012-0050-001	30,05 €	
TH-VA 300MM	40 bar	+600 °C	300 mm		7100-0012-0060-001	31,40 €	
TH-VA 350MM	40 bar	+600 °C	350 mm		7100-0012-0070-001	31,61 €	
TH-VA 400MM	40 bar	+600 °C	400 mm		7100-0012-0080-001	32,17 €	
TH- <i>VA</i> / <i>xx</i> / 90	Stainless steel, V4A (1.4571)			with neck tube (90 mm)			
TH-VA 50/90MM	40 bar	+600 °C	50 mm		7100-0012-2010-001	27,66 €	
TH-VA 100/90MM	40 bar	+600 °C	100 mm		7100-0012-2020-001	28,90 €	
TH-VA 150/90MM	40 bar	+600 °C	150 mm		7100-0012-2030-001	30,32 €	
TH-VA 200/90MM	40 bar	+600 °C	200 mm		7100-0012-2040-001	31,61 €	
TH-VA 250/90MM	40 bar	+600 °C	250 mm		7100-0012-2050-001	33,13 €	
TH-VA 300/90MM	40 bar	+600 °C	300 mm		7100-0012-2060-001	35,91 €	
Note:	inner diameter of socket 6.5 mm For further information see last chapter!						
Mounting flange (accessories)							
Type / WG01			T _{max}	Item No.		Price	
MF							
MF-06-M	Mounting flange, metal (galvanised steel) Ø 32 mm, tube gland Ø 6.3 mm		+700 °C	7100-0030-5000-100		9,10 €	
Note:	For further information see last chapter!						

Screw-in / immersion temperature sensor with neck tube, with passive output

ETF 6
standard

Screw-in resistance thermometer / temperature sensor with neck tube

THERMASGARD® ETF 6 with passive output, with connecting head made from aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101) and straight protective tube.

The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, tanks or storage systems, preferably where tubes or tanks must be isolated.



TECHNICAL DATA

Measuring range:	–35...+180 °C (T _{max} NTC = +150 °C, T _{max} LM235Z = +125 °C)
Sensors / output:	see table, passive (Perfect Sensor Protection) (optionally also with two or other sensors)
Connection type:	2-wire connection (4-wire connection on PT100, optional on other sensors)
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)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm ² , via terminal screws on ceramic base
Cable connection:	ETF 6 (standard) adjusting screw made of metal (M20 x 1.5) ETF 6-KV (optional) cable gland, brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) ETF 6-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar RAL 9006), ambient temperature –20...+100 °C
Protective tube:	stainless steel V4A (1.4571), G ½" straight pipe thread, wrench size 27 mm, p _{max} = 40 bar, Ø = 8 mm length of neck tube (HL) = 80 mm inserted length (EL) = 100 - 400 mm (see table)
Process connection:	screwed socket with G ½"
Humidity:	< 95% r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) ETF 6 IP 65 (according to EN 60 529) ETF 6-KV / ETF 6-Q



S+S REGELTECHNIK

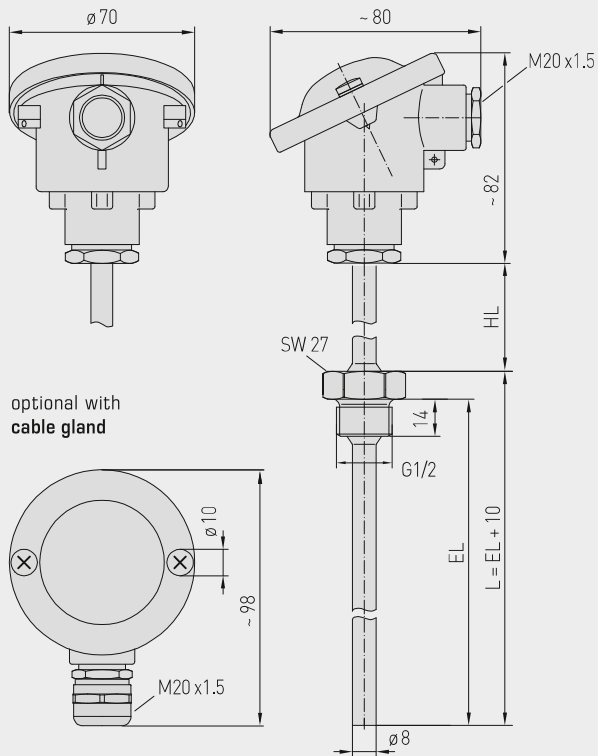
THERMASGARD® ETF 6

Screw-in/immersion temperature sensor with neck tube,
with passive output

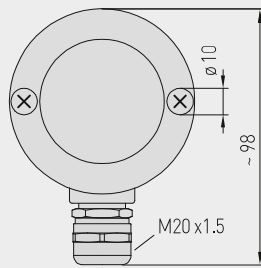


Dimensional drawing

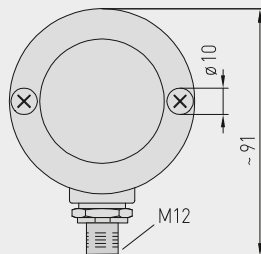
ETF 6



optional with
cable gland



optional with
M12 connector



M12 connector
(optional on request)

High-performance encapsulation against
vibration, mechanical stress and humidity



PS-PROTECTION

PERFECT SENSOR PROTECTION

ETF 6
standard
(IP 54)



ETF 6 - KV
with cable gland
(IP 65)

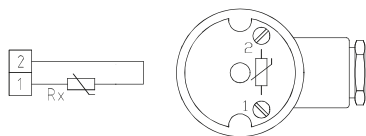


ETF 6 - Q
with M12 connector
(IP 65)

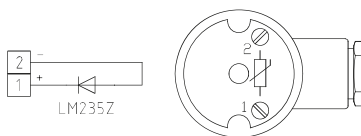


Screw-in / immersion temperature sensor with neck tube,
with passive output

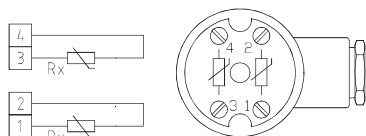
1x two-wire connection
standard



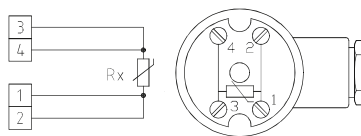
1x two-wire connection
LM235Z (KP 10)



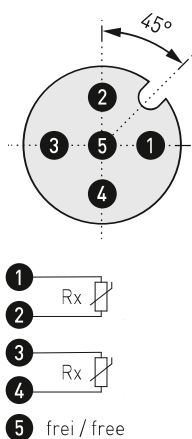
2x two-wire connection
(optional)



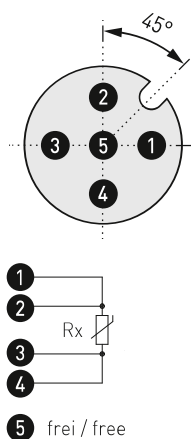
1x four-wire connection
(Pt100 / optional)



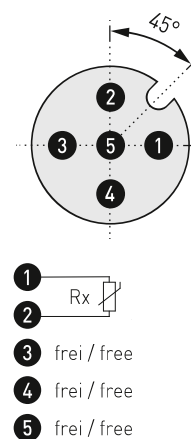
2x two-wire connection
pin assignment (M12)



1x four-wire connection
pin assignment (M12)



1x two-wire connection
pin assignment (M12)



ETF 6
standard
(IP 54)

THERMASGARD® ETF 6

Screw-in / immersion temperature sensor with neck tube
(standard)

Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
ETF6 Pt100 xx	Pt100 (according to DIN EN 60751, class B)		IP 54, 4-wire	
ETF6 Pt100 100/80	Pt100	100 mm	1101-2070-1023-000	80,64 €
ETF6 Pt100 150/80	Pt100	150 mm	1101-2070-1033-000	84,88 €
ETF6 Pt100 200/80	Pt100	200 mm	1101-2070-1043-000	87,29 €
ETF6 Pt100 250/80	Pt100	250 mm	1101-2070-1053-000	89,60 €
ETF6 Pt100 400/80	Pt100	400 mm	1101-2070-1083-000	92,40 €
ETF6 Pt1000 xx	Pt1000 (according to DIN EN 60751, class B)		IP 54, 2-wire	
ETF6 Pt1000 100/80	Pt1000	100 mm	1101-2070-5021-000	82,57 €
ETF6 Pt1000 150/80	Pt1000	150 mm	1101-2070-5031-000	87,29 €
ETF6 Pt1000 200/80	Pt1000	200 mm	1101-2070-5041-000	88,68 €
ETF6 Pt1000 250/80	Pt1000	250 mm	1101-2070-5051-000	89,73 €
ETF6 Pt1000 400/80	Pt1000	400 mm	1101-2070-5081-000	93,29 €

Continued on next page...



THERMASGARD® ETF 6		Screw-in / immersion temperature sensor with neck tube (standard)		
Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
ETF6 Ni1000 xx	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)		IP54, 2-wire	
ETF6 Ni1000 100/80	Ni1000	100 mm	1101-2070-9021-000	85,70 €
ETF6 Ni1000 150/80	Ni1000	150 mm	1101-2070-9031-000	87,22 €
ETF6 Ni1000 200/80	Ni1000	200 mm	1101-2070-9041-000	89,58 €
ETF6 Ni1000 250/80	Ni1000	250 mm	1101-2070-9051-000	90,04 €
ETF6 Ni1000 400/80	Ni1000	400 mm	1101-2070-9081-000	94,58 €
ETF6 Ni1000TK xx	Ni1000 TK5000 (TCR = 5000 ppm / K), LG-Ni1000		IP54, 2-wire	
ETF6 NiTK 100/80	Ni1000 TK5000	100 mm	1101-2071-0021-000	86,09 €
ETF6 NiTK 150/80	Ni1000 TK5000	150 mm	1101-2071-0031-000	88,11 €
ETF6 NiTK 200/80	Ni1000 TK5000	200 mm	1101-2071-0041-000	90,40 €
ETF6 NiTK 250/80	Ni1000 TK5000	250 mm	1101-2071-0051-000	93,17 €
ETF6 NiTK 400/80	Ni1000 TK5000	400 mm	1101-2071-0081-000	95,54 €
ETF6 LM235Z xx	LM235Z (TCR = 10 mV / K; 2,73 V at 0 °C), KP10		IP54, 2-wire	
ETF6 LM235Z 100/80	LM235Z	100 mm	1101-2072-1021-000	81,85 €
ETF6 LM235Z 150/80	LM235Z	150 mm	1101-2072-1031-000	85,47 €
ETF6 LM235Z 200/80	LM235Z	200 mm	1101-2072-1041-000	87,29 €
ETF6 LM235Z 250/80	LM235Z	250 mm	1101-2072-1051-000	88,51 €
ETF6 LM235Z 400/80	LM235Z	400 mm	1101-2072-1081-000	94,09 €
ETF6 NTC 1,8K xx	NTC 1,8K		IP54, 2-wire	
ETF6 NTC1,8K 100/80	NTC 1,8K	100 mm	1101-2071-2021-000	85,84 €
ETF6 NTC1,8K 150/80	NTC 1,8K	150 mm	1101-2071-2031-000	87,12 €
ETF6 NTC1,8K 200/80	NTC 1,8K	200 mm	1101-2071-2041-000	88,45 €
ETF6 NTC1,8K 250/80	NTC 1,8K	250 mm	1101-2071-2051-000	92,26 €
ETF6 NTC1,8K 400/80	NTC 1,8K	400 mm	1101-2071-2081-000	94,87 €
ETF6 NTC10K xx	NTC 10K		IP54, 2-wire	
ETF6 NTC10K 100/80	NTC 10K	100 mm	1101-2071-5021-000	85,84 €
ETF6 NTC10K 150/80	NTC 10K	150 mm	1101-2071-5031-000	87,12 €
ETF6 NTC10K 200/80	NTC 10K	200 mm	1101-2071-5041-000	88,45 €
ETF6 NTC10K 250/80	NTC 10K	250 mm	1101-2071-5051-000	92,26 €
ETF6 NTC10K 400/80	NTC 10K	400 mm	1101-2071-5081-000	94,87 €
ETF6 NTC20K xx	NTC 20K		IP54, 2-wire	
ETF6 NTC20K 100/80	NTC 20K	100 mm	1101-2071-6021-000	85,84 €
ETF6 NTC20K 150/80	NTC 20K	150 mm	1101-2071-6031-000	87,12 €
ETF6 NTC20K 200/80	NTC 20K	200 mm	1101-2071-6041-000	88,45 €
ETF6 NTC20K 250/80	NTC 20K	250 mm	1101-2071-6051-000	92,26 €
ETF6 NTC20K 400/80	NTC 20K	400 mm	1101-2071-6081-000	94,87 €
Housing variant:	equipped as standard with pressure screw (IP54), optional housing variants with cable gland (IP65) or M12 connector (IP65) see the next page!			
Extra charge:	optionally also with two or other sensors		on request	

Screw-in / immersion temperature sensor with neck tube,
with passive output

ETF6-Q
with M12 connector
(IP65)



THERMASGARD® ETF 6-Q		Screw-in / immersion temperature sensor with neck tube (with M12 connector)			
Type / WG03	Sensor / Output	Installation length (EL)	Q	Item No.	Price
ETF6 Pt100 xx Q		Pt100 (according to DIN EN 60751, class B)		IP65, 4-wire	
ETF6 Pt100 100/80mm Q	Pt100	100 mm	●	2Z01-4121-0100-041	120,57 €
ETF6 Pt100 150/80mm Q	Pt100	150 mm	●	2Z01-4121-0100-051	124,80 €
ETF6 Pt100 200/80mm Q	Pt100	200 mm	●	2Z01-4121-0100-061	127,22 €
ETF6 Pt100 250/80mm Q	Pt100	250 mm	●	2Z01-4121-0100-071	129,52 €
ETF6 Pt100 400/80mm Q	Pt100	400 mm	●	2Z01-4121-0100-101	132,42 €
ETF6 Pt1000 xx Q		Pt1000 (according to DIN EN 60751, class B)		IP65, 2-wire	
ETF6 Pt1000 100/80mm Q	Pt1000	100 mm	●	2Z05-4121-0100-041	120,57 €
ETF6 Pt1000 150/80mm Q	Pt1000	150 mm	●	2Z05-4121-0100-051	124,80 €
ETF6 Pt1000 200/80mm Q	Pt1000	200 mm	●	2Z05-4121-0100-061	127,22 €
ETF6 Pt1000 250/80mm Q	Pt1000	250 mm	●	2Z05-4121-0100-071	129,52 €
ETF6 Pt1000 400/80mm Q	Pt1000	400 mm	●	2Z05-4121-0100-101	132,32 €
Housing variant "Q":		Cable connection with M12 connector (male, 5-pin, A-code)			
Extra charge:		optionally also with two or other sensors		on request	

ACCESSORIES	
Special accessories for M12 connector see chapter Accessories!	



Screw-in / immersion temperature sensor with neck tube,
with passive output

ETF6-KV
with cable gland
(IP 65)



THERMASGARD® ETF 6 - KV		Screw-in / immersion temperature sensor with neck tube (with cable gland)		
Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
ETF6 Pt100 xx KV	Pt100 (according to DIN EN 60751, class B)		IP65, 4-wire	
ETF6 Pt100 100/80mm KV	Pt100	100 mm	1101-20C0-1023-000	89,63 €
ETF6 Pt100 150/80mm KV	Pt100	150 mm	1101-20C0-1033-000	93,86 €
ETF6 Pt100 200/80mm KV	Pt100	200 mm	1101-20C0-1043-000	96,28 €
ETF6 Pt100 250/80mm KV	Pt100	250 mm	1101-20C0-1053-000	98,58 €
ETF6 Pt100 400/80mm KV	Pt100	400 mm	1101-20C0-1083-000	101,38 €
ETF6 Pt1000 xx KV	Pt1000 (according to DIN EN 60751, class B)		IP65, 2-wire	
ETF6 Pt1000 100/80mm KV	Pt1000	100 mm	1101-20C0-5021-000	91,55 €
ETF6 Pt1000 150/80mm KV	Pt1000	150 mm	1101-20C0-5031-000	96,28 €
ETF6 Pt1000 200/80mm KV	Pt1000	200 mm	1101-20C0-5041-000	97,66 €
ETF6 Pt1000 250/80mm KV	Pt1000	250 mm	1101-20C0-5051-000	98,71 €
ETF6 Pt1000 400/80mm KV	Pt1000	400 mm	1101-20C0-5081-000	102,28 €
Housing variant "KV":		Cable connection with cable gland		
Extra charge:		optionally also with two or other sensors		on request

Duct temperature sensors / smoke gas temperature sensors, including mounting flange, with passive output

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Resistance thermometer / smoke gas temperature sensor **THERMASGARD® RGTF 1** with passive output, with connecting head made from aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101) and straight protective tube, incl. mounting flange.

The duct sensor is used to detect relatively high temperatures in gaseous media, eg, for exhaust air and smoke gas temperature measurement.

RGTF 1
standard

TECHNICAL DATA

Measuring range:	-35...+600 °C (extended range limits from -100...+750 °C optional)
Sensor / output:	Pt100 / Pt1000 (according to DIN EN 60 751, class B) (Perfect Sensor Protection)
Connection type:	2-wire connection (Pt1000) 4-wire connection (Pt100 / Pt1000 optional)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm ² via terminal screws on ceramic base
Cable connection:	RGTF 1 (standard) adjusting screw made of metal (M20 x 1.5); RGTF 1-KV (optional) cable gland, brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) RGTF 1-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature -20...+100 °C
Protective tube:	stainless steel V4A (1.4571), Ø = 8 mm inserted length (EL) = 200 - 500 mm (see table)
Process connection:	by mounting flange, stainless steel V2A (1.4305) (included in the scope of delivery)
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) RGTF 1 IP 65 (according to EN 60 529) RGTF1-KV / RGTF1-Q



RGTF 1
Measuring insert with
ceramic tubelet



S+S REGELTECHNIK

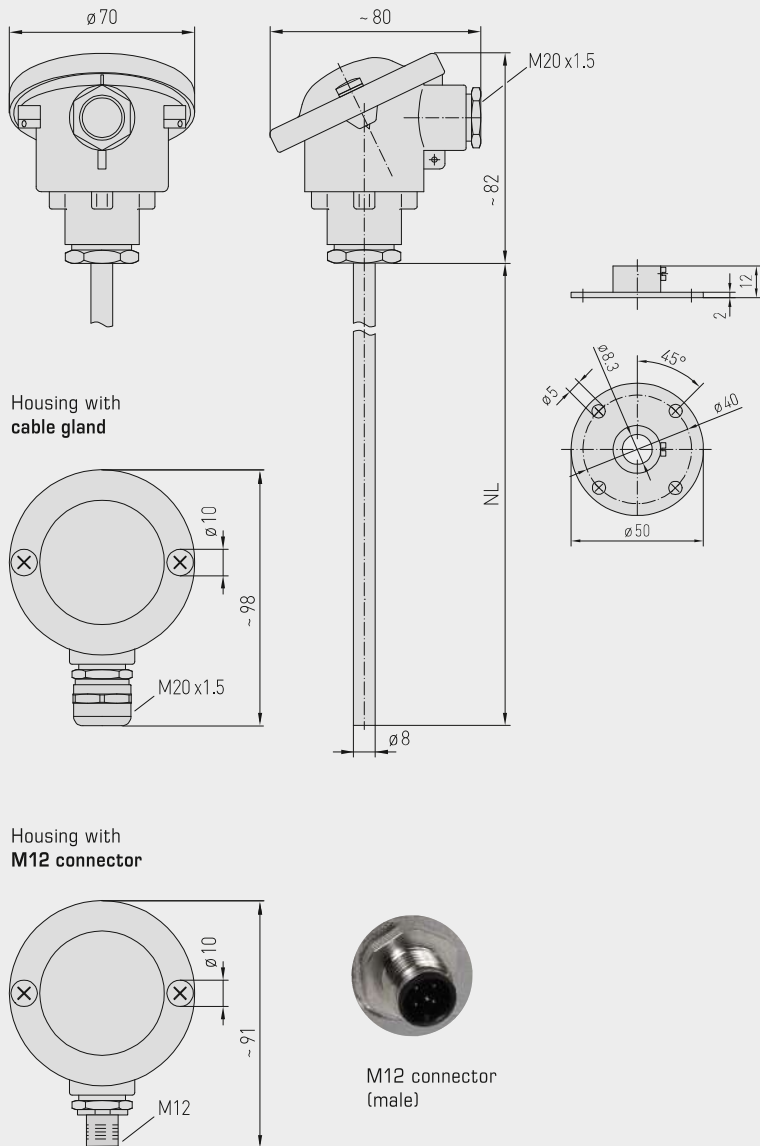
THERMASGARD® RGTF 1

Duct temperature sensors / smoke gas temperature sensors,
including mounting flange, with passive output



Dimensional drawing

RGTF 1



RGTF 1
standard
(IP 54)



RGTF 1 - KV
with cable gland
(IP 65)



RGTF 1 - Q
with M12 connector
(IP 65)



High-performance encapsulation against
vibration, mechanical stress and humidity



PS-PROTECTION

PERFECT SENSOR PROTECTION

Duct temperature sensors / smoke gas temperature sensors,
including mounting flange, with passive output

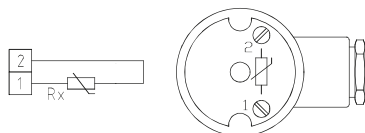
2-wire connection
(Pt1000)



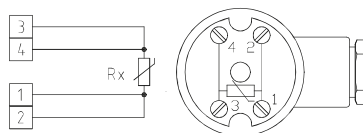
4-wire connection
(Pt100 / Pt1000 optional)



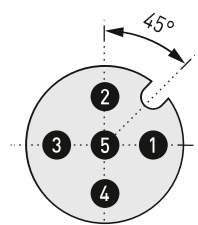
1x two-wire connection
(Pt1000)



1x four-wire connection
(Pt100 / Pt1000 optional)

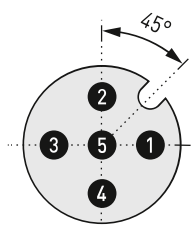


1x two-wire connection
pin assignment (M12)



- 1 Rx
- 2 Rx
- 3 frei / free
- 4 frei / free
- 5 frei / free

1x four-wire connection
pin assignment (M12)



- 1 Rx
- 2 Rx
- 3 Rx
- 4 Rx
- 5 frei / free



S+S REGELTECHNIK

THERMASGARD® RGTF 1

Duct temperature sensors / smoke gas temperature sensors,
including mounting flange, with passive output

RGTF 1
standard
(IP 54)



THERMASGARD® RGTF 1		Duct temperature sensors / smoke gas temperature sensors, including mounting flange (Standard)		
Type / WG01	Sensor / Output	Installation length (EL)	Item No.	Price
RGTF1 Pt100 xx	Pt100 (according to DIN EN 60751, class B)		IP54, 4-wire	
RGTF1 Pt100 200mm	Pt100	200 mm	1101-3040-1043-000	175,68 €
RGTF1 Pt100 250mm	Pt100	250 mm	1101-3040-1053-000	177,51 €
RGTF1 Pt100 300mm	Pt100	300 mm	1101-3040-1063-000	181,50 €
RGTF1 Pt100 500mm	Pt100	500 mm	1101-3040-1103-000	195,58 €
RGTF1 Pt1000 xx	Pt1000 (according to DIN EN 60751, class B)		IP54, 2-wire	
RGTF1 Pt1000 200mm	Pt1000	200 mm	1101-3040-5041-000	169,73 €
RGTF1 Pt1000 250mm	Pt1000	250 mm	1101-3040-5051-000	171,56 €
RGTF1 Pt1000 300mm	Pt1000	300 mm	1101-3040-5061-000	175,55 €
RGTF1 Pt1000 500mm	Pt1000	500 mm	1101-3040-5101-000	180,76 €
Housing variant:	equipped as standard with pressure screw (IP54), optional housing variants with cable gland (IP65) or M12 connector (IP65) see the next page!			
Extra charge:	other measuring ranges optional		on request	

Duct temperature sensors / smoke gas temperature sensors,
 including mounting flange, with passive output

RGTF 1 - Q
 with M12 connector
 (IP65)



THERMASGARD® RGTF 1 - Q		Duct temperature sensors / smoke gas temperature sensors, including mounting flange (with M12 connector)				
Type / WG03	Sensor / Output	Installation length (EL)	Q ●	Item No.	Price	
RGTF1 Pt100 xx Q	Pt100 (according to DIN EN 60751, class B)			IP65, 4-wire		
RGTF1 Pt100 200mm Q	Pt100	200 mm	●	2Z01-4131-0100-011	209,56 €	
RGTF1 Pt100 250mm Q	Pt100	250 mm	●	2Z01-4131-0100-021	211,49 €	
RGTF1 Pt100 300mm Q	Pt100	300 mm	●	2Z01-4131-0100-031	215,47 €	
RGTF1 Pt100 500mm Q	Pt100	500 mm	●	2Z01-4131-0100-041	220,70 €	
RGTF1 Pt1000 xx Q	Pt1000 (according to DIN EN 60751, class B)			IP65, 2-wire		
RGTF1 Pt1000 200mm Q	Pt1000	200 mm	●	2Z05-4131-0100-011	209,56 €	
RGTF1 Pt1000 250mm Q	Pt1000	250 mm	●	2Z05-4131-0100-021	211,49 €	
RGTF1 Pt1000 300mm Q	Pt1000	300 mm	●	2Z05-4131-0100-031	215,47 €	
RGTF1 Pt1000 500mm Q	Pt1000	500 mm	●	2Z05-4131-0100-041	220,70 €	
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)					
Extra charge:	other measuring ranges optional			on request		

ACCESSORIES	
Special accessories for M12 connector see chapter Accessories!	



S+S REGELTECHNIK

THERMASGARD® RGTF 1

Duct temperature sensors / smoke gas temperature sensors,
including mounting flange, with passive output

RGTF1-KV
with cable gland
(IP 65)



THERMASGARD® RGTF 1-KV		Duct temperature sensors / smoke gas temperature sensors, including mounting flange (with cable gland)		
Type / WG01	Sensor / Output	Installation length (EL)	Item No.	Price
RGTF1 Pt100 xx KV	Pt100 (according to DIN EN 60751, class B)		IP65, 4-wire	
RGTF1 Pt100 200mm KV	Pt100	200 mm	1101-30D0-1043-000	178,72 €
RGTF1 Pt100 250mm KV	Pt100	250 mm	1101-30D0-1053-000	180,55 €
RGTF1 Pt100 300mm KV	Pt100	300 mm	1101-30D0-1063-000	184,54 €
RGTF1 Pt100 500mm KV	Pt100	500 mm	1101-30D0-1103-000	189,76 €
RGTF1 Pt1000 xx KV	Pt1000 (according to DIN EN 60751, class B)		IP65, 2-wire	
RGTF1 Pt1000 200mm KV	Pt1000	200 mm	1101-30D0-5041-000	178,72 €
RGTF1 Pt1000 250mm KV	Pt1000	250 mm	1101-30D0-5051-000	180,55 €
RGTF1 Pt1000 300mm KV	Pt1000	300 mm	1101-30D0-5061-000	184,54 €
RGTF1 Pt1000 500mm KV	Pt1000	500 mm	1101-30D0-5101-000	189,76 €
Housing variant "KV":		Cable connection with cable gland		
Extra charge:	other measuring ranges optional			on request

Screw-in temperature sensors / smoke gas temperature sensors with neck tube and passive output

S+S REGELTECHNIK

Screw-in resistance thermometer / smoke gas temperature sensor with neck tube
THERMASGARD® RGTF 2 with passive output, with connecting head made from
aluminium (optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101)
and straight protective tube.

The duct sensor is used to detect relatively high temperatures in liquid or gaseous media,
eg, for exhaust air and smoke gas temperature measurement..

RGTF 2
standard

TECHNICAL DATA

Measuring range:	-35...+600 °C (extended range limits from -100...+750 °C optional)
Sensor / output:	Pt100 / Pt1000 (according to DIN EN 60 751, class B) (Perfect Sensor Protection)
Connection type:	2-wire connection (Pt1000) 4-wire connection (Pt100 / Pt1000 optional)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm ² via terminal screws on ceramic base
Cable connection:	RGTF 2 (Standard) adjusting screw made of metal (M20 x 1.5); RGTF 2-KV (optional) cable gland , brass, nickel-plated (M20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) RGTF 2-Q (optional) M12 connector according to DIN EN 61076-2-101 (male, 5-pin, A-code)
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature -20...+100 °C
Protective tube:	stainless steel V4A (1.4571), G ½" straight pipe thread, wrench size 27 mm, $p_{max} = 40 \text{ bar}$, $\varnothing = 8 \text{ mm}$ length of neck tube (HL) = 80 mm inserted length (EL) = 100 - 500 mm (see table)
Process connection:	screwed socket with G ½" straight pipe thread
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 54 (according to EN 60 529) RGTF 2 IP 65 (according to EN 60 529) RGTF 2-KV / RGTF 2-Q



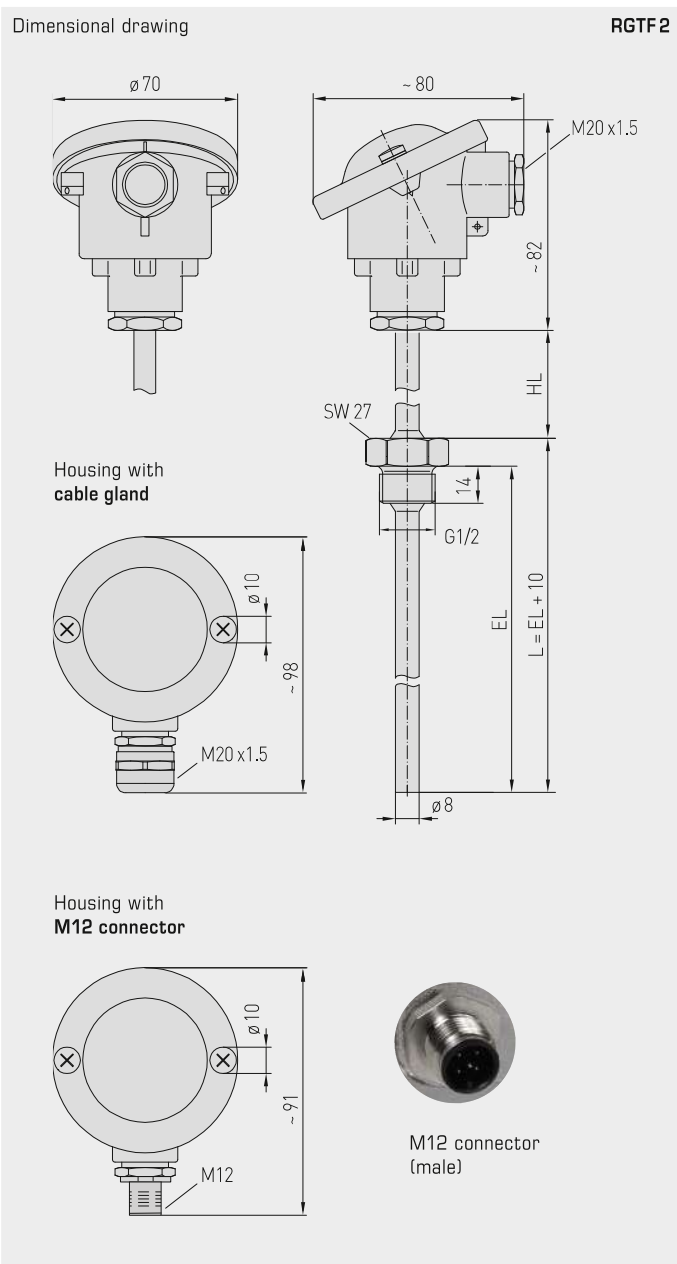
RGTF 2
Measuring insert with
ceramic tubelet



S+S REGELTECHNIK

THERMASGARD® RGTF 2

Screw-in temperature sensors / smoke gas temperature sensors
with neck tube and passive output



High-performance encapsulation against
vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

RGTF 2
standard
(IP 54)



RGTF2-KV
with cable gland
(IP 65)



RGTF2-Q
with M12 connector
(IP 65)



Screw-in temperature sensors / smoke gas temperature sensors with neck tube and passive output

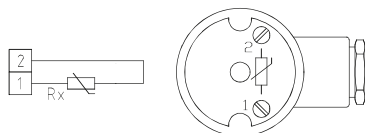
2-wire connection
(Pt1000)



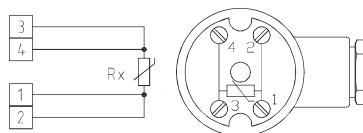
4-wire connection
(Pt100 / Pt1000 optional)



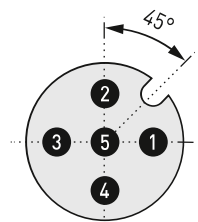
1x two-wire connection
(Pt1000)



1x four-wire connection
(Pt100 / Pt1000 optional)

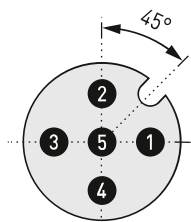


1x two-wire connection
pin assignment (M12)



- 1 Rx
- 2 Rx
- 3 frei / free
- 4 frei / free
- 5 frei / free

1x four-wire connection
pin assignment (M12)



- 1 Rx
- 2 Rx
- 3 Rx
- 4 Rx
- 5 frei / free

RGTF 2
standard
(IP 54)

THERMASGARD® RGTF 2		Screw-in temperature sensors / smoke gas temperature sensors with neck tube (standard)		
Type / WG01	Sensor / Output	Installation length (EL)	Item No.	Price
RGTF2 Pt100 xx	Pt100 (according to DIN EN 60751, class B)		IP 54, 4-wire	
RGTF2 Pt100 100/80mm	Pt100	100 mm	1101-2090-1023-000	195,09 €
RGTF2 Pt100 150/80mm	Pt100	150 mm	1101-2090-1033-000	196,17 €
RGTF2 Pt100 200/80mm	Pt100	200 mm	1101-2090-1043-000	202,23 €
RGTF2 Pt100 250/80mm	Pt100	250 mm	1101-2090-1053-000	197,62 €
RGTF2 Pt100 300/80mm	Pt100	300 mm	1101-2090-1063-000	211,93 €
RGTF2 Pt100 500/80mm	Pt100	500 mm	1101-2090-1103-000	225,28 €
RGTF2 Pt1000 xx	Pt1000 (according to DIN EN 60751, class B)		IP 54, 2-wire	
RGTF2 Pt1000 100/80	Pt1000	100 mm	1101-2090-5021-000	189,13 €
RGTF2 Pt1000 150/80	Pt1000	150 mm	1101-2090-5031-000	190,35 €
RGTF2 Pt1000 200/80	Pt1000	200 mm	1101-2090-5041-000	196,42 €
RGTF2 Pt1000 250/80	Pt1000	250 mm	1101-2090-5051-000	197,63 €
RGTF2 Pt1000 300/80	Pt1000	300 mm	1101-2090-5061-000	206,10 €
RGTF2 Pt1000 500/80	Pt1000	500 mm	1101-2090-5101-000	219,45 €
Housing variant:	equipped as standard with pressure screw (IP 54), optional housing variants with cable gland (IP 65) or M12 connector (IP 65) see the next page!			
Extra charge:	other measuring ranges optional		on request	

Screw-in temperature sensors / smoke gas temperature sensors
with neck tube and passive output

S+S REGELTECHNIK

RGTF 2 - Q
with M12 connector
(IP65)



THERMASGARD® RGTF 2 - Q

Screw-in temperature sensors / smoke gas temperature sensors with neck tube
(with M12 connector)

Type / WG03	Sensor / Output	Installation length (EL)	Q	Item No.	Price
RGTF2 Pt100 xx Q	Pt100 (according to DIN EN 60751, class B)		●	IP65, 4-wire	
RGTF2 Pt100 100/80mm Q	Pt100	100 mm	●	2Z01-4141-0100-011	229,06 €
RGTF2 Pt100 150/80mm Q	Pt100	150 mm	●	2Z01-4141-0100-021	230,28 €
RGTF2 Pt100 200/80mm Q	Pt100	200 mm	●	2Z01-4141-0100-031	236,34 €
RGTF2 Pt100 250/80mm Q	Pt100	250 mm	●	2Z01-4141-0100-041	237,55 €
RGTF2 Pt100 300/80mm Q	Pt100	300 mm	●	2Z01-4141-0100-051	246,03 €
RGTF2 Pt100 500/80mm Q	Pt100	500 mm	●	2Z01-4141-0100-061	259,37 €
RGTF2 Pt1000 xx Q	Pt1000 (according to DIN EN 60751, class B)			IP65, 2-wire	
RGTF2 Pt1000 100/80mm Q	Pt1000	100 mm	●	2Z05-4141-0100-011	229,06 €
RGTF2 Pt1000 150/80mm Q	Pt1000	150 mm	●	2Z05-4141-0100-021	230,28 €
RGTF2 Pt1000 200/80mm Q	Pt1000	200 mm	●	2Z05-4141-0100-031	236,34 €
RGTF2 Pt1000 250/80mm Q	Pt1000	250 mm	●	2Z05-4141-0100-041	237,55 €
RGTF2 Pt1000 300/80mm Q	Pt1000	300 mm	●	2Z05-4141-0100-051	246,03 €
RGTF2 Pt1000 500/80mm Q	Pt1000	500 mm	●	2Z05-4141-0100-061	259,37 €
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin, A-code)				
Extra charge:	other measuring ranges optional			on request	

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!



S+S REGELTECHNIK

THERMASGARD® RGTF 2

Screw-in temperature sensors / smoke gas temperature sensors
with neck tube and passive output

RGTF2-KV
with cable gland
(IP 65)



THERMASGARD® RGTF 2 - KV		Screw-in temperature sensors / smoke gas temperature sensors with neck tube (with cable gland)		
Type / WG01	Sensor / Output	Installation length (EL)	Item No.	Price
RGTF2 Pt100 xx KV	Pt100 (according to DIN EN 60751, class B)		IP65, 4-wire	
RGTF2 Pt100 100/80mm KV	Pt100	100 mm	1101-20D0-1023-000	198,13 €
RGTF2 Pt100 150/80mm KV	Pt100	150 mm	1101-20D0-1033-000	199,34 €
RGTF2 Pt100 200/80mm KV	Pt100	200 mm	1101-20D0-1043-000	205,41 €
RGTF2 Pt100 250/80mm KV	Pt100	250 mm	1101-20D0-1053-000	206,60 €
RGTF2 Pt100 300/80mm KV	Pt100	300 mm	1101-20D0-1063-000	215,09 €
RGTF2 Pt100 500/80mm KV	Pt100	500 mm	1101-20D0-1103-000	228,44 €
RGTF2 Pt1000 xx KV	Pt1000 (according to DIN EN 60751, class B)		IP65, 2-wire	
RGTF2 Pt1000 100/80mm KV	Pt1000	100 mm	1101-20D0-5021-000	198,13 €
RGTF2 Pt1000 150/80mm KV	Pt1000	150 mm	1101-20D0-5031-000	199,34 €
RGTF2 Pt1000 200/80mm KV	Pt1000	200 mm	1101-20D0-5041-000	205,41 €
RGTF2 Pt1000 250/80mm KV	Pt1000	250 mm	1101-20D0-5051-000	206,60 €
RGTF2 Pt1000 300/80mm KV	Pt1000	300 mm	1101-20D0-5061-000	215,09 €
RGTF2 Pt1000 500/80mm KV	Pt1000	500 mm	1101-20D0-5101-000	228,44 €
Housing variant "KV":		Cable connection with cable gland		
Extra charge:	other measuring ranges optional		on request	

Sleeve sensor / cable temperature sensor
duct / immersion / screw-in temperature sensor,
with passive output

The sleeve sensor / cable sensor **THERMASGARD® HTF** is used to measure temperatures in liquid and gaseous media. It can be used as a duct sensor and - if installed in an immersion sleeve - as an immersion and screw-in sensor. The sleeve length varies, depending on request, from 30...400 mm (standard is 50 mm respectively 200 mm), the cable length is arbitrary (standard is 1.5 m). Depending on application, with silicone, glass fibre, or PVC leads, for two-wire or four-wire connection. For direct, continuous use in liquids, please use our **THE** immersion sleeves (see type table).

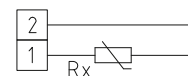
TECHNICAL DATA

Measuring ranges:	-35...+105 °C PVC , LiYY, 2 x 0.25 mm ² -50...+180 °C Silicone , SiHF, 2 x 0.25 mm ² -50...+250 °C PTFE , 2 x 1.0 mm ² -50...+350 °C glass fibre , 2 x 0.25 mm ² ends stripped with wire end sleeves (extended measuring range limits optional, depending on connection leads, T_{max} Ni1000 = +180 °C, T_{max} NTC / Ni1000 TK5000 = +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)
Protective tube	sensor sleeve made of stainless steel, V4A (1.4571), Ø = 6 mm HTF50 nominal length (NL) = 50 mm HTF200 nominal length (NL) = 200 mm (other optional dimensions also available, nominal length (NL) = 30...400 mm)
Connection cable:	cable length (KL) = 1.5 m (optional also 3 m, 5 m, 8 m, 10 m)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Process connection:	using immersion sleeves THE (see table) or mounting flange, plastic (see table) (optionally in galvanised steel, see chapter Accessories)
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529) sleeve humidity-tight (standard) IP68 (according to EN 60 529) sleeve water-tight (optional) IP54 (according to EN 60 529) with glass fibre cable (optional)

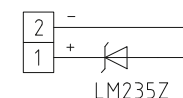
ACCESSORIES

MF-06-K	Mounting flange , plastic, 56.8 x 84.3 mm, Ø = 6.2 mm tube gland, T _{max} = +100 °C (is not included in scope of delivery)
THE-ms / xx	Immersion sleeve, brass, nickel-plated , Ø = 9 mm, inserted length (EL) = 50 - 250 mm (see table), inner diameter of socket Ø = 5.2 mm, with adjusting screw M12 x 1.5 T _{max} = +130 °C, p _{max} = 16 bar
THE-VA / xx	Immersion sleeve, stainless steel, V4A (1.4571), Ø = 9 mm, inserted length (EL) = 50 - 400 mm (see table), inner diameter of socket Ø = 5.2 mm, with adjusting screw M12 x 1.5 T _{max} = +200 °C, p _{max} = 40 bar

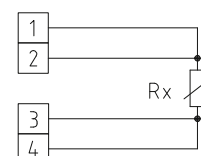
1x two-wire connection
standard



1x two-wire connection
LM235Z (KP 10)



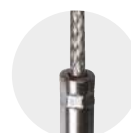
1x four-wire connection
 (optional)



IP65 (standard)
 humidity-tight



IP68 (optional)
 water-tight
Perfect Sensor Protection



IP54 (optional)
 with **glass fibre** cable

MF-06-K
 Mounting flange,
 plastic
 (optional)



High-performance encapsulation against
 vibration, mechanical stress and humidity





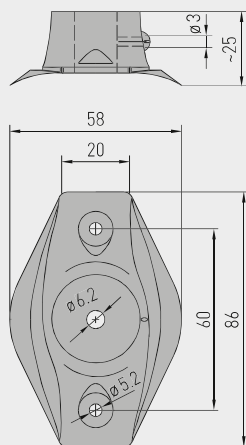
S+S REGELTECHNIK

THERMASGARD® HTF 50
THERMASGARD® HTF 200

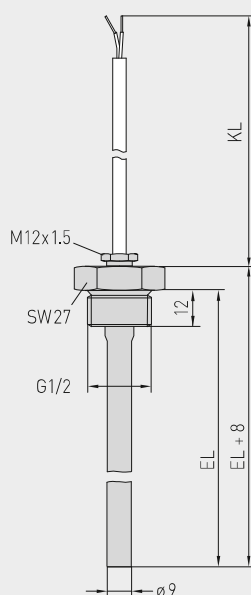
Sleeve sensor / cable temperature sensor
duct / immersion / screw-in temperature sensor,
with passive output



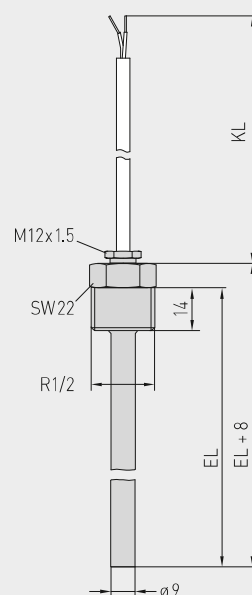
Dimensional drawing **MF-06-K**



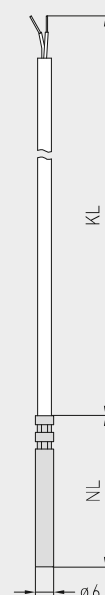
HTF50 + THE-VA



HTF50 + THE-ms



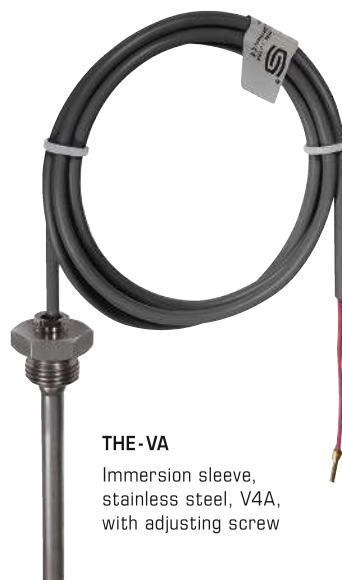
HTF50 / HTF200



HTF200 + MF-06-K
with accessory mounting flange
(see type table)
as duct temperature sensor

HTF50 + THE-xx
with accessory immersion sleeve
(see type table)
as immersion / screw-in temperature sensor

HTF50
with PVC / silicone cable
(standard)



THE-VA
Immersion sleeve,
stainless steel, V4A,
with adjusting screw



HTF50
with glass fibre cable



THE-ms
Immersion sleeve,
brass, nickel-plated,
with adjusting screw



Sleeve sensor / cable temperature sensor
duct / immersion / screw-in temperature sensor,
with passive output

S+S REGELTECHNIK

THERMASGARD® HTF 50 sleeve sensor / cable temperature sensor (NL = 50 mm)

Type / WG03	Cable material	Cable length	Measuring Range	Protection class	Item No. Sensor	Price
HTF50 PT100					Pt 100, class B	
HTF50 Pt100 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6030-1211-110	13,04 €
HTF50 Pt100 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6030-1211-120	16,38 €
HTF50 Pt100 PTFE 1,5M	PTFE	1.5 m	-50...+250 °C	IP65 *	1101-6030-1211-140	54,98 €
HTF50 Pt100	Glass Fibre	1.5 m	-50...+350 °C	IP54	1101-6030-1211-050	45,66 €
HTF50 Pt100 PVC 3M	PVC	3 m	-35...+105 °C	IP65 *	1101-6030-1231-110	15,78 €
HTF50 Pt100 Silikon 3M	Silicone	3 m	-50...+180 °C	IP65 *	1101-6030-1231-120	20,43 €
HTF50 Pt100 PVC 5M	PVC	5 m	-35...+105 °C	IP65 *	1101-6030-1251-110	19,42 €
HTF50 Pt100 Silikon 5M	Silicone	5 m	-50...+180 °C	IP65 *	1101-6030-1251-120	25,84 €
HTF50 Pt100 PVC 8M	PVC	8 m	-35...+105 °C	IP65 *	1101-6030-1281-110	24,90 €
HTF50 Pt100 Silikon 8M	Silicone	8 m	-50...+180 °C	IP65 *	1101-6030-1281-120	33,97 €
HTF50 Pt100 PVC 10M	PVC	10 m	-35...+105 °C	IP65 *	1101-6030-1301-110	28,54 €
HTF50 Pt100 Silikon 10M	Silicone	10 m	-50...+180 °C	IP65 *	1101-6030-1301-120	39,40 €
HTF50 PT1000					Pt 1000, class B	
HTF50 Pt1000 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6030-5211-110	15,35 €
HTF50 Pt1000 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6030-5211-120	18,86 €
HTF50 Pt1000 PTFE 1,5M	PTFE	1.5 m	-50...+250 °C	IP65 *	1101-6030-5211-140	55,11 €
HTF50 Pt1000	Glass Fibre	1.5 m	-50...+350 °C	IP54	1101-6030-5211-050	45,66 €
HTF50 Pt1000 PVC 3M	PVC	3 m	-35...+105 °C	IP65 *	1101-6030-5231-110	18,09 €
HTF50 Pt1000 Silikon 3M	Silicone	3 m	-50...+180 °C	IP65 *	1101-6030-5231-120	22,93 €
HTF50 Pt1000 PVC 5M	PVC	5 m	-35...+105 °C	IP65 *	1101-6030-5251-110	21,73 €
HTF50 Pt1000 Silikon 5M	Silicone	5 m	-50...+180 °C	IP65 *	1101-6030-5251-120	28,34 €
HTF50 Pt1000 PVC 8M	PVC	8 m	-35...+105 °C	IP65 *	1101-6030-5281-110	27,21 €
HTF50 Pt1000 Silikon 8M	Silicone	8 m	-50...+180 °C	IP65 *	1101-6030-5281-120	36,46 €
HTF50 Pt1000 PVC 10M	PVC	10 m	-35...+105 °C	IP65 *	1101-6030-5301-110	30,86 €
HTF50 Pt1000 Silikon 10M	Silicone	10 m	-50...+180 °C	IP65 *	1101-6030-5301-120	41,87 €
HTF50 PT1000 A					Pt 1000 A, class A-TGA	
HTF50 Pt1000A PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6030-6211-110	22,51 €
HTF50 Pt1000A Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6030-6211-120	25,86 €
HTF50 Ni1000					Ni 1000	
HTF50 Ni1000 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6030-9211-110	14,91 €
HTF50 Ni1000 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6030-9211-120	18,57 €
HTF50 Ni1000 PVC 3M	PVC	3 m	-35...+105 °C	IP65 *	1101-6030-9231-110	17,66 €
HTF50 Ni1000 Silikon 3M	Silicone	3 m	-50...+180 °C	IP65 *	1101-6030-9231-120	22,62 €
HTF50 Ni1000 PVC 5M	PVC	5 m	-35...+105 °C	IP65 *	1101-6030-9251-110	21,31 €
HTF50 Ni1000 Silikon 5M	Silicone	5 m	-50...+180 °C	IP65 *	1101-6030-9251-120	28,03 €
HTF50 Ni1000 PVC 8M	PVC	8 m	-35...+105 °C	IP65 *	1101-6030-9281-110	26,78 €
HTF50 Ni1000 Silikon 8M	Silicone	8 m	-50...+180 °C	IP65 *	1101-6030-9281-120	36,16 €
HTF50 Ni1000 PVC 10M	PVC	10 m	-35...+105 °C	IP65 *	1101-6030-9301-110	30,42 €
HTF50 Ni1000 Silikon 10M	Silicone	10 m	-50...+180 °C	IP65 *	1101-6030-9301-120	41,57 €
HTF50 NiTK					Ni 1000 TK 5000	
HTF50 NiTK PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6031-0211-110	18,80 €
HTF50 NiTK Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP65 *	1101-6031-0211-120	22,18 €
HTF50 NiTK PVC 3M	PVC	3 m	-35...+105 °C	IP65 *	1101-6031-0231-110	21,55 €
HTF50 NiTK Silikon 3M	Silicone	3 m	-50...+150 °C	IP65 *	1101-6031-0231-120	26,25 €
HTF50 NiTK PVC 5M	PVC	5 m	-35...+105 °C	IP65 *	1101-6031-0251-110	25,20 €
HTF50 NiTK Silikon 5M	Silicone	5 m	-50...+150 °C	IP65 *	1101-6031-0251-120	31,65 €
HTF50 NiTK PVC 8M	PVC	8 m	-35...+105 °C	IP65 *	1101-6031-0281-110	30,67 €
HTF50 NiTK Silikon 8M	Silicone	8 m	-50...+150 °C	IP65 *	1101-6031-0281-120	39,79 €
HTF50 NiTK PVC 10M	PVC	10 m	-35...+105 °C	IP65 *	1101-6031-0301-110	34,31 €
HTF50 NiTK Silikon 10M	Silicone	10 m	-50...+150 °C	IP65 *	1101-6031-0301-120	45,20 €
HTF50 LM235Z					LM235Z	
HTF50 LM235Z PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6032-1211-110	13,35 €
HTF50 LM235Z Silikon 1,5M	Silicone	1.5 m	-40...+125 °C	IP65 *	1101-6032-1211-120	16,99 €
HTF50 LM235Z PVC 3M	PVC	3 m	-35...+105 °C	IP65 *	1101-6032-1231-110	16,08 €
HTF50 LM235Z Silikon 3M	Silicone	3 m	-40...+125 °C	IP65 *	1101-6032-1231-120	21,04 €
HTF50 LM235Z PVC 5M	PVC	5 m	-35...+105 °C	IP65 *	1101-6032-1251-110	19,74 €
HTF50 LM235Z Silikon 5M	Silicone	5 m	-40...+125 °C	IP65 *	1101-6032-1251-120	26,45 €
HTF50 LM235Z PVC 8M	PVC	8 m	-35...+105 °C	IP65 *	1101-6032-1281-110	25,21 €
HTF50 LM235Z Silikon 8M	Silicone	8 m	-40...+125 °C	IP65 *	1101-6032-1281-120	34,59 €
HTF50 LM235Z PVC 10M	PVC	10 m	-35...+105 °C	IP65 *	1101-6032-1301-110	28,86 €
HTF50 LM235Z Silikon 10M	Silicone	10 m	-40...+125 °C	IP65 *	1101-6032-1301-120	40,00 €

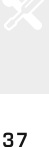
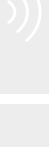
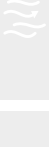
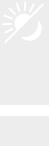
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S+S REGELTECHNIK

THERMASGARD® HTF 50

Sleeve sensor / cable temperature sensor
duct / immersion / screw-in temperature sensor,
with passive output



THERMASGARD® HTF 50 sleeve sensor / cable temperature sensor (NL = 50 mm)						
Type / WG03	Cable material	Cable length	Measuring Range	Protection class	Item No. Sensor	Price
HTF50 NTC1.8K					NTC 1.8K	
HTF50 NTC1,8K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP 65 *	1101-6031-2211-110	12,61 €
HTF50 NTC1,8K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP 65 *	1101-6031-2211-120	14,49 €
HTF50 NTC1,8K PVC 3M	PVC	3 m	-35...+105 °C	IP 65 *	1101-6031-2231-110	15,36 €
HTF50 NTC1,8K Silikon 3M	Silicone	3 m	-50...+150 °C	IP 65 *	1101-6031-2231-120	18,57 €
HTF50 NTC1,8K PVC 5M	PVC	5 m	-35...+105 °C	IP 65 *	1101-6031-2251-110	19,01 €
HTF50 NTC1,8K Silikon 5M	Silicone	5 m	-50...+150 °C	IP 65 *	1101-6031-2251-120	23,98 €
HTF50 NTC1,8K PVC 8M	PVC	8 m	-35...+105 °C	IP 65 *	1101-6031-2281-110	24,47 €
HTF50 NTC1,8K Silikon 8M	Silicone	8 m	-50...+150 °C	IP 65 *	1101-6031-2281-120	32,09 €
HTF50 NTC1,8K PVC 10M	PVC	10 m	-35...+105 °C	IP 65 *	1101-6031-2301-110	28,12 €
HTF50 NTC1,8K Silikon 10M	Silicone	10 m	-50...+150 °C	IP 65 *	1101-6031-2301-120	37,51 €
HTF50 NTC10K					NTC 10K	
HTF50 NTC10K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP 65 *	1101-6031-5211-110	12,61 €
HTF50 NTC10K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP 65 *	1101-6031-5211-120	14,49 €
HTF50 NTC10K PVC 3M	PVC	3 m	-35...+105 °C	IP 65 *	1101-6031-5231-110	15,36 €
HTF50 NTC10K Silikon 3M	Silicone	3 m	-50...+150 °C	IP 65 *	1101-6031-5231-120	18,57 €
HTF50 NTC10K PVC 5M	PVC	5 m	-35...+105 °C	IP 65 *	1101-6031-5251-110	19,01 €
HTF50 NTC10K Silikon 5M	Silicone	5 m	-50...+150 °C	IP 65 *	1101-6031-5251-120	23,98 €
HTF50 NTC10K PVC 8M	PVC	8 m	-35...+105 °C	IP 65 *	1101-6031-5281-110	24,47 €
HTF50 NTC10K Silikon 8M	Silicone	8 m	-50...+150 °C	IP 65 *	1101-6031-5281-120	32,09 €
HTF50 NTC10K PVC 10M	PVC	10 m	-35...+105 °C	IP 65 *	1101-6031-5301-110	28,12 €
HTF50 NTC10K Silikon 10M	Silicone	10 m	-50...+150 °C	IP 65 *	1101-6031-5301-120	37,51 €
HTF50 NTC20K					NTC 20K	
HTF50 NTC20K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP 65 *	1101-6031-6211-110	12,61 €
HTF50 NTC20K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP 65 *	1101-6031-6211-120	14,49 €
HTF50 NTC20K PVC 3M	PVC	3 m	-35...+105 °C	IP 65 *	1101-6031-6231-110	15,36 €
HTF50 NTC20K Silikon 3M	Silicone	3 m	-50...+150 °C	IP 65 *	1101-6031-6231-120	18,57 €
HTF50 NTC20K PVC 5M	PVC	5 m	-35...+105 °C	IP 65 *	1101-6031-6251-110	19,01 €
HTF50 NTC20K Silikon 5M	Silicone	5 m	-50...+150 °C	IP 65 *	1101-6031-6251-120	23,98 €
HTF50 NTC20K PVC 8M	PVC	8 m	-35...+105 °C	IP 65 *	1101-6031-6281-110	24,47 €
HTF50 NTC20K Silikon 8M	Silicone	8 m	-50...+150 °C	IP 65 *	1101-6031-6281-120	32,09 €
HTF50 NTC20K PVC 10M	PVC	10 m	-35...+105 °C	IP 65 *	1101-6031-6301-110	28,12 €
HTF50 NTC20K Silikon 10M	Silicone	10 m	-50...+150 °C	IP 65 *	1101-6031-6301-120	37,51 €
Extra charge:	* Protection type IP 68 (Sensor sleeve watertight compound-filled) Other sensors optional Cable length (KL) 3 m, 5 m, 8 m, 10 m (standard lengths) Connection type 4-wire (4-conductor)					3,24 €
For special orders please specify: (possible for 25 or more pieces)	Type sensor length (NL), sensor, cable material, connection type, cable length (KL), protection type e.g. HTF - 30mm, Pt1000, PVC, 2-wire, 10m, IP68; HTF - 50mm, Ni1000 TK5000, silicon, 4-wire, 5 m, IP65					on request on request on request

HTF 50
(NL = 50 mm)
with PVC / silicone cable

HTF 50
(NL = 50 mm)
with glass fibre cable



IP 65 (standard)
humidity-tight



IP 68 (optional)
water-tight
Perfect Sensor Protection



IP 54 (optional)
with glass fibre cable



Sleeve sensor / cable temperature sensor
duct / immersion / screw-in temperature sensor,
with passive output

THERMASGARD® HTF 200 sleeve sensor / cable temperature sensor (NL = 200 mm)

Type / WG03	Cable material	Cable length	Measuring Range	Protection class	Item No. Sensor	Price
HTF200 PT100					Pt 100, class B	
HTF200 Pt100 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6090-1211-110	19,40 €
HTF200 Pt100 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6090-1211-120	23,04 €
HTF200 PT1000					Pt 1000, class B	
HTF200 Pt1000 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6090-5211-110	19,40 €
HTF200 Pt1000 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6090-5211-120	23,04 €
HTF200 PT1000 A					Pt 1000 A, class A-TGA	
HTF200 Pt1000A PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6090-6211-110	26,40 €
HTF200 Pt1000A Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6090-6211-120	30,06 €
HTF200 Ni1000					Ni 1000	
HTF200 Ni1000 PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6090-9211-110	19,77 €
HTF200 Ni1000 Silikon 1,5M	Silicone	1.5 m	-50...+180 °C	IP65 *	1101-6090-9211-120	23,04 €
HTF200 NiTK					Ni 1000 TK 5000	
HTF200 NiTK PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6091-0211-110	20,74 €
HTF200 NiTK Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP65 *	1101-6091-0211-120	24,01 €
HTF200 LM235Z					LM 235Z	
HTF200 LM235Z PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6092-1211-110	20,00 €
HTF200 LM235Z Silikon 1,5M	Silicone	1.5 m	-40...+125 °C	IP65 *	1101-6092-1211-120	23,65 €
HTF200 NTC1,8K					NTC 1.8K	
HTF200 NTC1,8K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6091-2211-110	19,40 €
HTF200 NTC1,8K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP65 *	1101-6091-2211-120	23,04 €
HTF200 NTC10K					NTC 10K	
HTF200 NTC10K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6091-5211-110	19,40 €
HTF200 NTC10K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP65 *	1101-6091-5211-120	23,04 €
HTF200 NTC20K					NTC 20K	
HTF200 NTC20K PVC 1,5M	PVC	1.5 m	-35...+105 °C	IP65 *	1101-6091-6211-110	19,40 €
HTF200 NTC20K Silikon 1,5M	Silicone	1.5 m	-50...+150 °C	IP65 *	1101-6091-6211-120	23,04 €
Extra charge:	* Protection type IP68 (Sensor sleeve watertight compound-filled) Other sensors optional Cable length (KL) 3 m, 5 m, 8 m, 10 m (standard lengths) Connection type 4-wire (4-conductor)					3,24 €
For special orders please specify: (possible for 25 or more pieces)	Type sensor length (NL), sensor, cable material, connection type, cable length (KL), protection type e. g. HTF-200 mm, Pt1000, PVC, 2-wire, 10 m, IP68; HTF-400 mm, Ni1000 TK5000, silicon, 4-wire, 5 m, IP65					



HTF 200
(NL = 200 mm)
with PVC/silicone cable



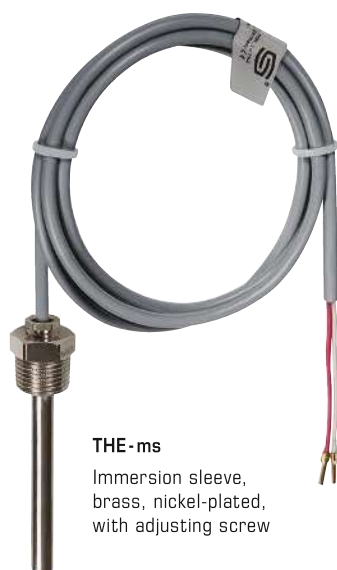
IP65 (standard)
humidity-tight



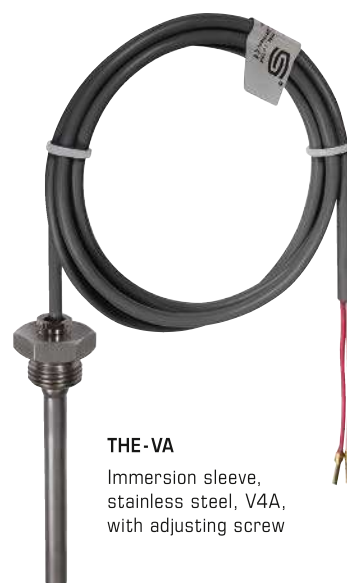
IP68 (optional)
water-tight
Perfect Sensor Protection

THERMASGARD® HTF 50 accessory as immersion / screw-in sensor temperature sensor (ESTF)				
Type / WG01	Description		Item No.	Price
THE-ms / xx				
	Immersion sleeve, brass, nickel-plated, Ø 9 mm, inner diameter of socket Ø = 5.2 mm, with adjusting screw M12 x 1.5			
THE-MS 50MM	$p_{\max} = 16 \text{ bar}$, $T_{\max} = +130^\circ\text{C}$	EL = 50 mm	7100-0011-6010-002	9,96 €
THE-MS 100MM	$p_{\max} = 16 \text{ bar}$, $T_{\max} = +130^\circ\text{C}$	EL = 100 mm	7100-0011-6020-002	10,76 €
THE-MS 150MM	$p_{\max} = 16 \text{ bar}$, $T_{\max} = +130^\circ\text{C}$	EL = 150 mm	7100-0011-6030-002	11,16 €
THE-MS 200MM	$p_{\max} = 16 \text{ bar}$, $T_{\max} = +130^\circ\text{C}$	EL = 200 mm	7100-0011-6040-002	11,94 €
THE-MS 250MM	$p_{\max} = 16 \text{ bar}$, $T_{\max} = +130^\circ\text{C}$	EL = 250 mm	7100-0011-6050-002	13,38 €
THE-VA / xx				
	Immersion sleeve, stainless steel, V4A (1.4571), Ø 9 mm, inner diameter of socket Ø = 5.2 mm, with adjusting screw M12 x 1.5			
THE-VA 50MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 50 mm	7100-0012-6010-002	19,71 €
THE-VA 100MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 100 mm	7100-0012-6020-002	21,77 €
THE-VA 150MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 150 mm	7100-0012-6030-002	23,38 €
THE-VA 200MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 200 mm	7100-0012-6040-002	24,66 €
THE-VA 250MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 250 mm	7100-0012-6050-002	30,65 €
THE-VA 300MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 300 mm	7100-0012-6060-002	32,02 €
THE-VA 400MM	$p_{\max} = 40 \text{ bar}$, $T_{\max} = +200^\circ\text{C}$	EL = 400 mm	7100-0012-6080-002	33,06 €
xx = (EL)	Other installation lengths on request			

HTF 50
(NL = 50 mm)
with THE immersion sleeve
as immersion / screw-in temperature sensor



THE-ms
Immersion sleeve,
brass, nickel-plated,
with adjusting screw



THE-VA
Immersion sleeve,
stainless steel, V4A,
with adjusting screw

MF-06-K
Mounting flange,
plastic
(optional)



THERMASGARD® HTF 50 accessories (standard) THERMASGARD® HTF 200 accessories (standard)				
Type / WG01	Description	$T_{\max}$	Item No.	Price
MF				
MF-06-K	Mounting flange plastic, 56.8 x 84.3 mm, Ø 6.2 mm tube gland (not included in scope of delivery)	+100 °C	7100-0030-1000-000	5,83 €
Note: For further information see last chapter!				



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