

ДАТЧИКИ ТЕМПЕРАТУРЫ GTF 300, 101К, 101Р, 101-ЕХ, 102-ЕХ, 103-ЕХ, 102

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

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Wire Probe GTF 300



- NiCr-Ni wire probe (type K)
- Quick-response measurements in air, gases, liquids
- For very small surfaces

Characteristics

The GTF 300 is a NiCr-Ni (type K) wire probe for quick-response measurements in air, gases or liquids. The GTF 300 with option "UV" can be also used for measurements of very small surfaces. For option "UV" (untwisted welded) the measuring point is placed at the sensor tip.

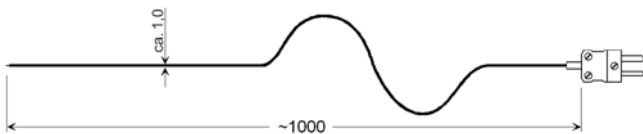
The thermocouple consists of two electric lines made of different materials (NiCr and Ni). The measuring principle of temperature measurement with thermocouples is based on the existence of thermovoltage when two wires made of different materials are connected.

The probe is delivered with ready-to-use, thermovoltage-free miniature flat-pin plug NST1200.

Technical Data

Thermocouple	: NiCr-Ni (type K)
Measuring range	: -65..+300 °C
Response time (T_{90})	: approx. 0.3 s
Accuracy	: class 1
Thermocouples wires	: 1 m Teflon insulated twisted wires (max. 250 °C), very flexible diameter approx. 1.0 mm
Measuring point	: connection point of wires measuring tip (twisted welded)
Connection	: miniature flat-pin plug NST1200

Dimensions

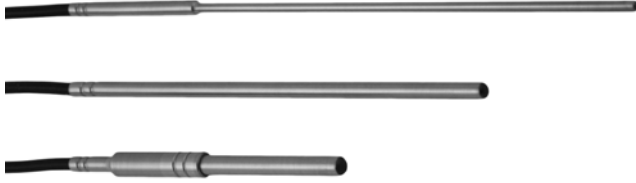


Ordering code

GTF300 - 1. - 2.

1. Wire length	
01	1 m (standard)
xx	desired length in m (up to 50 m) e.g. 25 = 25 m
2. Option	
00	without option
UV	measuring tip untwisted welded

Temperature Probe GTF 101 K



- NiCr-Ni (type K)
- With cable sleeve and cable (loose ends)
- Very robust

Characteristics

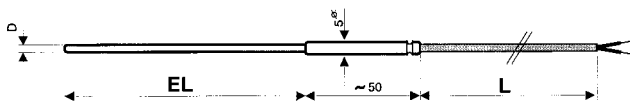
The GTF 101 is a temperature probe modified completely according to customer specifications. The GTF 101 is very robust and therefore especially suited for application at high permanent temperatures in air, gases liquids or aggressive environments.

The measurement is done by means of thermocouple wires (NiCr-Ni).

Technical data

Sensor element	: NiCr-Ni (type K)
Measuring range	: -200..+1150 °C
Probe diameter D	: 0.5 mm, 1 mm, 1.5 mm, 3 mm, 6 mm other diameters upon request
Fitting length EL	: 150 mm, 250 mm, 500 mm, 1000 mm, 1500 mm, other fitting lengths possible
Cable sleeve	: for probe diameter D 0.5 mm, 1 mm, 1.5 mm, 3 mm: cable sleeve Ø 5 mm x 50 mm additional to fitting length for probe diameter D 6 mm: cable sleeve Ø 8 mm x 35 mm and diminution Ø 5 mm x 17 mm additional to fitting length
Note:	: The temperature of the cable sleeve must not exceed the permitted temperature of the cable
Accuracy	: class 1
Tube material	: cable sleeve: V4A probe tube: Inconel 600
Cable	: 1 m silicone compensation line (std), loose ends
PVC cable	: up to max. 105 °C
Silicone cable	: up to max. 200 °C (standard)
Teflon cable	: up to max. 250 °C
Glass silk cable	: up to max. 400 °C

Dimensions



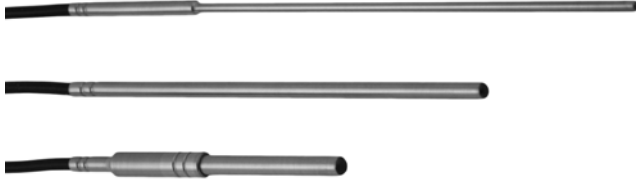
Ordering code

GTF101K - - - -

1. 2. 3. 4.

1. Probe diameter D	
D05	0.5 mm
D10	1.0 mm
D15	1.5 mm
D30	3.0 mm
D60	6.0 mm
Dxx	other Ø in mm (upon request)
2. Fitting length EL	
0150	150 mm
0250	250 mm
0500	500 mm
1000	1000 mm
1500	1500 mm
xxxx	any EL in mm (e.g.: 0100 = 100 mm)
3. Cable length L	
L01	1 m (standard)
Lxx	desired length in m (e.g. L03 = 3 m)
4. Cable material (compensation line)	
P	PVC cable up to max. 105 °C
S	silicone cable up to max. 200 °C (standard)
T	Teflon cable up to max. 250 °C
G	glass silk cable up to max. 400 °C

Temperature Probe GTF 101 P



- Pt100, Pt1000
- With cable sleeve and cable (loose ends)
- Very robust

Characteristics

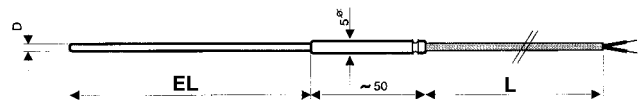
The GTF 101 is a temperature probe modified completely according to customer specifications. The GTF 101 is very robust and therefore especially suited for application at high permanent temperatures in air, gases liquids or aggressive environments.

The measurement is done by means of resistance temperature sensors (Pt100 or Pt1000)

Technical data

Sensor element	: Pt100 (2- / 3- or 4-wire) Pt1000 (2- / 3- or 4-wire)
Measuring range MB	
MB 1	: -50..+400 °C
MB 2	: -200..+400 °C
MB 3	: -200..+600 °C
MB 4	: -50..+850 °C
Probe diameter D	: 3 mm, 4 mm, 5 mm, 6 mm, 8 mm other diameters (e.g. 1.6 mm, 2.2 mm) upon request
Fitting length EL	: 50 mm, 100 mm, 150 mm, 250 mm, 500 mm, 1000 mm, 1500 mm other fitting lengths possible
Cable sleeve	: for probe diameter D 3 mm, 4 mm, 5 mm, 6 mm, 8 mm: cable sleeve Ø 5 mm x 50 mm additional to fitting length for probe diameter D 6 mm and MB3 or MB4: cable sleeve Ø 8 mm x 35 mm and diminution Ø 5 mm x 17 mm additional to fitting length
Note:	: The temperature of the cable sleeve must not exceed the permitted temperature of the cable
Accuracy	: DIN class B, DIN class A, 1/3 DIN class B, 1/10 DIN class B
Tube material	: V4A
Cable	: 1 m (standard), loose ends
PVC cable	: up to max. 105 °C
Silicone cable	: up to max. 200 °C (standard)
Teflon cable	: up to max. 250 °C
Glass silk cable	: up to max. 400 °C

Dimensions

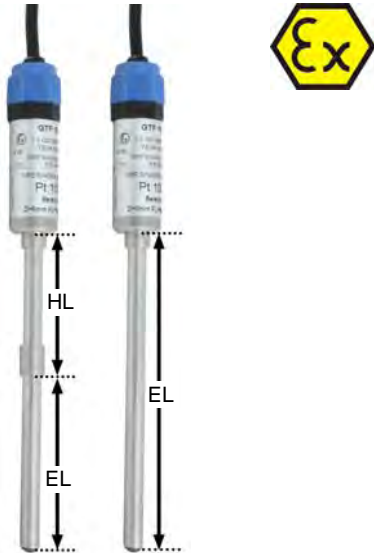


Ordering code

GTF101P - - - - - - - -

1. Sensor element	
P	Pt100
T	Pt1000
2. Connection of sensor element	
2L	2-wire
3L	3-wire
4L	4-wire
3. Accuracy	
A	DIN class A <i>only with MB1</i>
B	DIN class B (Standard)
D	1/3 DIN class B <i>only with MB1, MB2, MB3</i>
Z	1/10 DIN class B <i>only with MB1 and Pt100</i>
4. Measuring range MB	
MB1	-50..+400 °C
MB2	-200..+400 °C
MB3	-70..+600 °C
MB4	-50..+850 °C <i>only with Pt100</i>
5. Probe diameter D	
D30	3.0 mm
D40	4.0 mm
D50	5.0 mm
D60	6.0 mm
D80	8.0 mm <i>not with MB4</i>
Dxx	other Ø in mm (upon request)
6. Fitting length EL	
0050	50 mm
0100	100 mm
0150	150 mm
0250	250 mm
0500	500 mm
1000	1000 mm
1500	1500 mm
xxxx	any EL in mm (e.g.: 0700 = 700 mm)
7. Cable length L	
L01	1 m (standard)
Lxx	desired length in m (e.g. L03 = 3 m)
8. Cable material	
P	PVC cable up to max. 105 °C
S	silicone cable up to max. 200 °C (standard)
T	Teflon cable up to max. 250 °C
G	glass silk cable up to max. 400 °C

Ex Temperature Probe GTF 101-Ex



- For use in potentially explosive gaseous or dust mixtures
- Potential-free temperature probe made of stainless steel
- Assembled according to customer preferences

Characteristics

The temperature probe GTF 101-Ex is a mounting probe for usage in potentially explosive atmospheres. The modular build up ensures greatest flexibility and the possibility to fit it to the existing conditions. Therefore parameters like length, diameter, cable or type of protection ("i" or "e") can be adjusted.

There are 2 different sensor types available for the measuring unit of GTF 101-Ex: resistance thermometer Pt100, Pt1000 or thermocouple type K, type N (standard). Only sheathed resistance thermometer or sheathed thermocouple are used.

The probes can be customized according to customer requirements.

Technical data

Sensor element : Pt100, Pt1000 (sheathed element), 4-wire; type K (NiCr-Ni) or type N (NiCrSi-NiSi) sheathed thermocouple

Measuring range
Pt100 / Pt1000 : -200..+100 °C (600 °C with neck tube)
Type K / type N : -200..+100 °C (900 °C with neck tube)

Accuracy
Pt100 / Pt1000 : DIN class B
Type K / type N : class 1
Type of protection : "i" intrinsic safe
"e" increased safety

Ambient temperature : -20..+60 °C (protection type "e")
-20..+80 °C (protection type "i")

Process connection	no process connection
Length of neck tube	no neck tube (for T ≤ 100 °C) with neck tube (for T >100 °C)
Electrical connection	silicone cable, standard length 1m
Mounting	by separate clamping ring screw connection
Suitable for potentially explosive atmospheres	zone1, zone 2, zone 21, zone 22

Dimensions

Head / capsule Ø = approx. 15 mm, L = approx. 53 mm

Ordering code

GTF101-Ex 1. 2. 3. 4. 5. 6. -
 □ - □ - □ - □ - □ - □ -
 7. 8. 9. 10.
 □ - □ - □ - □

1. Sensor element	
P	Pt100
S	Pt1000
T	thermocouple type K
U	thermocouple type N
2. Neck tube	
K	no neck tube (for T ≤ 100 °C)
M	with neck tube (for T >100 °C)
3. Ambient temperature	
A	standard range -20..+60 °C
H	higher ambient temperature -20..+80 °C (only available in combination with protection type "i")
4. Length of neck tube HL	
xxx	length in mm (e.g. 050 = 50 mm)
5. Probe diameter D	
Dx	Ø 3 mm, 4 mm, 5 mm, 6 mm, 8 mm (e.g. 8 = 8 mm) Note: Ø 3 mm only for Pt100 / Pt1000 possible. • the min. length is then 60 mm. • the probe tip is Ø 3 mm (for first approx. 30 mm) and then Ø = 6 mm
6. Fitting length EL	
xxxx	length in mm (e.g. 0100 = 100 mm)
7. Cable length (4-wire)	
x	length in m (e.g. 1 = 1 m)
8. Type of protection	
e	increased safety due to potting of encapsulation
i	intrinsic safe
9. Potentially explosive atmospheres	
01	gaseous mixture, zone 1
02	gaseous mixture, zone 2
21	dust, zone 21
22	dust, zone 22
10. Measuring range	
xxx	desired measuring range (e.g. -50..+100 °C)

Ex temperature probe GTF 102-Ex



Process connection	cylindrical or metric thread
Length of neck tube	no neck tube (for $T \leq 100\text{ °C}$) with neck tube (for $T > 100\text{ °C}$)
Electrical connection	silicone cable, standard length 1m
Mounting	by process connection
Suitable for potentially explosive atmospheres	zone 0/1, zone 1, zone 2, zone 20/21 zone 21, zone 22

Dimensions

Head / capsule	$\varnothing = \text{approx. } 15\text{ mm}$, $L = \text{approx. } 53\text{ mm}$
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- For use in potentially explosive gaseous or dust mixtures
- Potential-free temperature probe made of stainless steel
- Assembled according to customer preferences

Characteristics

The screw-in temperature probe GTF 102-Ex is a mounting probe for usage in potentially explosive atmospheres. The modular build up ensures greatest flexibility and the possibility to fit it to the existing conditions. Therefore parameters like length, diameter, cable or type of protection ("i" or "e") can be adjusted.

There are 2 different sensor types available for the measuring unit of GTF 102-Ex: resistance thermometer Pt100, Pt1000 or thermocouple type K, type N (standard). Only sheathed resistance thermometer or sheathed thermocouple are used.

The probes can be customized according to customer requirements.

Technical data

Sensor element : Pt100, PT1000 (sheathed element),
4-wire;
type K (NiCr-Ni) or type N (NiCrSi-NiSi)
sheathed thermocouple

Measuring range

Pt100 / Pt1000 : -200..+100 °C (600 °C with neck tube)
Type K / type N : -200..+100 °C (900 °C with neck tube)

Accuracy

Pt100 / Pt1000 : DIN class B
Type K / type N : class 1
Type of protection : "i" intrinsic safe

Ambient temperature : "e" increased safety
: -20..+60 °C (protection type "e")
: -20..+80 °C (protection type "i")

Ex temperature probe GTF 103-Ex



- For use in potentially explosive gaseous or dust mixtures
- Potential-free temperature probe made of stainless steel
- Assembled according to customer preferences

Characteristics

The DIN-B-head temperature probe GTF 103-Ex is a mounting probe for usage in potentially explosive atmospheres. The modular build up ensures greatest flexibility and the possibility to fit it to the existing conditions. Therefore parameters like length, diameter, cable or type of protection ("i" or "e") can be adjusted.

There are 2 different sensor types available for the measuring unit of GTF 103-Ex: resistance thermometer Pt100, Pt1000 or thermocouple type K, type N (standard). Only sheathed resistance thermometer or sheathed thermocouple are used.

The probe has a DIN-B-head with clamp socket allowing the comfortable connection of your own connection cable. The probes can be customized according to customer requirements. The measuring units of the GTF 103-Ex series (with the exception of D = 3 mm) are exchangeable. The GTF 103-Ex is also available with integrated transmitter.

Technical data

Sensor element : Pt100, PT1000 (sheathed element), 4-wire; type K (NiCr-Ni) or type N (NiCrSi-NiSi) sheathed thermocouple

Measuring range

Pt100 / Pt1000 : -200..+100 °C (600 °C with neck tube)
Type K / type N : -200..+100 °C (900 °C with neck tube)

Accuracy

Pt100 / Pt1000 : DIN class B
Type K / type N : class 1

Type of protection : "i" intrinsic safe
"e" increased safety
Ambient temperature : -20..+60 °C (protection type "e")
-20..+80 °C (protection type "i")

Process connection	cylindrical or metric thread or without thread
Length of neck tube	no neck tube (for $T \leq 100$ °C) with neck tube (for $T > 100$ °C)
Electrical connection	cable entry via pressure screw
Mounting	by process connection or by separate clamping ring screw connection
Suitable for potentially explosive atmospheres	zone 0, zone 0/1, zone 1, zone 2, zone 20 zone 20/21 zone 21, zone 22

Options

The GTF 103-Ex is optionally available with GITT 01-Ex, output signal 4..20 mA, custom-made measuring range. Useable only in protection type "i".

Dimensions

Head / capsule	\varnothing = approx. 63 mm, L = approx. 117 mm, H = approx. 78 mm
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Screw-In Probe GTF 102



- Pt100, Pt1000, NiCr-Ni (type K)
- with thread and cable (loose ends)
- Very robust

Characteristics

The GTF 102 is a temperature probe modified completely according to customer specifications. The GTF 102 is very robust and therefore especially suited for application at high permanent temperatures in air, gases liquids or aggressive environments.

The measurement is done by means of a resistive temperature sensor (Pt100 / Pt 1000) or thermocouple (type K, NiCr-Ni).

The probe is delivered with thread, cable sleeve and 1 m silicone cable (compensation line with loose ends) by default.

Technical data

Sensor element : Pt100 (2- / 3- or 4-wire)
Pt1000 (2-wire)
NiCr-Ni

Measuring range

NiCr-Ni : -200...+1000 °C
Pt100 / Pt1000 : -50...+400 °C

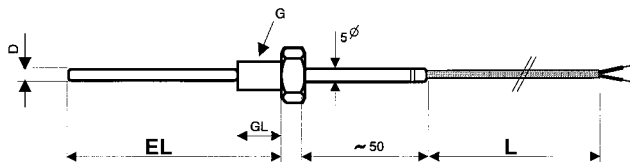
Accuracy : Pt100 / Pt1000: DIN class B
NiCr-Ni: class 1

Tube material : V4A

Thread material : stainless steel

Connection cable : standard: silicone compensation line,
loose ends, length: 1 m long
(up to max. 200)

Dimensions



Ordering code

GTF102 - 1. - 2. - 3. - 4. - 5. - 6. - 7. - 8.

1. Sensor element		
P2	Pt100 (2-wire)	
P3	Pt100 (3-wire)	
P4	Pt100 (4-wire)	
T2	Pt1000 (2-wire)	
K	NiCr-Ni	
2. Accuracy		
1	class 1	<i>only NiCr-Ni</i>
A	DIN class A	<i>only Pt100 / Pt1000</i>
B	DIN class B (Standard)	<i>only Pt100 / Pt1000</i>
D	1/3 DIN class B	<i>only Pt100 / Pt1000</i>
Z	1/10 DIN class B	<i>only Pt100</i>
3. Measuring range MB		
MB0	standard measuring range	
MBX	other measuring range upon request	
4. Probe diameter D		
22	2.2 mm	<i>only with sensor element NiCr-Ni (K)</i>
30	3.0 mm (standard)	
40	4.0 mm	
50	5.0 mm	
60	6.0 mm	
80	8.0 mm	
5. Fitting length EL (±10mm)		
0100	100 mm (standard)	
0150	150 mm	
0250	250 mm	
0500	500 mm	
1000	1000 mm	
1500	1500 mm	
xxxx	any EL in mm (e.g.: 0700 = 700 mm)	
6. Thread		
G1	G ½ (standard)	
G2	G ¼	
G3	G ¾	
G5	G ⅝	
M5	M5	
M6	M6	
M8	M8	
M0	M10	
M2	M12	
M4	M14	
7. Cable length L		
L01	1 m (standard)	
Lxx	desired length in m (e.g. L03 = 3 m)	
8. Cable material		
P	PVC cable up to max. 105 °C	
S	silicone cable up to max. 200 °C (standard)	
T	Teflon cable up to max. 250 °C	
G	glass silk cable up to max. 400 °C	

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