

Product Information

Sensors and Instrumentation

**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
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Ordering code

GTF101-Ex 1. 2. 3. 4. 5. 6. -
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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)

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**Ex temperature probe
GTF 102-Ex**



Process connection	cylindrical or metric thread
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 process connection
Suitable for potentially explosive atmospheres	zone 0/1, zone 1, zone 2, zone 20/21 zone 21, zone 22

Dimensions

Head / capsule	Ø = approx. 15 mm, L = approx. 53 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
"e" increased safety

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

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Ordering code

1. 2. 3. 4. 5. 6.
GTF102-Ex - - - - - -
7. 8. 9. 10. 11. 12.
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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 (fr 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. Type of process connection		
1	G-thread (cylindrical thread)	
2	M-thread (metric thread)	
5. Size of process connection		
1	1/8 (for G-thread)	<i>not possible for zone 0/1 and zone 20/21</i>
2	1/4 (for G-thread)	<i>not possible for zone 0/1 and zone 20/21</i>
3	3/8 (for G-thread)	
4	1/2 (for G-thread)	
5	3/4 (for G-thread)	
6	8x1 (for M-thread)	<i>not possible for zone 0/1 and zone 20/21</i>
7	10x1 (for M-thread)	<i>not possible for zone 0/1 and zone 20/21</i>
8	14x1 (for M-thread)	<i>not possible for zone 0/1 and zone 20/21</i>
6. Length of neck tube HL		
xxx	length in mm (e.g. 050 = 50 mm)	
7. Probe diameter Ø		
x	3 mm, 4 mm, 5 mm, 6 mm, 8 mm (e.g. 8 = 8 mm) Note: <ul style="list-style-type: none"> • 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 • for zone 0/1, 20/21 only Ø 6/8 mm possible 	
8. Fitting length EL		
xxxx	length in mm (e.g. 0100 = 100 mm)	
9. Cable length (4-wire)		
x	length in m (e.g. 1 = 1 m)	
10. Type of protection		
e	increased safety due to potting of encapsulation (only permissible for zone 1 and 2 or zone 21 and 22)	
i	intrinsic safe	
11. Potentially explosive atmospheres		
00	gaseous mixture, zone 0/1 (sensor tube in zone 0 / cable sleeve in zone 1)	
01	gaseous mixture, zone 1	
02	gaseous mixture, zone 2	
20	dust, zone 20/21 (sensor tube in zone 20 / cable sleeve in zone 21)	
21	dust, zone 21	
22	dust, zone 22	
12. Measuring range		
xxx	desired measuring range (e.g. -50..+100 °C)	

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**Ex temperature probe
GTF 103-Ex**



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 ≤ 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	Ø = approx. 63 mm, L = approx. 117 mm, H = approx. 78 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 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

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Ordering code

GTF103-Ex - - - - - - -
1. 2. 3. 4. 5. 6. 7.
8. 9. 10. 11. 12. 13.
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1. Standard signal		
O	without output signal	
G	with output signal 4..20 mA (GITT 01-Ex)	
2. Sensor element		
P	Pt100	
S	Pt1000	
T	thermocouple type K	
U	thermocouple type N	
3. Process connection		
J	with process connection	
N	without process connection (only for zone 1, 2, 21, 22)	
4. Neck tube		
K	no neck tube (for T ≤ 100 °C)	
M	with neck tube (for T >100 °C)	
5. Ambient temperature		
A	standard range	
	zone 0, 20	-20..+40 °C
	zone 0/1, 1, 2, 21, 22	-20..+50 °C (with output signal)
H	higher ambient temperature	
	zone 0, 20	-20..+60 °C
	zone 0/1, 1, 2, 21, 22	-20..+80 °C (only in combination with protection type "i", only possible for types without output signal)
6. Type of process connection		
0	without thread	
1	G-thread (cylindrical thread)	
2	M-thread (metric thread)	
7. Size of process connection		
0	kein Gewinde	
1	1/8 (for G-thread)	not possible for zone 0, 0/1, 20, 20/21
2	1/4 (for G-thread)	
3	3/8 (for G-thread)	
4	1/2 (for G-thread)	
5	3/4 (for G-thread)	
6	8x1 (for M-thread)	
7	10x1 (for M-thread)	not possible for zone 0, 0/1, 20, 20/21
8	14x1 (for M-thread)	
8. Length of neck tube HL		
xxx	length in mm (e.g. 050 = 50 mm)	
9. Probe diameter Ø		
x	3 mm, 4 mm, 5 mm, 6 mm, 8 mm (e.g. 8 = 8 mm) Note: <ul style="list-style-type: none"> • Ø 3 mm only for Pt100 / Pt1000 possible <ul style="list-style-type: none"> • the min. length is then 60 mm • the probe tip is Ø 3 mm (for first approx. 30 mm) and then Ø = 6 mm • for zone 0, 0/1, 20/21 only Ø 6/8mm possible 	

10. Fitting length EL	
xxxx	length in mm (e.g. 0100 = 100 mm)
11. Type of protection	
e	increased safety due to potting of encapsulation (only permissible for zone 1 and 2 or zone 21 and 22)
i	intrinsic safe
12. Potentially explosive atmospheres	
00	gaseous mixture, Zone 0
0A	gaseous mixture, Zone 0/1 (sensor tube in zone 0 / head in zone 1)
01	gaseous mixture, Zone 1
02	gaseous mixture, Zone 2
20	dust, Zone 20
2A	dust, Zone 20/21 (sensor tube in zone 20 / head in zone 21)
21	dust, Zone 21
22	dust, Zone 22
13. Measuring range	
xxx	desired measuring range (e.g. -50..+100 °C)