

## Screw in resistance temperature probe

# GTF102P

## Introduction

GTF102P is a screw-in resistance temperature sensor in a 3mm (other diameters available) stainless steel tube with fixed cable.

It is available as Pt100 or Pt1000 (1/10B, AA, A or B class), thinfilm or wire-wound in custom length.

Three temperature ranges (250/400/600°C) are available to allow best adaption to process requirements between maximum temperature and response times.

Cable can be configured silicon, pvc, ptfe or glass fibre insulated. The cable is protected by an extension tube and supported by a coil spring in the standard version (also available without extension tube and coil spring).



### High Flexibility

Pt100 and Pt1000 elements available in class AA, A, B or 1/10B as thin-film or wire-wound sensor.



### Robust design

3/4/5 or mm protective tube in custom length with process thread.



### Faster response time

LT or MT version in 3mm for fast response times.

## Technical Specifications

### Process Condition

|                   |                |
|-------------------|----------------|
| Media temperature | -200...+600 °C |
|-------------------|----------------|

### Measurement

|                     |                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature sensor  | Pt100, Pt1000, Class 1/10B, AA, A, B<br>For Pt100: Pt100<br>For Pt1000: Pt1000<br>For B class DIN EN 60751 (-50...+500°C, thin-film): B<br>For A class DIN EN 60751 (-30...+300°C, thin film): A<br>For A class DIN EN 60751 (-100...+450°C, wire-wound): A<br>For AA class DIN EN 60751 (0...+150°C, thin film): AA<br>For 1/10B class (-50...+100°C, wire-wound): 1/10B |
| Measuring principle | RTD                                                                                                                                                                                                                                                                                                                                                                       |

### Electrical Connection

|                            |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| Electrical connection type | loose ends<br>For Loose ends with wire end ferrules: loose ends |
|----------------------------|-----------------------------------------------------------------|

### Probe

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable          | PVC, PTFE, Silicon, Flexible fiberglass with steel wire braiding<br>For 2-wire: 2-wire<br>For 3-wire: 3-wire<br>For 4-wire: 4-wire<br>For 1 m PVC cable, -20 ... +105 °C: 1 m PVC<br>For each additional meter (PVC cable): PVC<br>For 1 m silicone cable, -50 ... +200 °C: 1 m Silicon<br>For each additional meter (silicone cable): Silicon<br>For 1 m Teflon cable, -200 ... +250 °C: 1 m PTFE<br>For each additional meter (silicone cable): Silicon<br>For 1 m glass fibre, -50 ... +400 °C: 1 m Flexible fiberglass with steel wire braiding<br>For each additional meter (glass fibre insulated cable): Flexible fiberglass with steel wire braiding<br>For each additional meter (teflon cable): PTFE |
| Probe Diameter | For 3 mm: 3 mm<br>For 4 mm: 4 mm<br>For 5 mm: 5 mm<br>For 6 mm: 6 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Probe length

For 50 mm: 50 mm  
For 100 mm: 100 mm  
For 150 mm: 150 mm  
For 250 mm: 250 mm  
For 500 mm: 500 mm

## Order Code

GTF102P -  1. -  2. -  3. -  4. -  5. -  6. -  7. -  8. -  9. **LE** -  10.

**i** Enter the code for your selected option in the order code field above. The numbering corresponds to the sets from which you can choose. Note that some options can only be used in certain combinations.

| Nr.                             | Code           | Description                                      |
|---------------------------------|----------------|--------------------------------------------------|
| <b>1. Operating temperature</b> | <b>LT</b>      | -200...+250°C at sensors tip                     |
|                                 | <b>MT</b>      | -200...+400°C at sensors tip                     |
|                                 | <b>HT</b>      | -200...+600°C at sensors tip                     |
| <b>2. Measuring element</b>     | <b>P</b>       | Pt100                                            |
|                                 | <b>T</b>       | Pt1000                                           |
| <b>3. Valid range</b>           | <b>B-T</b>     | B class DIN EN 60751 (-50...+500°C, thin-film)   |
|                                 | <b>A-T</b>     | A class DIN EN 60751 (-30...+300°C, thin film)   |
|                                 | <b>A-W</b>     | A class DIN EN 60751 (-100...+450°C, wire-wound) |
|                                 | <b>AA-T</b>    | AA class DIN EN 60751 (0...+150°C, thin film)    |
|                                 | <b>1/10B-W</b> | 1/10B class (-50...+100°C, wire-wound)           |
| <b>4. Thread</b>                | <b>11</b>      | G ¼                                              |
|                                 | <b>12</b>      | G ¼                                              |
|                                 | <b>13</b>      | G ¾                                              |
|                                 | <b>14</b>      | G ½                                              |
| <b>5. Probe diameter Ø</b>      | <b>3</b>       | 3 mm                                             |
|                                 | <b>4</b>       | 4 mm                                             |
|                                 | <b>5</b>       | 5 mm                                             |
|                                 | <b>6</b>       | 6 mm                                             |
| <b>6. Installation length</b>   | <b>0050</b>    | 50 mm                                            |
|                                 | <b>0100</b>    | 100 mm                                           |
|                                 | <b>0150</b>    | 150 mm                                           |
|                                 | <b>0250</b>    | 250 mm                                           |
|                                 | <b>0500</b>    | 500 mm                                           |
|                                 | <b>-xxxx</b>   | each additional 100 mm                           |
| <b>7. Extension</b>             | <b>OKH</b>     | without                                          |
|                                 | <b>550</b>     | with extension sleeve and coil spring            |

| Nr.                        | Code       | Description                                         |
|----------------------------|------------|-----------------------------------------------------|
| <b>8. Cable and length</b> | <b>1-P</b> | 1 m PVC cable, -20 ... +105 °C                      |
|                            | <b>x-P</b> | each additional meter (PVC cable)                   |
|                            | <b>1-S</b> | 1 m silicone cable, -50 ... +200 °C                 |
|                            | <b>x-S</b> | each additional meter (silicone cable)              |
|                            | <b>1-T</b> | 1 m Teflon cable, -200 ... +250 °C                  |
|                            | <b>x-T</b> | each additional meter (silicone cable)              |
|                            | <b>1-G</b> | 1 m glass fibre, -50 ... +400 °C                    |
|                            | <b>x-G</b> | each additional meter (glass fibre insulated cable) |
|                            | <b>x-T</b> | each additional meter (teflon cable)                |
| <b>9. Connection</b>       | <b>LE</b>  | Loose ends with wire end ferrules                   |
| <b>10. Options</b>         | <b>00</b>  | without                                             |
|                            | <b>TU</b>  | Teflon covered probe                                |
|                            | <b>WD</b>  | Cable transition water proof covered                |

## Features

### Constructive design

Available for following max. process temperatures at sensors tip:

LT: -200...250°C (fast response in lower temperature)

MT: -200...+400°C (fast response in medium temperatures)

HT: -200...+600°C (mineral insulated; good response in higher temperatures)

Note: The maximum operating temperature of the cable must not be exceeded on either the cable sleeve or the cable itself!

### Sensor element

Available RTD elements acc. to IEC751/EN60751:

Note: Wire wound sensor and 1/10 class B elements are available for Pt100, only.

- B -196...+600°C or -50...+500°C
- A -100...+450°C or -30...+300°C
- AA(1/3B) - 50...+250°C or 0...+150°C

Other:

- 1/10B -50...+100°C

### Protective tube

Available in 3/4/5 or 6mm diameter in length up to 1000mm in 5mm minimum steppings.

### Process threads

G1/2" (standard) or G1/4"

### Available cable insulation

Type (allowed temperatures)

- PVC (-20...+105°C)
- Silicon (-50...+200°C)
- Teflon (-200...+250°C)
- Glass-fiber with stainless steel mesh (-50...+400°C)

## Instructions

### Dimensions

