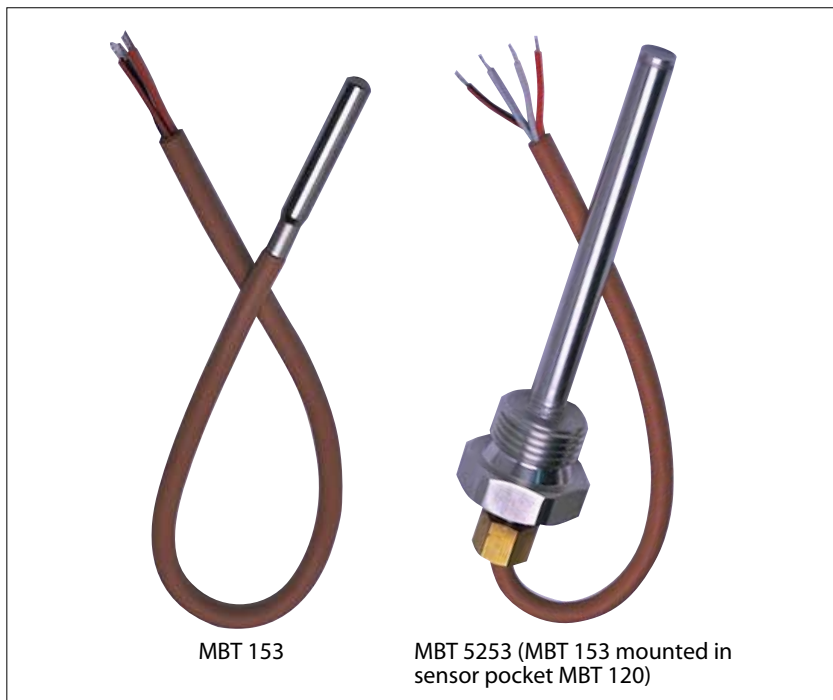


Data sheet

Temperature sensors MBT 153

Sensor pocket MBT 120



The MBT 153 is an universal cable temperature sensor that can be used for controlling cooling water and ventilation systems within general industry applications. This temperature sensor is based on a standardized Pt 100 or Pt 1000 element, which gives a reliable and accurate measurement.

On request the MBT 153 can also be delivered with NTC / PTC elements. The sensor is based on a stainless steel housing with a cable, which makes the sensor extremely flexible.

The MBT 153 can be combined with a sensor pocket, type MBT 120, to protect the silicone cable from the media. The sensor combined with the sensor pocket is named MBT 5253.

The MBT 153 has a PVC or silicone cable as standard but it can be delivered with teflon cable on request.

Features

- For temperature measurement where reliable, robust and accurate equipment is required
- Temperature range -50 – 200 °C
- Short response times
- Pt 100 or Pt 1000 resistance element
- 2- or 4-wire connection
- MBT 120 sensor pocket available

**Technical data
MBT 153**
Response times

| Indicative response times | | | |
|---------------------------|-----------|-----------|-----------|
| Water 0.2 m/s | | Air 1 m/s | |
| $t_{0.5}$ | $t_{0.9}$ | $t_{0.5}$ | $t_{0.9}$ |
| 2 s | 10 s | 28 s | 107 s |

Net weight approx. for sensor, type MBT 153

| Cable length | Net weight approx. |
|--------------|--------------------|
| 3.5 m | 98 g |
| 5.5 m | 154 g |
| 8.5 m | 238 g |

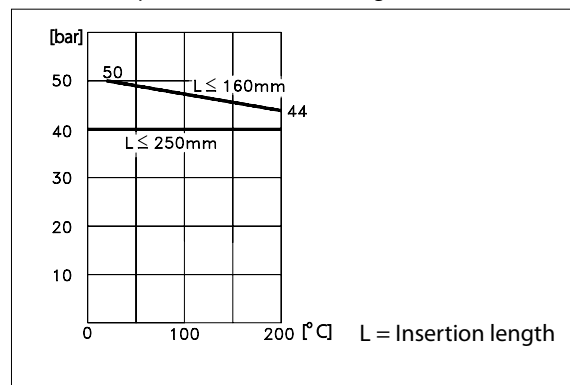
Mechanical and environmental specifications

| | | |
|--|--|---|
| Max. ambient temperature ¹⁾ | PVC: | up to 100 °C |
| | Silicone: | up to 200 °C |
| Sensor tolerance | EN 60751 class B: $\pm (0.3 + 0.005 \times t)$ t = temperature of medium, numerical value | |
| Vibration stability | Shock | 100 g/6 ms |
| | Vibrations | 4 g sine function 5 – 200 Hz, measured acc. to IEC 60068-2-6 |
| Enclosure | IP67 | |
| Cable | PVC 2 × 0.25 mm ² Silicone 2 × 0.25 mm ² (2-wire) Silicone 4 × 0.14 mm ² (4-wire) | |

¹⁾ According to max. allowed temperature for the cable.

Ordering standard

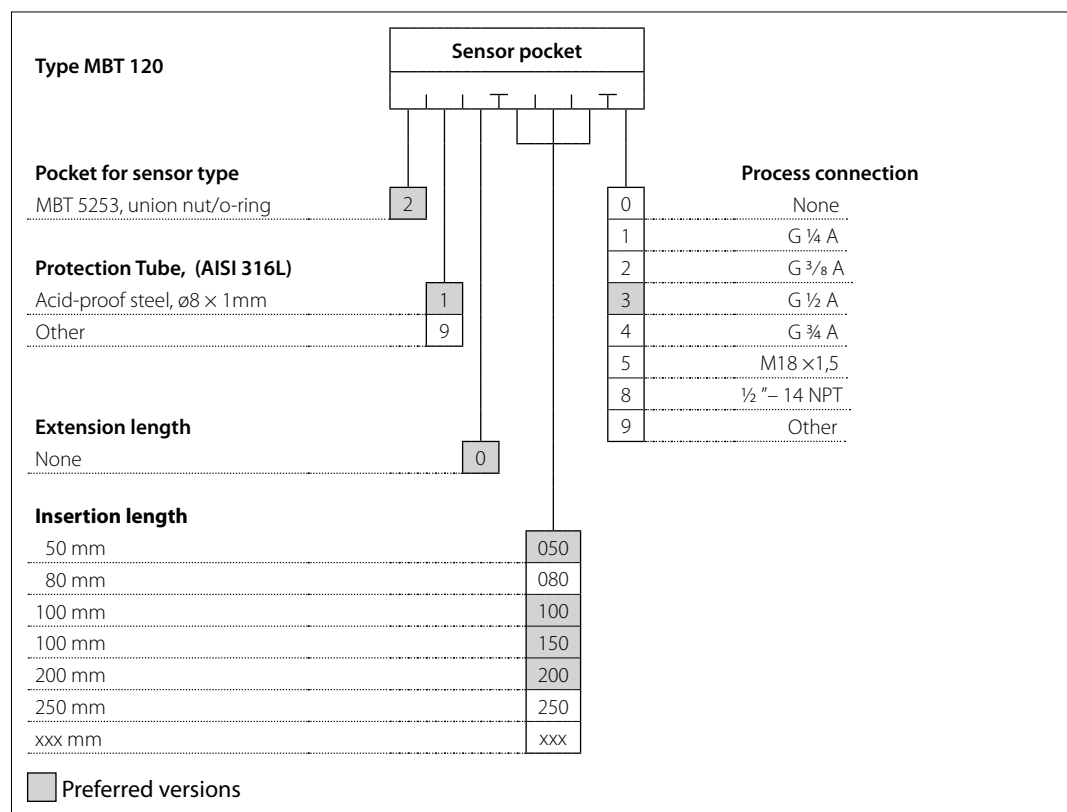
| Type MBT 153 | Sensor | Cable | |
|--|--------|---------|---------------------|
| Measuring range | | | Cable length |
| -50 – 100 °C, PVC cable | 0 | 0 0 5 0 | 0.5 m |
| -50 – 200 °C, Silicone cable | 2 | 0 2 0 0 | 2.0 m |
| -50 – 200 °C, Teflon cable | 4 | 0 3 5 0 | 3.5 m |
| Other | 9 | 0 5 5 0 | 5.5 m |
| | | 0 8 5 0 | 8.5 m |
| | | 1 0 0 0 | 10.0 m |
| | | x x x 0 | xx.x m |
| Resistance value | | | |
| 1 × Pt 100 | 0 | | |
| 2 × Pt 100* | 1 | | |
| 1 × Pt 1000 | 2 | | |
| 2 × Pt 1000* | 3 | | |
| Other | 9 | | |
| Tolerance | | | Connection |
| EN 60751 Class B | 0 0 | | 2 wire |
| Other | 9 1 | | 3 wire |
| | | 2 | 4 wire |
| | | 9 | Others |
| * only available as 2 × 2-wire | | | |
| <input checked="" type="checkbox"/> Preferred versions | | | |

Technical data sensor pocket, MBT 120
Max. load on protection tube according to DIN 43763

General data

| Process connection | | G ½ A, ½ – 14 NPT | G ¾ A |
|----------------------------|-------|-------------------|--------|
| Max. tightening torque | | 50 Nm | 100 Nm |
| Permissible media velocity | Air | 25 m/s | |
| | Water | 3 m/s | |

Net weight approx. for sensor pocket, type MBS 120

| Insertion length | Process connection | | |
|------------------|--------------------|-------|------------|
| | G ½ A | G ¾ A | ½ – 14 NPT |
| 50 mm | 87 g | 128 g | 87 g |
| 100 mm | 96 g | 137 g | 96 g |
| 150 mm | 105 g | 146 g | 105 g |
| 200 mm | 114 g | 155 g | 114 g |
| 250 mm | 123 g | 164 g | 123 g |

Ordering standard


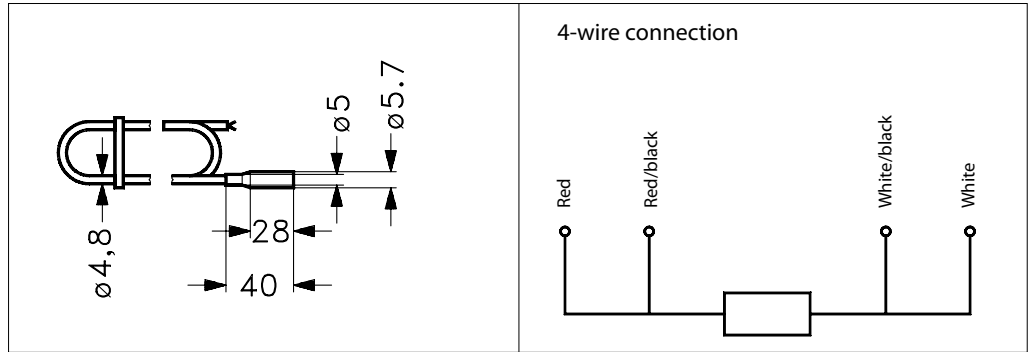
**Technical data
MBT 5253**
Response times. MBT 5253 (MBT 153 mounted with sensor pocket MBT 120)

| Protection tube | Indicative response times | | | |
|-----------------|---------------------------|-----------|-----------|-----------|
| | Water 0.2 m/s | | Air 1 m/s | |
| | $t_{0.5}$ | $t_{0.9}$ | $t_{0.5}$ | $t_{0.9}$ |
| ø8 x 1 | 9 s | 33 s | 95 s | 310 s |

Mechanical and environmental specifications

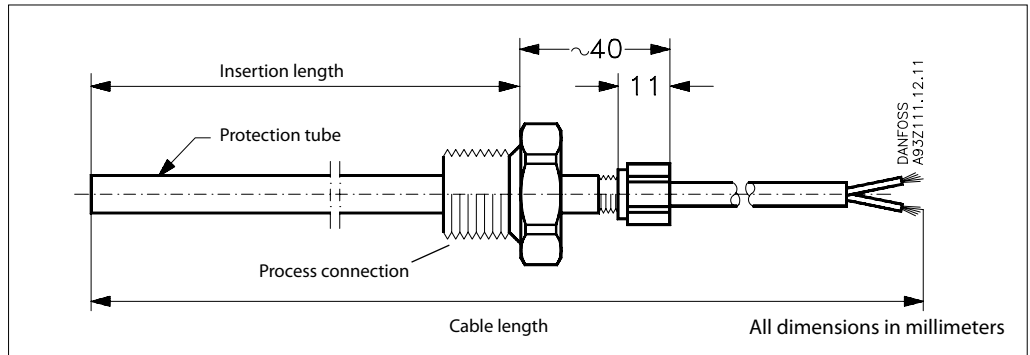
| | | | |
|----------------------------------|---|---|--|
| Max. ambient temperature | 100 °C (limited by the O-ring sealing at cable entry) | | |
| Sensor tolerance | EN 60751 class B: $\pm (0.3 + 0.005 \times t)$ t = temperature of medium, numerical value | | |
| Vibration stability | Shock | 100 g/6 ms | |
| | Vibrations | 4 g sine function 5 – 200 Hz, measured acc. to IEC 60068-2-6 | |
| Enclosure | IP67 | | |
| Cable | PVC 2 x 0.25 mm ² Silicone 2 x 0.25 mm ² (2-wire) \v\nSilicone 4 x 0.14 mm ² (4-wire) | | |
| Materials in contact with medium | -50 – 200 °C: W no.. 1.4435 (AISI 316L) -50 – 800 °C: W. no. 1.4571 (AISI 316 Ti) | | |

**Dimensions and colour code
MBT 153**



**Dimensions
MBT 5253**

MBT 5253: MBT 153 mounted in a MBT 120



| Process connection | G ½ A, ½-14 NPT | G ¾ A |
|--------------------|--------------------|--------|
| Width across flats | HEX 27 | HEX 32 |

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