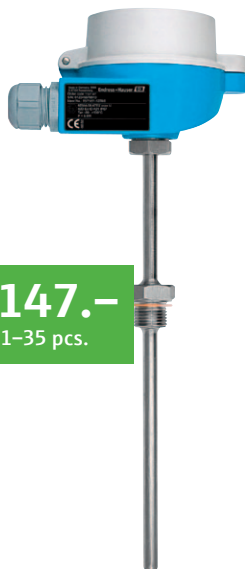


Compact thermometer

Easytemp TSM187



€ 147.-
11-35 pcs.



Complete product information:

www.e-direct.endress.com/tsm187

- High accuracy sensor and transmitter
- Mineral insulated replaceable inset
- Replaceable electronics

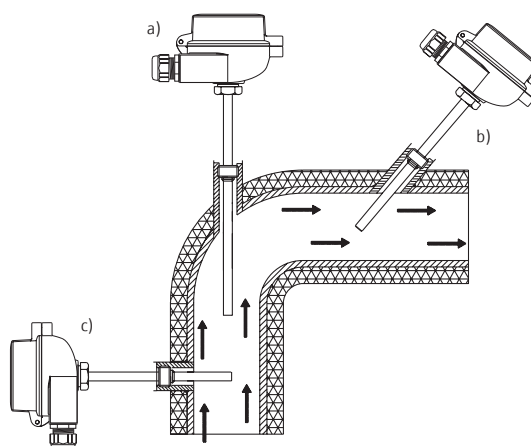
i Specs at a glance:

- **Immersion length (diameter):**
120 / 160 / 250 / 400 mm
(Ø 9 mm)
(4.7 / 6.3 / 9.9 / 15.8 inch
(Ø 0.35"))
- **Temperature range:**
-30 to +170 °C
(-22 to +338 °F),
0 to 100 °C (32 to 212 °F),
0 to 200 °C (32 to 392 °F)
- **Pressure:**
50 bar at +20 °C
(725 PSI at +68 °F)
1 bar at +400 °C
(14.5 PSI at +752 °F)
- **Tolerance:**
<0.08 %, Pt100 Class A
- **Response time:**
≤18 s (T₅₀), ≤55 s (T₉₀)

Application The Easytemp TSM187 compact thermometer range covers a wide variety of market needs. Typical applications can be found in the chemical and pharmaceutical industry, pulp and paper, waste water and food industry. It is widely used in vessels and pipes where a reasonable response time is required.

Function TSM187 assembly includes a replaceable inset, in a mineral insulated sheath with a G½" process connection. The head transmitter (DIN 43729 Form B) is thermal decoupled via a extension neck. The integrated electronics convert the resistance value in a linearly temperature 4 to 20 mA signal.

Installation instructions



Pipe installation:

- At elbows, against the flow
- In smaller pipes, lean against the flow
- Perpendicular to the flow

Technical data

| Sensor | |
|-----------------------|---|
| Sensing element | Platinum resistance, 1 × Pt100 (100 Ω at 0 °C) |
| Measurement range | -30 to 170 °C (-22 to 338 °F), 0 to 100 °C (32 to 212 °F), 0 to 200 °C (32 to 392 °F) |
| Tolerance | Class A to IEC 751: -50 to +250 °C |
| Wiring | Four-wire connection, mineral insulated cable (MgO) |
| Insulation resistance | ≥100 MΩ, test voltage 250 V at ambient temperature |
| Sheath diameter | 6 mm (0.24") |
| Response time value | T ₅₀ /18 s; T ₉₀ /55 s; according to IEC 751 |
| Operating conditions | 50 bar at +20 °C (725 PSI at +68 °F) 1 bar at +400 °C (14.5 PSI at +752 °F) |
| Protecting tube | |
| Shape | DIN 43772 form 2G |
| Diameter | 9 mm (0.35") |
| Material | SS 316Ti/1.4571 |
| Process connection | |
| Shape | DIN 43772 form 2G |
| Screw Thread | G½", 1.4571/SS 316Ti |
| Terminal head | |
| Type | DIN 43729 form B |
| Protection class | IP 66/68 |
| Electrical connection | M20×1.5 |
| Material | Aluminum, polyester powder coated |

| Output (Transmitter, replaceable) | |
|-----------------------------------|--|
| Output signal | 4 to 20 mA transmission is temperature linear, resistance linear |
| Max. load | (V _{power supply} - 8 V)/0.022 A |
| Input current required | ≤3.5 mA |
| Current limit | ≤23 mA |
| Switch on delay | 4 s (during power up I _a = 3.8 mA) |
| Response time | 1 s |

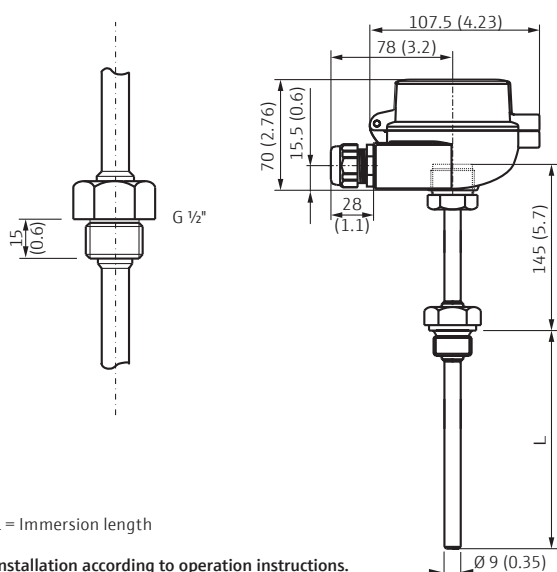
| Signal on alarm (Transmitter, replaceable) | |
|--|------------------------|
| Underranging | Linear drop to 3.8 mA |
| Overranging | Linear rise to 20.5 mA |
| Sensor breakage/ Sensor short circuit | ≥21.0 mA |

| Electrical connection (Transmitter, replaceable) | |
|--|--|
| Power supply | U _b = 8 to 35 V, polarity protected |
| Galvanic isolation | Ū = 3.75 kV |
| Allowable ripple | U _{ss} ≤5 V at U _b ≥13 V, f _{max} = 1 kHz |
| Reference conditions | Calibration temp. +23 °C (73 °F) ± 5 K (9 °F) |

| Accuracy (Transmitter, replaceable) | |
|-------------------------------------|--|
| Influence of power supply | ≤ ±0.01 %/V deviation from 24 V supply |
| Load influence | ≤ ±0.02 %/100 Ω |
| Temperature drift | T _d = ±(15 ppm/K × max. meas. range + 50 ppm/K × preset meas. range) × Δθ |
| Pt100 | 0.2 K or 0.08 % |

| Operating conditions (Transmitter, replaceable) | |
|---|---|
| Ambient temperature | -40 to +85 °C (-58 to +185 °F) |
| Climatic class | As per IEC 60 654-1, Class C |
| Vibration protection | 4 g / 2 to 150 Hz according to IEC 60 068-2-6 |
| EMC | Shock resistance and interference emission as per IEC 61326 and NAMUR NE 21 |

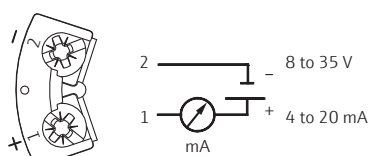
Dimensions in mm (inches)



L = Immersion length

Installation according to operation instructions.

Electrical connection



Power supply and current output

Price table

| Easytemp TSM187 | | Order no. | Price/pcs. in € | | |
|---------------------------------|--------------------|------------|-----------------|---------|----------|
| Measuring Range | Immersion Length L | | 1 to 3 | 4 to 10 | 11 to 35 |
| -30 to +170 °C (-22 to +338 °F) | 120 mm (4.7") | TSM187-ADD | 180.- | 162.- | 147.- |
| | 160 mm (6.3") | TSM187-BDD | 180.- | 162.- | 147.- |
| | 250 mm (9.9") | TSM187-CDD | 183.- | 165.- | 150.- |
| | 400 mm (15.8") | TSM187-DDD | 187.- | 168.- | 153.- |
| 0 to +100 °C (32 to 212 °F) | 120 mm (4.7") | TSM187-AFE | 180.- | 162.- | 147.- |
| | 160 mm (6.3") | TSM187-BFE | 180.- | 162.- | 147.- |
| | 250 mm (9.9") | TSM187-CFE | 183.- | 165.- | 150.- |
| | 400 mm (15.8") | TSM187-DFE | 187.- | 168.- | 153.- |
| 0 to +200 °C (32 to 392 °F) | 120 mm (4.7") | TSM187-AFH | 180.- | 162.- | 147.- |
| | 160 mm (6.3") | TSM187-BFH | 180.- | 162.- | 147.- |
| | 250 mm (9.9") | TSM187-CFH | 183.- | 165.- | 150.- |
| | 400 mm (15.8") | TSM187-DFH | 187.- | 168.- | 153.- |

Prices are applicable for Latvia until 30.09.2019, in Euro per unit. At Endress+Hauser sales and delivery terms excluding value added tax (VAT), cost of packing and dispatch. Delivery times: 48 hours or 5 working days – please check www.e-direct.endress.com for exact delivery times. Endress+Hauser retains the right to change or modify pricing at any time. Prices can be verified prior to ordering on www.e-direct.endress.com.



Complete product information:

www.e-direct.endress.com/tsm187

More products to complete
your measuring point ...



Vibronic limit switch
Soliphant T FTM20



Pressure sensor
Cerabar PMC21



Barrier
RB223