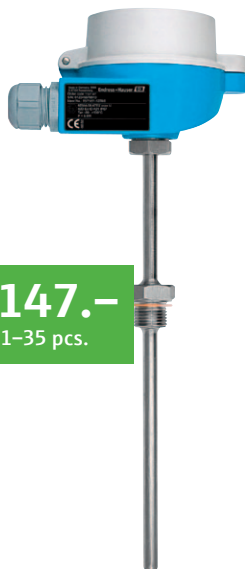


Compact thermometer

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

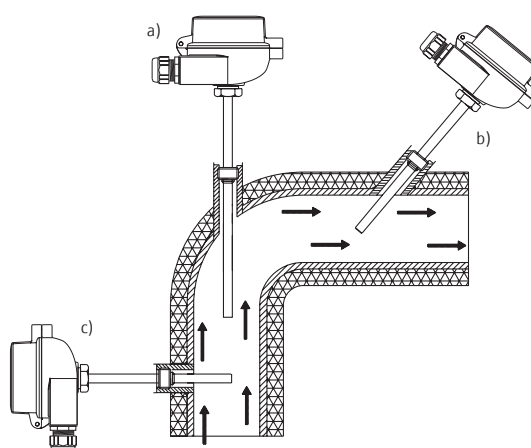
i Specs at a glance:

- **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 G $\frac{1}{2}$ " 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, leant 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

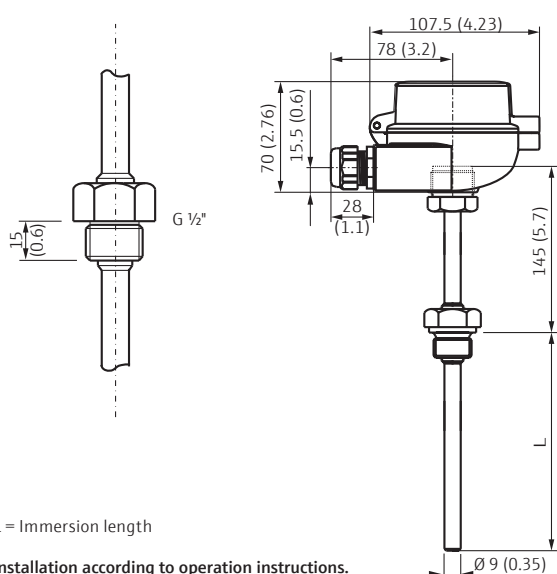
Signal on alarm (Transmitter, replaceable)	
Underranging	Linear drop to 3.8 mA
Overranging	Linear rise to 20.5 mA
Sensor breakage/ Sensor short circuit	≥21.0 mA

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)

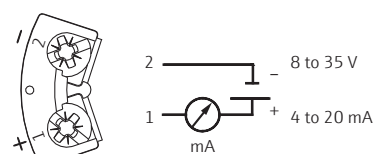
Accuracy (Transmitter, replaceable)	
Influence of power supply	≤ ±0.01 %/V deviation from 24 V supply
Load influence	≤ ±0.02 %/100 Ω
Temperature drift	T _d = ±(15 ppm/K × max. meas. range + 50 ppm/K × preset meas. range) × Δθ
Pt100	0.2 K or 0.08 %

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)



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 Austria until 30/09/2019, in Euro per unit, net excluding value added tax (VAT), cost of packing and dispatch. The terms of sales and delivery of Endress+Hauser are applicable. 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