

Compact thermometer for simple applications

## Easytemp TSM487



€ 126.-  
11-35 pcs.



Complete product information:  
[www.e-direct.endress.com/tsm487](http://www.e-direct.endress.com/tsm487)

- High accuracy in sensor and transmitter
- Fiberglass insulated replaceable insert
- Replaceable electronics

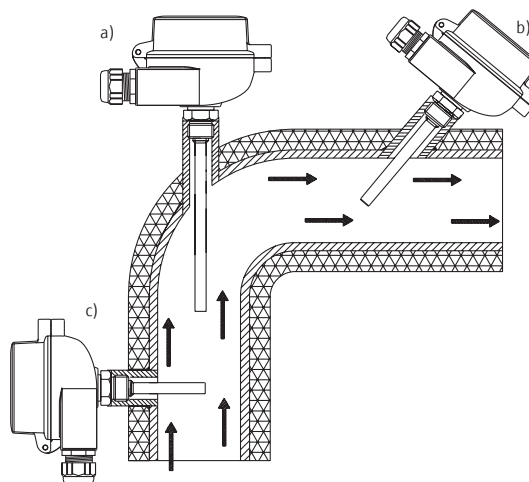
### **i** Specs at a glance:

- **Immersion length (diameter):**  
50 / 100 / 150 / 250 mm  
( $\varnothing$  6 mm)  
2 / 3.9 / 5.9 / 9.8 inch  
( $\varnothing$  0.24")
- **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:**  
20 bar at +20 °C  
(290 PSI at +68 °F)
- **Tolerance:**  
<0.08 %, Pt100 Class A
- **Response time:**  
 $\leq 3.5$  s ( $T_{50}$ ),  $\leq 8$  s ( $T_{90}$ )

**Application** The Easytemp TSM487 temperature compact thermometer is widely used in many light or medium duty applications either in vessels or in pipes with low pressures and no extreme temperatures.

**Function** The fiber isolated inset sits in a protecting tube with process connection G $\frac{1}{2}$ " cable. The head transmitter (DIN 43729 form B) is made of aluminium. 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 acc. to IEC 751: -50 to +250 °C
Wiring	Four-wire connection, fiberglass insulated cable
Insulation resistance	≥100 MΩ, test voltage 250 V at ambient temperature
Maximum pressure	20 bar at 20 °C (290 PSI at +68 °F)
Response time value	T <sub>50</sub> /3.5 s; T <sub>90</sub> /8 s; according to IEC 751

### Process connection

Version	DIN 43772 form 2G
Connection	G½", 1.4571/SS 316Ti; ½" NPT-M, 1.4404/SS 316 L

### 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
Maximum load	(V <sub>power supply</sub> - 8 V)/0.022 A
Input current required	≤3.5 mA
Current limit	≤23 mA
Switch on delay	4 s (during power up I <sub>b</sub> = 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 <sub>b</sub> = 8 to 35 V, polarity protected
Galvanic isolation	Û = 3.75 kV
Allowable ripple	U <sub>ss</sub> ≤5 V at U <sub>b</sub> ≥13 V, f <sub>max</sub> = 1 kHz
Reference conditions	Calibration temp. +23 °C (73 °F) ±5 K (9 °F)

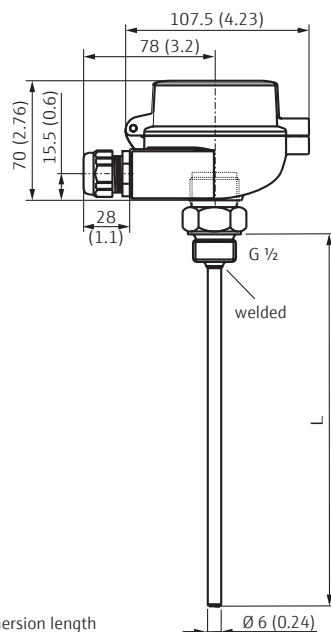
### Accuracy (Transmitter, replaceable)

Influence of power supply	≤ ±0.01 %/V deviation from 24 V supply
Load influence	≤ ±0.02 %/100 Ω
Temperature drift	T <sub>d</sub> = ±(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

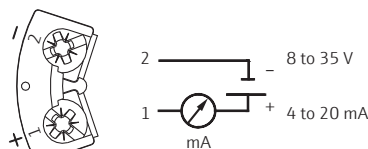
## Dimensions in mm (inches)



L = Immersion length

Installation according to operation instructions.

## Electrical connection



Power supply and current output

## Price table

Easytemp TSM487		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)	50 mm (2")	TSM487-ADD	154.-	139.-	126.-
	100 mm (3.9")	TSM487-BDD	154.-	139.-	126.-
	150 mm (5.9")	TSM487-CDD	157.-	141.-	129.-
	250 mm (9.8")	TSM487-DDD	158.-	142.-	130.-
0 to 100 °C (32 to 212 °F)	50 mm (2")	TSM487-AFE	154.-	139.-	126.-
	100 mm (3.9")	TSM487-BFE	154.-	139.-	126.-
	150 mm (5.9")	TSM487-CFE	157.-	141.-	129.-
	250 mm (9.8")	TSM487-DFE	158.-	142.-	130.-
0 to 200 °C (32 to 392 °F)	50 mm (2")	TSM487-AFH	154.-	139.-	126.-
	100 mm (3.9")	TSM487-BFH	154.-	139.-	126.-
	150 mm (5.9")	TSM487-CFH	157.-	141.-	129.-
	250 mm (9.8")	TSM487-DFH	158.-	142.-	130.-

Prices are applicable for Germany 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](http://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](http://www.e-direct.endress.com).



Complete product information:  
[www.e-direct.endress.com/tsm487](http://www.e-direct.endress.com/tsm487)

More products to complete  
your measuring point ...



Point level switch  
Liquiphant FTL31



Pressure switch  
Ceraphant PTC31B



Power supply  
RN221N