

Digital Contact Thermometer

IEC 751 - ITS 90 - ASTM E644 - ASTM E1137 - ASTM E2877



- ⊕ 0.01 or 0.001°C resolution
- ⊕ Fast response ($T_{63} < 6$ seconds)
- ⊕ Clear OLED Display
- ⊕ Up to $\pm 0.01^\circ\text{C}$ precision
- ⊕ °C / °F selectable
- ⊕ ITS 90, ASTM E2877 Class A
- ⊕ Delivered with 5 calibration points

General

This thermometer is referred to as a Resistive Contact Thermometer (RCT) or Resistive Thermometer Device (RTD). The E20 thermometer uses a six points ITS 90 calibration. Basically there are two versions:

- 0.01°C reading and an accuracy of $\pm 0.02^\circ\text{C}$ over the full scale
- 0.001°C reading and an accuracy of $\pm 0.01^\circ\text{C}$ over the full scale

Each version offers two different temperature ranges:

+20 .. +120°C (+68 .. 248°F)

-40 .. +140°C (-40 .. 284°F)

The thermometer element consists of a very thin stainless steel probe. This probe ensures a very fast temperature response. Due to its low thermal mass dampening out of rapid temperature changes is prevented. This fast response guarantees a minimum influence on the measurement itself and no significant error can be measured due to a slow measurement response.

Item	Unit	
Ordering code		For temperature range, please see tables on the next pages
Range		-40 .. +140°C/-40..302°F, please see tables on the next pages
Reading		°C or °F menu selectable
Interface		USB
Resolution	[°C/°F]	0.01 or 0.001, please see tables on next pages
Accuracy	[°C]	Up to ± 0.01 , please see tables on next pages
Linearity	[°C]	± 0.01
Drift annual	[°C]	± 0.001
Response T_{63}	[Sec]	< 6
Power		USB or 5V - mains adapter RJ11
Dimensions	[mm]	62 x 39 x 22 (excluding probe)
Probe	[mm]	65 x 6mm - 115 x 3
Probe material		304 Stainless steel
Weight	[gr]	42
CE		Conforms to CE regulation

Construction

The thermometer consists of a stainless steel PT100 probe and a small electronic circuit board which is placed in a plastic (ABS) housing. The PT100 probe is thermally insulated from this housing using a PTFE bush. The electronics are powered via USB cable. The supplied 5-Volt wall adapter is designed to accommodate a wide range of voltages and frequencies (85~260V/50~60Hz).

Calibration

The thermometer is factory calibrated for the specific range. A calibration certificate comes standard with the thermometer and is traceable to an ISO 17025 certified laboratory. The calibration certificate offers at least 5 calibration points over the full range. Additional test points at specific temperatures can be requested (P/N **10T6098**).

USB

The thermometer can be connected to any "USB – A" device to power it. Special software enables upload of calibration parameters over the USB. Graphical display and logging software is available from our website. See <https://tamson-instruments.com/downloads> and choose "Tamcom R4.00 communication program"

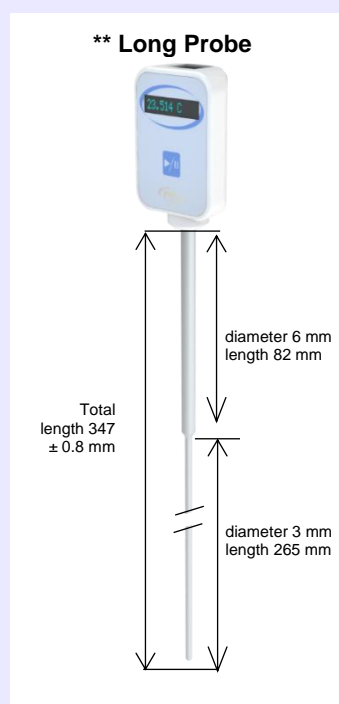
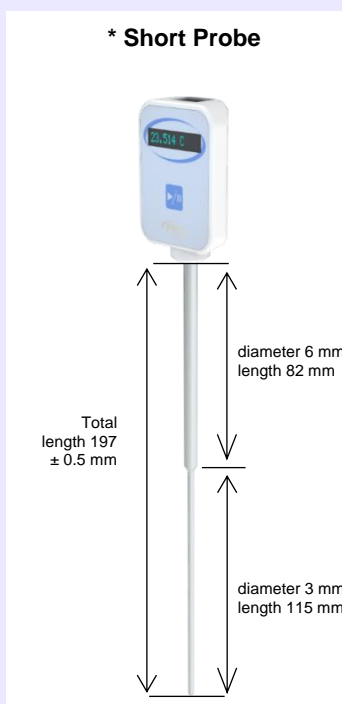
Standards and regulation

The thermometer meets the following standards and regulations: CE, IEC 751, ITS 90, ASTM E644, ASTM E1137, and ASTM E2877. For calibration please see

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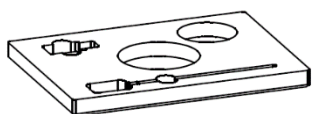


Range	20 .. + 120°C	-40 .. + 140°C
Resolution 0.01 (two decimals) accuracy $\pm 0.02^\circ\text{C}$ short* PT-100 probe	19T4023	19T4024
Resolution 0.001 (three decimals) accuracy $\pm 0.01^\circ\text{C}$ short* PT-100 probe	19T4033	19T4034
Resolution 0.01 (two decimals) accuracy $\pm 0.02^\circ\text{C}$ long** PT-100 probe	N/A	19T4044
Resolution 0.001 (three decimals) accuracy $\pm 0.01^\circ\text{C}$ long** PT-100 probe	N/A	19T4054



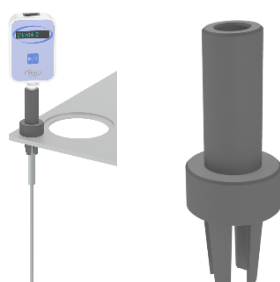
E20 Thermometer

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Standard included with E20 Thermometer		
Part Number	Picture	Description
10T6097		Works certificate with test points. This certificate is standard included with the delivery.
21T0205		Suitcase with foam insert for E20 thermometer with short probe.
24T0013		5V Adapter
28T2040		Cable RJ11 to USB-A 1.8 meter

Optional		
Part Number	Picture	Description
10T6098		Optional additional verification temperature point mentioned on P/N 10T6097 , price per point. [-40 .. +145°]

Accessory		
Part Number	Picture	Description
14T0303		Adapter to insert an E20 thermometer in a TV2000, TV4000, TV4000DC, TV4000LT, TV7000, TV7000DC, TV7000LT, TV12, TV12LT and TV2500.