



# ENCARDIO RITE



## RESISTANCE TEMPERATURE PROBE

### MODEL ETT-10TH / ETT-10PT

#### OVERVIEW

The Encardio-rite model ETT-10TH resistance temperature probe is a low mass water proof temperature probe for measurement of temperature between  $-20$  to  $70^{\circ}\text{C}$ . Due to its low thermal mass it has a fast response time. Model ETT-10TH resistance temperature probe is specially designed for measurement of surface temperatures of steel & measurement of surface temperature of concrete structures. ETT-10TH can be embedded in concrete for measurement of bulk temperature inside concrete and can work submerged under water.

The Encardio-rite model ETT-10PT RTD temperature probe can also be used for similar applications. It has excellent stability and accuracy that makes it well suited for long-term installations where high accuracy and reliability is required.

#### DESCRIPTION

##### ETT-10TH RESISTANCE TEMPERATURE PROBE

ETT-10TH resistance temperature probes are fully interchangeable. The temperature readings will not differ by more than  $0.2^{\circ}\text{C}$  over the specified working temperature range. This allows a single indicator to be used with any ETT-10TH probe without recalibration. Encardio-rite's model EDI-51V vibrating wire indicator when used with ETT-10TH directly shows the probe temperature in degree Celsius.

ETT-10TH temperature probe consists of a resistance-temperature curve matched thermistor epoxy encapsulated in a copper tubing for faster thermal response and environmental protection. The tube is flattened at the tip so that it can be fixed to any reasonably flat metal or concrete surface for measurement of surface temperature. The flat tip of the probe can be fixed to most surfaces with the help of easily available two part epoxy adhesives. If desired, the probe can also be bolted down to the surface of the structure.

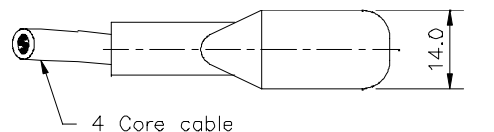
The temperature probe is provided with a four core cable used as standard in all Encardio-rite vibrating wire strain gages. The pair of white and green coloured wires are used for the thermistor which is

#### FEATURES

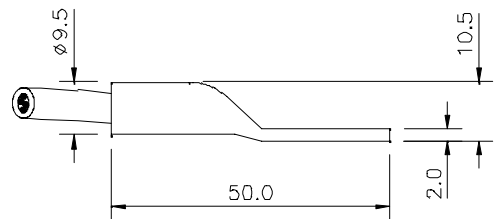
- ◆ Precision, low cost extremely reliable sensor.
- ◆ Suitable for both surface mount and embedded applications.
- ◆ Low thermal mass results in faster response time.
- ◆ Fully interchangeable, one indicator can read all sensors.
- ◆ Weather proof body, rated IP-68.
- ◆ Indicators readily available for direct temperature display.

same as for other Encardio-rite vibrating wire sensors with integral thermistor temperature sensor. The pair of red and black wires is left unused. The use of a uniform colour scheme across different sensors makes it easier to make error free connections to junction box or data logger terminal panels.

#### DIMENSIONS



TOP VIEW



SIDE VIEW

(All dimensions in mm)

## ETT-10PT RTD TEMPERATURE PROBE

ETT-10PT RTD temperature probe consists of a ceramic resistance element (Pt 100) with DIN IEC 751



(former DIN 43760) European curve calibration. The resistance element is housed in a closed-end robust stainless steel tubing which protects the element against moisture.

The resistance temperature probe works on the principle that sensor resistance is a function of sensed temperature. The platinum RTD has very good accuracy, linearity, stability and repeatability.

The model ETT-10PT resistance temperature probe is provided with a three core shielded cable. The configuration is shown in figure below. The red wire provides one connection and the two black wires together provides the other. Thus, compensation is achieved for lead resistance and temperature change in lead resistance.

The resistance temperature sensor readings can be read easily using a digital RTD temperature indicator.

## SPECIFICATIONS

### ETT-10TH

<b>Sensor type</b>	R-T curve matched NTC thermistor, equivalent to YSI 44005, Dale # 1C3001-B3, Alpha # 13A3001-B3.
<b>Operating temperature range</b>	-20 to 70°C
<b>Accuracy</b>	± 0.2°C
<b>Resistance</b>	3000 Ohm at 25°C
<b>Body material</b>	Tin plated copper.
<b>Electrical connection</b>	4 core PVC sheathed cable.

### ETT-10PT

<b>Sensor type</b>	Pt 100
<b>Operating temperature range</b>	-20 to 70°C
<b>Accuracy</b>	± 0.3°C + 0.005  t )°C
<b>Resistance</b>	100 $\Omega$ at 0°C
<b>Body material</b>	Stainless steel.
<b>Electrical connection</b>	3 core shielded cable.
<b>Calibration</b>	DIN IEC 751
<b>Curve (European)</b>	$a = 0.00385 \text{ Ohms/Ohm/}^\circ\text{C}$

## ENCARDIO-RITE ELECTRONICS PVT. LTD.

A-7 Industrial Estate, Talkatora Road, Lucknow, UP 226011, India

Tel +91 (522) 661044, 661040 Fax +91 (522) 661043 E-mail [sales@encardio.com](mailto:sales@encardio.com)

Visit us at: [www.encardio.com](http://www.encardio.com)

DATA SHEET 1086-02 P