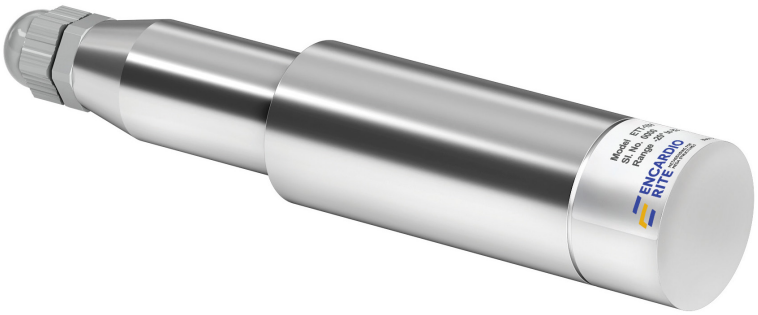
ENCARDIO RITE
METASENSING FOR MEGA STRUCTURES

VIBRATING WIRE TEMPERATURE METER

MODEL ETT-10V

DATASHEET



OVERVIEW

The ETT-10V vibrating wire temperature meter by Encardio Rite is designed to measure the internal temperature in concrete structures, water, and other related applications. It is ideal for monitoring temperature variations that cause thermal stress in mass concrete during construction. By providing accurate and real-time temperature data, this sensor plays a critical role in ensuring safe construction practices, controlling artificial cooling, and monitoring the effects of temperature-related stresses. It is particularly used to study temperature effects on structures, verify design assumptions, and enhance the safety and efficiency of construction projects.

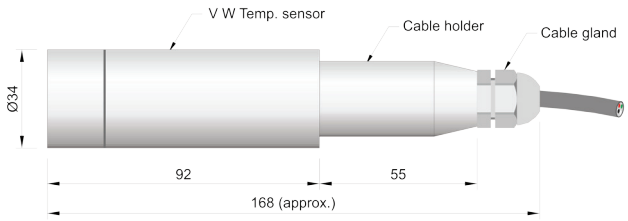
The vibrating wire temperature meter is designed on the principle that dissimilar metals have different linear coefficient of expansion with temperature variation. The vibrating wire temperature meter basically consists of a magnetic, high tensile strength stretched wire, the two ends of which are fixed to any dissimilar metal in a manner that any change in temperature directly affects the tension in the wire and thus its natural frequency of vibration. The dissimilar metal, in the case of the Encardio-rite temperature meter, is aluminium. As the temperature signal is converted into frequency, the read-out unit which is used for other vibrating wire sensors can also be used for monitoring temperature. The data can also be automatically collected at a desired frequency, stored and transmitted to remote server by a suitable datalogger.

FEATURES

- **High accuracy:** Accuracy of ±0.5% (standard) and ±0.1% (optional) for precise temperature measurements.
- **Wide range:** Operating range of -20°C to 80°C, suitable for various industrial and construction environments.
- **Durable construction:** Stainless steel housing with IP-68 rating, ensuring protection against dust, moisture, and environmental damage.
- **Versatile datalogging:** The sensor is compatible with various readout units for manual data collection. For continuous monitoring, it can be connected to a suitable datalogger, allowing for data acquisition at desired frequencies. Encardio Rite offers a range of NexaWave dataloggers equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.
- **Hermetically sealed:** Electron beam welding ensures the sensor is hermetically sealed, offering long-term reliability.
- **Vibration resistant:** The sensor can withstand vibrations up to 2g and frequencies ranging from 50-500 Hz.
- **Over-voltage protection:** Includes bipolar plasma surge arrestor to protect against over-voltage and lightning strikes.
- **Remote data logging:** Compatible with portable readout units and dataloggers for remote monitoring and data collection.
- **Infrastructure data intelligence platform:** Proqio software facilitates data processing, analysis, and real-time visualization and generates instant alarms for critical events to all stakeholders.

SPECIFICATIONS

Transducer type	Vibrating wire
Model	ETT-10V
Service	Embedment in concrete
Accuracy	± 0.5 % fs normal ± 0.1 % fs optional
Range	-20° to 80 °C
Coil resistance	120-150 Ohm
Insulation resistance	>500 MOhm at 12 V
Humidity	0-100 % RH
Vibration limit	2 g, 50 - 500 Hz
Read out	Portable readout unit
Enclosure	Stainless steel. Hermetically sealed by electron beam welding to IP-68.
Over voltage/ lightning protection	Provided with bipolar plasma surge arrestor to protect against over-voltage/ lightning strikes.



*All specifications are subject to change without prior notice

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Encardio-Rite Electronics Pvt. Ltd. A-7, Industrial Estate, Talkatora Road, Lucknow, UP-226011, India | info@encardio.com | T: +91 522 2661039-320