Monitor with Confidence

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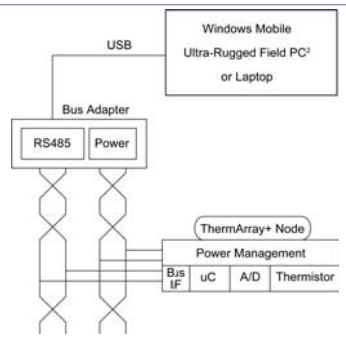
ISO 9001

Ultra-Rugged Field PC² showing direct node readings.

Thermistor String shown connected to the Ultra-Rugged Field PC² for direct reading. The ThermArray⁺ cable is a waterproof low-temperature cable which provides power and digital data access to the ThermArray⁺ nodes. It includes waterblock filling and high-strength anti-stretch Kevlar® for precise and durable positioning.

Each node consists of a precise, individually addressed, and individually calibrated digital temperature sensor which is molded directly onto the ThermArray⁺ cable.

Diagram depicting ThermArray⁺ nodes along a digital thermistor string.



PRODUCT CATEGORY:
THERMISTORS + TEMPERATURE

Digital ThermArray⁺ System

RST's Digital ThermArray⁺ System provides precision thermal gradient information for geotechnical, geothermal, and marine applications. The main component of the system consists of digital thermal data acquisition nodes distributed along a single cable, typically spaced at uniform intervals. This digital technology allows for many nodes to be placed on one string without greatly increasing the overall cost. Data setup and collection is performed by a stationary data logger system (typically an RST flexDAQ Data logger System), a laptop or an Ultra-Rugged Field PC² for portable readings. The Digital Thermarray⁺ System is compatible with other DT Bus sensors, including tilt and pressure. Different sensor types can be combined on one DT Bus.

> DIGITAL VS ANALOG

Digital ThermArray⁺ System advantages over standard (non-digital) thermistor strings:

Fixed cable diameter of 7mm (19 mm at node points) regardless of the number of nodes required (up to 250 maximum). The digital thermistor string cable internally houses 4 wires which serve all nodes throughout the string. Analog systems require 2 wires per node which hinders installation, pose heatsink issues, and increases costs.

Each node can be individually addressed and simultaneously read through the Ultra Rugged Field PC² via a single connection, thus reducing data collection time. Analog systems require the user to physically locate the two wires from each node along the string to collect a reading.

Noise Immunity - digital technology is extremely immune to noise vs analog microvolts.

Power Efficiency - the ThermArray⁺ system uses less than 10% of power consumed by analog systems.

Credible Performance - overall higher accuracy and resolution compared to analog systems.

> APPLICATIONS

Provides precision thermal gradient information in geotechnical, geothermal, and marine applications.

> FEATURES

- Up to 256 nodes on a single, 4-conductor, Kevlar® reinforced cable.
- Bussed digital thermistor points.
- High accuracy of 0.07°C.
- No cable resistance errors.
- Optional piezometer(s), conductivity sensor(s) can be positioned along cable length.
- Readout using Ultra-Rugged Field PC2 or data acquisition system.
- Minimal conducted heat thermal error.

> BENEFITS

- **Increase Safety**
- **Increase Productivity**
- **High Accuracy**
- **High Reliability**

ORDERING

ITEM	PART #
Digital ThermArray⁺ System	TH0100

Optional connection for bottom weight also available

SPECIFICATIONS

ITEM	SPECIFICATION
THERMARRAY NODE	
Temperature Range	-20° to 50°C
Resolution	0.01°C
Accuracy	0.07°C
Address Range	1 - 250
Power Supply Voltage	7 - 18 VDC
Standby Current per Node	10 μA
Max Current per Node	280 μA
Acquisition Time	1 second
Node Length	90 mm
Node Diameter	19 mm
THERMARRAY CABLE	
Conductors	4
Diameter	7 mm
Breaking Strength	5 kN
Maximum Segment Length	500 m
Minimum Node Spacing	150 mm
Mechanical Terminal	6 mm x 1 mm threaded
Maximum Nodes	250

*Kevlar® is a registered trademark of E.I. duPont de Nemours and Company or its affiliates.
RST Instruments Ltd. reserves the right to change specifications without notice. THB0003Q