GREYSTONE
ENERGY SYSTEMS INC

FLYING LEAD NETWORK TEMPERATURE SENSOR
TNFL Series

The single point flying lead network temperature sensor incorporates a precision sensor encapsulated in a 6 mm (0.236") OD X 50 mm (2"), 304 series stainless steel probe. Standard wire length is 1.83 m (6'). All probes are constructed to provide excellent heat transfer, fast response and are potted to resist moisture penetration. The transmitter provides a BACnet® or Modbus signal for network connection. A compact ABS enclosure with a hinged and gasketed cover is provided for ease of installation.

SPECIFICATION:

Power Supply ..... **BACnet®:** 24 Vac/dc ±10% (non-isolated half-wave rectified)
Modbus: 24 Vac/dc ±20% (non-isolated half-wave rectified)
Consumption ..... **BACnet®:** 25 mA max @ 24 Vdc
Modbus: 10 mA max @ 24 Vdc
Protection Circuitry ..... Reverse voltage protected and over voltage protected
Operating Environment ... -40 to 50°C (-40 to 122°F), 5 to 95 %RH non-condensing
Probe Material ..... 304 series stainless steel
Probe Diameter ..... 6mm (0.236")
Wire Material ..... FT-6 rated plenum cable (22 AWG)
Wire Length ..... 3.05m (10')
Wiring Connections ..... Screw terminal block (14 to 22 AWG)
Enclosure ..... ABS - UL94-V0, IP65 (NEMA4X)
E style includes thread adapter (1/2" NPT to M16) and cable gland fitting
Country of Origin ..... Canada

Temperature

Sensing Element ..... NTC thermistor
Accuracy ..... ±0.2°C (±0.36°F) @ 0 to 70°C (32 to 158°F)
Probe Sensing Range ..... -20 to 60°C (-4 to 140°F)
Resolution ..... 0.1°C/°F

BACnet® Communications Interface

Hardware ..... 2 wire RS-485
Software ..... Native BACnet® MS/TP protocol
Baud Rate ..... 9600, 19200, 38400, 57600, 76800, or 115200 (auto-detect)
Network Address Range .. Locally set to 0-127
Serial Configuration 8N1

Modbus Communications Interface

Hardware ..... 2 wire RS-485
Software ..... Native Modbus MS/TP protocol (RTU)
Baud Rate ..... 9600, 19200, 38400, 57600, 76800, or 115200 (auto-detect)
Network Address Range .. Locally set to 1-255
Parity ..... None
Stop Bits 1
Error Checking ..... A001 (CRC-16 reverse)
Serial Configuration 8N1

PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
TNFL	Flying Lead Network Temperature Sensor

CODE	Enclosure
A	ABS, with hinged & gasketed cover
E	Same as A, with thread adapter & cable gland fitting

CODE	Sensor
20X	NTC Thermistor, ±0.2°C

CODE	Communication Output
B	BACnet®
M	Modbus

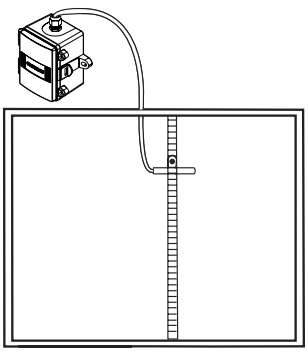
Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

TYPICAL INSTALLATION:

For complete installation and wiring details, please refer to the product installation instructions.

A typical application for the flying lead type probes is to monitor a single point temperature within the duct. Install the probe in a straight section of duct at a suitable distance downstream from any heating, cooling or humidification devices. Drill a 3/8 hole in the top of the duct and hang the sensor in the airstream.

The enclosure provides mounting tabs for ease of installation.



RoHS COMPLIANT

BACnet® COMMUNICATION

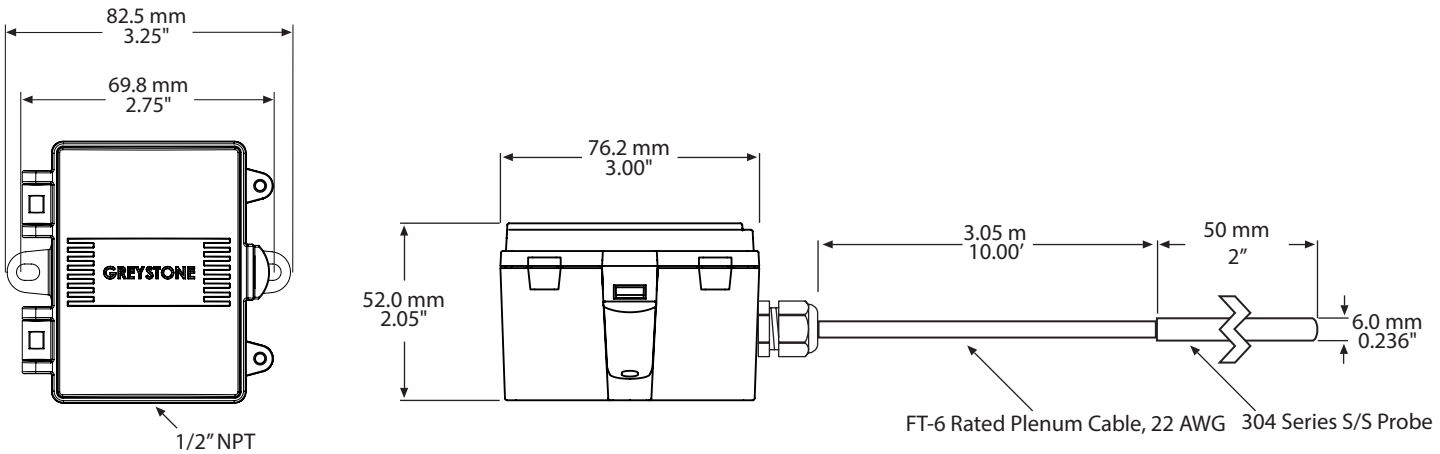
BACnet® is a data communication protocol for building automation and control networks. The sensor communicates on a standard 2-wire RS-485 MS/TP network designed to run at speeds from 9600 to 115200 baud over twisted pair wiring.

BACnet® is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of BACnet® listed products to the requirements of ASHRAE Standard 135 is the responsibility of BACnet® International (BI). BTL is a registered trademark of BI.

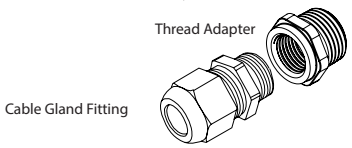
MODBUS COMMUNICATION

Modbus is a network protocol for industrial manufacturing environments. The sensor communicates on a standard Modbus network using the RTU (Remote Terminal Unit) transmission mode. The hardware interface is RS-485.

DIMENSIONS:



Included with E style enclosure



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RoHS COMPLIANT

Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems. We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM