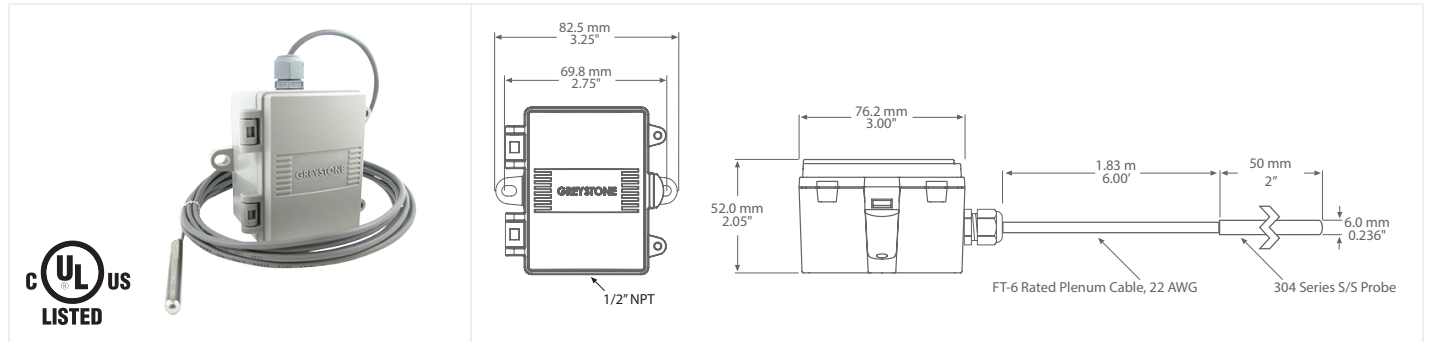




FLYING LEAD NETWORK TEMPERATURE SENSOR



TNFL SERIES

PRODUCT DESCRIPTION

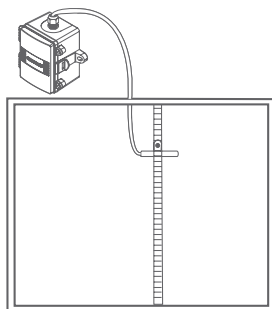
The single point flying lead network temperature sensor incorporates a precision sensor encapsulated in a 6 mm (0.236") OD X 50 mm (2"), 304 series stainless steel probe. Standard wire length is 1.83 m (6'). All probes are constructed to provide excellent heat transfer, fast response and are potted to 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.

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 air-stream.

The enclosure provides mounting holes for ease of installation

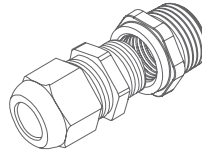
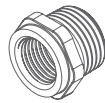
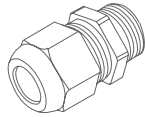


SPECIFICATIONS

POWER SUPPLY	BACnet®: 24 Vac/dc $\pm 10\%$ (non-isolated half-wave rectified) Modbus: 24 Vac/dc $\pm 20\%$ (non-isolated half-wave rectified)
CONSUMPTION	BACnet®: 25 mA max @ 24 Vdc Modbus: 10 mA max @ 24 Vdc
OPERATING ENVIRONMENT	-40 to 60°C (-40 to 140°F), 5 to 95 %RH non-condensing
PROBE MATERIAL	304 series stainless steel
PROBE SIZE	6 mm (0.236") OD x 50mm (2") L
WIRE LENGTH	3.05m (10')
WIRE MATERIAL	FT-6 rated plenum cable (22 AW)
WIRING CONNECTIONS	Screw terminal block (14 to 22 AWG)
ENCLOSURE	A: ABS, UL94-V0, IP65 (NEMA 4X) E: Same as A, with thread adapter (1/2" NPT to M16) and cable gland fitting
TEMPERATURE	Sensing Element: NTC thermistor Accuracy: $\pm 0.2^\circ\text{C}$ ($\pm 0.36^\circ\text{F}$) @ 0 to 70°C (32 to 158°F) Probe Sensing Range: -40 to 60°C (-40 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 (switch selectable) Parity: None Stop Bits: 1 Error Checking: A001 (CRC-16 reverse)
INPUT VOLTAGE EFFECT	Negligible over specified operating range
PROTECTION CIRCUITRY	Reverse voltage protected and transient protected
PROTECTION CLASS	III
POWER SOURCE UL	24VAC/DC, 50/60HZ, 25mA, SELV, Class 2
EU CONFORMITY	CE
CERTIFICATION	UL 60730 & CSA E60730
UL 2043 / CSA / ULC S142 COMPLIANT	Suitable for Use in Air Handling Spaces in Accordance with Section 300.22, (C) of the National Electrical Code
PURPOSE OF CONTROL	Operating Control
TYPE OF ACTION	Type 1
IMPULSE VOLTAGE	330V
POLLUTION DEGREE	2
COUNTRY OF ORIGIN	Canada



ACCESSORIES - INCLUDED WITH E ENCLOSURE OPTION



CABLE GLAND FITTING

THREAD ADAPTER 1/2" NPT TO M16

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.

ORDERING

PRODUCT	TNFL	Flying Lead Network Temperature Sensor
ENCLOSURE	A E	ABS, with hinged and gasketed cover Same as A, with thread adapter (1/2" NPT to M16) and cable gland fitting
SENSOR	20X	NTC Thermistor, $\pm 0.2^{\circ}\text{C}$
COMMUNICATION OUTPUT	B M	BACnet® Modbus

PART NUMBER

TNFL

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