GREYSTONE ENERGY SYSTEMS INC

ALL PURPOSE NETWORK TEMPERATURE SENSOR
TNAP Series

The all purpose single point network temperature sensor utilizes a precision sensor encapsulated in a 6 mm (0.236") OD, 304 series stainless steel probe and is available in various lengths (see ordering chart). All probes provide excellent heat transfer, fast response and resistance to 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")
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 100°C (-4 to 212°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
CRC ..... A001 (CRC-16 reverse)

PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
TNAP	Network All Purpose Duct/Immersion Temperature Sensor

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

CODE	Sensor
20	NTC Thermistor, ±0.2°C

CODE	Probe Length
A	50 mm (2")
B	100 mm (4")
C	150 mm (6")
D	200 mm (8")
E	300 mm (12")
F	450 mm (18")

CODE	Communication Output
B	BACnet®
M	Modbus

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

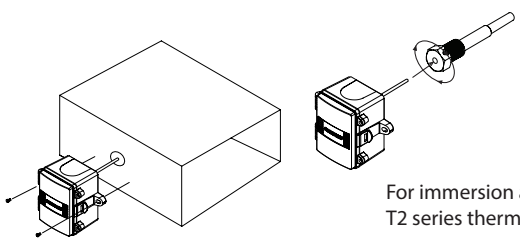
TYPICAL INSTALLATION:

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

In duct applications the probes are installed in the side of the duct to monitor a single point temperature within the duct. Select a probe length that allows the probe to span the duct width. Install the probe in a straight section of duct at a suitable distance downstream from any heating, cooling or humidification devices.

For immersion applications the probes are installed in the appropriate length thermowell for the pipe size. Thermal conductive compound should be added inside the thermowell to provide optimum thermal transfer.

NOTE: All immersion sensors require a thermowell (sold separately).



For immersion applications, T2 series thermowell is required.

BACnet® COMMUNICATION

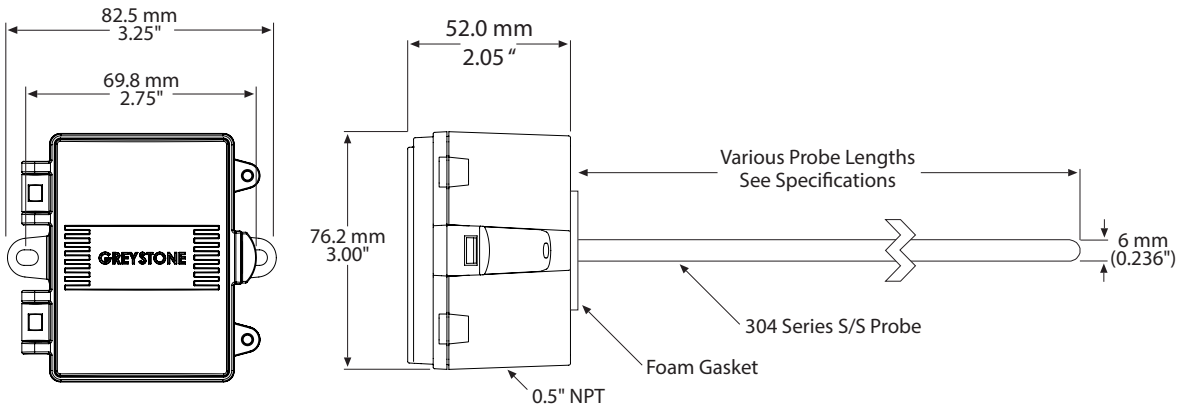
BACnet® is a data communication protocol for building automation and control networks. The sensor communicates on a standard 2-wire RS-485 MS/TP network designed to run at speeds from 9600 to 115200 baud over twisted pair wiring.

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.

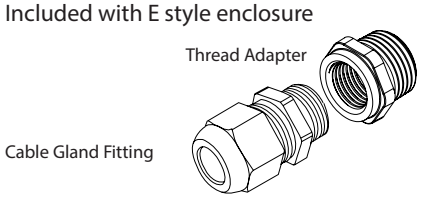
MODBUS COMMUNICATION

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

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