



GREYSTONE ENERGY SYSTEMS INC

DUCT HUMIDITY /TEMPERATURE NETWORK SENSOR NTDA Series

The NTDA Series duct RH/temperature network sensor uses a highly accurate and reliable Thermoset Polymer based capacitance humidity sensor and curve-matched NTC thermistor temperature sensor together with embedded BACnet® or Modbus communication to provide the most efficient monitoring and control solution.

The device connects to an RS-485 MS/TP network to offer a single-point solution for control of indoor air comfort.

The NTDA Series is provided in an ABS enclosure with a 230 mm (9") S/S probe with porous filter that allows for ease of installation and protection from the elements.

SPECIFICATION:

General Specifications:

Power Supply.....	BACnet®: 24 Vac/dc ± 10% (non-isolated half-wave rectified) Modbus: 15 - 30 Vac/dc (non-isolated half-wave rectified)
Consumption.....	BACnet®: 25 mA max @ 24 Vdc Modbus: 10 mA max @ 24 Vdc
Protection Circuitry.....	Reverse voltage and over voltage protected
Operation Conditions.....	-40 - 50 °C (-40 -122 °F), 0-95% RH, non-condensing
Wiring Connections.....	Screw terminal block (14 to 22 AWG)
Enclosure.....	ABS, UL94-5VB - IP61 (NEMA 2)
Enclosure Dimensions.....	114 W x 84 H x 53 D mm (4.5" x 3.3" x 2.1")
Probe.....	230 mm (9") long x 12.7 mm (0.5") diameter Stainless steel with porous filter

Relative Humidity:

Sensing Element.....	Thermoset polymer based capacitive
Accuracy.....	± 2% RH
Range.....	0 - 100% RH
Resolution.....	0.1% RH
Hysteresis.....	± 1.5% RH
Response Time.....	15 seconds typical
Stability.....	± 1.2% RH typical @ 50% RH in 5 years

Temperature:

Sensing Element.....	20KΩ NTC thermistor
Accuracy.....	±0.2 °C (±0.4 °F) curve matched
Range.....	-40 - 50 °C (-40 - 122 °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 or 76800
Network Address Range.....	Locally set to 0-127

Modbus Communications Interface:

Hardware.....	2-wire RS-485
Software.....	Native Modbus MS/TP protocol (RTU)
Baud Rate.....	38400
Network Address Range.....	Locally set to 1- 255
Parity.....	None
Stop Bits.....	1
CRC.....	A001 (CRC-16 reverse)

* Modbus parameters may be factory customized



PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
NTDA	Duct Humidity/Temperature Network Sensor

CODE	Communications Output
BAC	BACnet®
MOD	Modbus

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

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 76800 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.

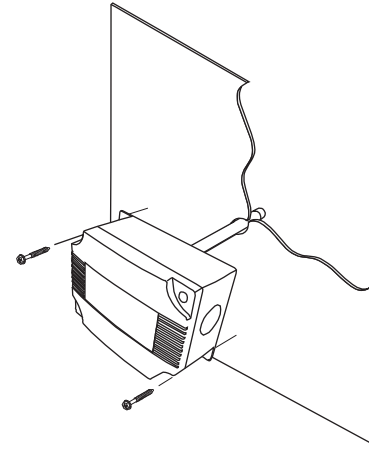
TYPICAL INSTALLATION:

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

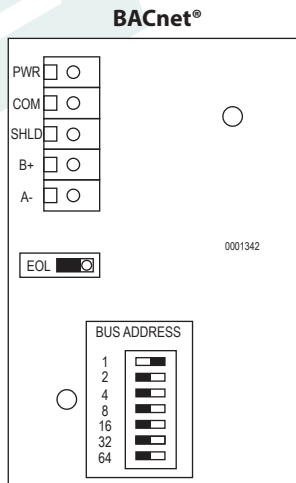
The duct type probes are installed through a hole in the side of the duct to monitor a single point humidity and temperature within the duct. Install the probe in a straight section of duct at a suitable distance downstream from any heating, cooling or humidification devices.

Mounting tabs on the outside of the enclosure for ease of installation.

A terminal block connection is provided for connection to the Building Automation System.



PCB/WIRING INFORMATION

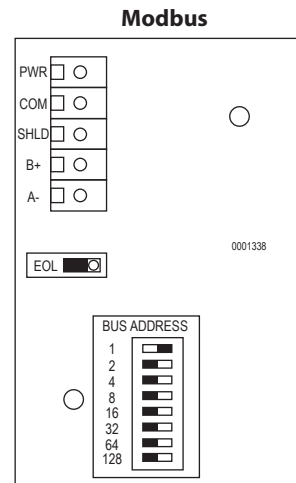


Terminal

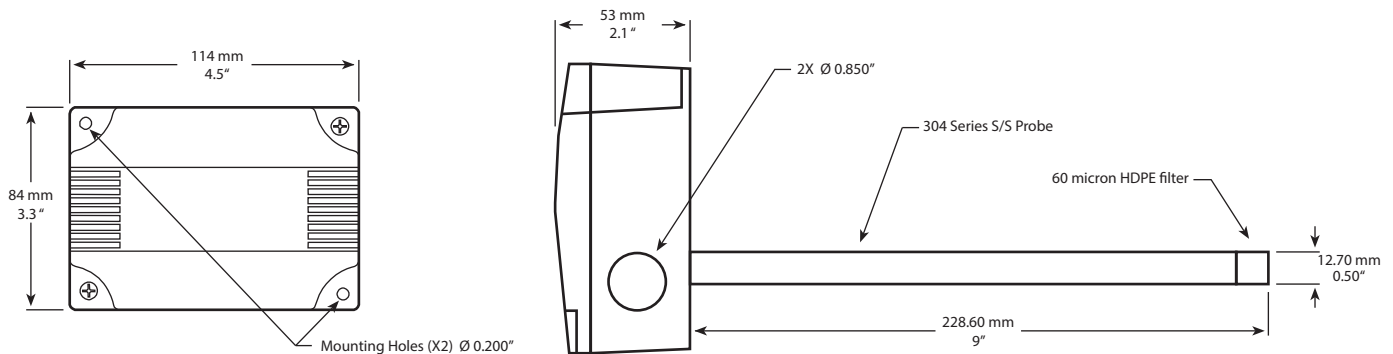
PWR
COM
SHLD
B +
A -

Function

24 Vac/dc of controller or power supply
To GND or COMMON of controller
To communications bus shield
To + of communications bus
To - of communications bus



DIMENSIONS:



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GREYSTONE
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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