



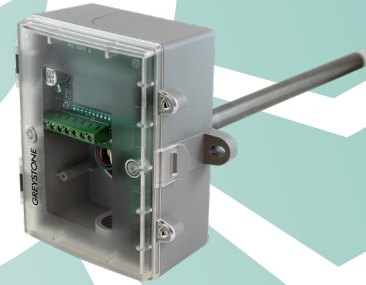
# GREYSTONE

ENERGY SYSTEMS INC

## DUCT DEWPOINT TRANSMITTER DWDT Series

The duct dewpoint transmitter is designed for use in environmental monitoring and control systems where high performance and stability are demanded. Its state-of-the-art design combines digital linearization and temperature compensation with a highly accurate and reliable thermoset polymer based capacitance humidity sensor and curve-matched NTC thermistor temperature sensor for reliability and accuracy in the most critical applications.

The dewpoint series has four measurement variables which include dewpoint, dry-bulb temperature, wet-bulb temperature and enthalpy which are available by either an analog, BACnet® or Modbus signal to provide the most efficient monitoring and control solution. A weatherproof Polycarbonate enclosure is included for ease of installation



### SPECIFICATIONS:

Sensor Type:.....Thermistor polymer based capacitive  
Power Supply:.....20 – 27 Vdc, 16 – 27 Vac (non-isolated half-wave rectified)  
Consumption:.....**Current:** 50 mA max @ 24 Vdc, 1.5 VA max @ 24 Vac  
**Voltage:** 30 mA max @ 24 Vdc, 1 VA @ 24 Vac  
Operating Conditions:.....-30 to 50 °C (-22 to 122 °F), 0 – 95 %RH non-condensing  
Storage Conditions:.....-40 to 70 °C (-40 to 158 °F), 0 – 95 %RH non-condensing  
Wiring Connections:.....14 – 22 AWG terminal block

#### ENCLOSURE:

Dimensions:.....112.5W x 116.5H x 53.7D mm (4.43"W x 4.58"H x 2.11"D)  
Material:.....Grey Polycarbonate, UL94-V0  
F style includes thread adapter (1/2" NPT to M16)  
and cable gland fitting  
Ratings:.....IP65 (NEMA 4X)  
Probe:.....230 mm (9") L x 12.7 mm (1/2") D 304 S/S with porous filter  
Weight:.....320 gm (11.3 oz)  
Approvals:.....CE, RoHS

#### LCD DISPLAY VALUES:

Temperature:.....-30.0 – 50.0 °C (0.5 °C resolution) or  
-22 – 122 °F (1 °F resolution)  
Dewpoint:.....-30.0 – 50.0 °C Td (0.5 °C resolution) or  
-22 – 122 °F Td (1 °F resolution)  
Wet Bulb:.....-20.0 – 50.0 °C Tw (0.5 °C resolution) or  
-4 – 122 °F Tw (1 °F resolution)  
Enthalpy:.....0 – 340 kJ/kg (1 kJ/kg resolution) or  
0 – 146 BTU/lb (1 BTU/lb resolution)

#### MEASUREMENT RANGE:

Relative Humidity:.....0 – 100 %RH  
Dry Bulb Temperature:.....-30 to 50 °C (-22 to 122 °F)

#### CALCULATED VALUES:

Dewpoint Temperature:.....-30 to 50 °C (-22 to 122 °F)  
Wet Bulb Temperature:.....-30 to 50 °C (-22 to 122 °F)  
Enthalpy:.....0 – 340 kJ/kg (0 – 146 BTU/lb)

#### INTERFACE:

BACnet Protocol:.....MS/TP, 2-wire RS-485  
9600, 19200, 38400, 57600, 76800 or 115200 baud  
0-127 slave address range  
Modbus Protocol.....Modbus RTU, 2-wire RS-485  
300, 600, 1200, 2400, 4800, 9600, 19200 or 38400 baud  
1-255 slave address range

#### ACCURACY:

Relative Humidity (RH):.....±2% RH, 10-90% RH @ 25°C  
Dry Bulb Temp. (T):.....±0.2°C (±0.4°F) / 0 to 50°C (32 to 122°F)  
Dewpoint Temp. (Td):.....±1.0°C (±1.8°F) @ 40% RH / 25°C  
Wet Bulb Temp. (Tw):.....±1.0°C (±1.8°F) @ 50% RH / 25°C  
Enthalpy (En):.....±2 kJ/kg (±1 BTU/lb) @ 50% RH / 25°C

#### PART NUMBER SELECTED

### PRODUCT SELECTION INFORMATION:

MODEL	Product Description
DW	Dewpoint Transmitter

CODE	Mounting
DT	Duct

CODE	Enclosure
B	Polycarbonate with hinged and gasketed cover
F	Same as B, with thread adapter and cable gland fitting

CODE	Output
I	Current 4-20 mA
V	Voltage 0-5, 0-10 Vdc, field selectable
B	BACnet® Communications
M	Modbus Communications

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

#### OUTPUT:

Output Signals (2X):.....4 – 20 mA or 0-5/0-10 Vdc (factory set)  
Signal 1:.....Dry Bulb Temperature (field selectable range)  
T Range 1 = -30 – 50 °C (-22 – 122 °F)  
T Range 2 = 0 – 50 °C (32 – 122 °F)  
Signal 2:.....Dewpoint Temperature, Wet Bulb Temperature or Enthalpy  
(field selectable)  
Td Range 1 = -30 – 50 °C (-22 – 122 °F)  
Td Range 2 = -20 – 40 °C (-4 – 104 °F)  
Td Range 3 = 0 – 50 °C (32 – 122 °F)  
Tw Range 1 = -20 – 50 °C (-4 – 122 °F)  
Tw Range 2 = 0 – 50 °C (32 – 122 °F)  
En Range 1 = 0 – 340 kJ/kg (0 – 146 BTU/lb)  
En Range 2 = 0 – 250 kJ/kg (0 – 107 BTU/lb)  
Output Impedance:.....**Current:** 500 Ω max (@ 24 Vdc),  
**Voltage:** 10 KΩ min

Country of Origin:.....Canada



GREYSTONE ENERGY SYSTEMS, INC.

RoHS  
COMPLIANT

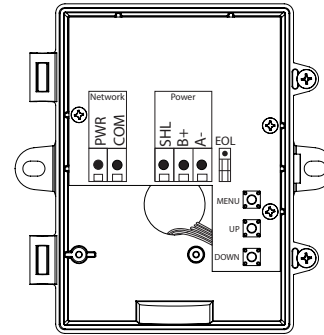
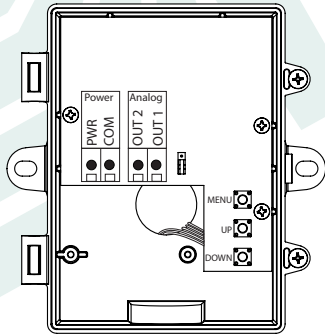
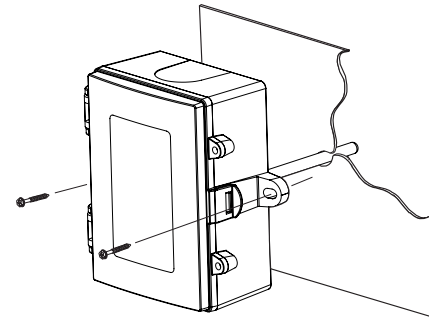


## TYPICAL INSTALLATION:

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

The transmitter installs directly into any air duct with a minimum width/diameter of 25.5 cm (10"). Select a suitable installation area in the middle of the duct wall. To achieve the best reading, do not place in an area where air stratification may be present.

The enclosure provides mounting tabs for ease of installation.



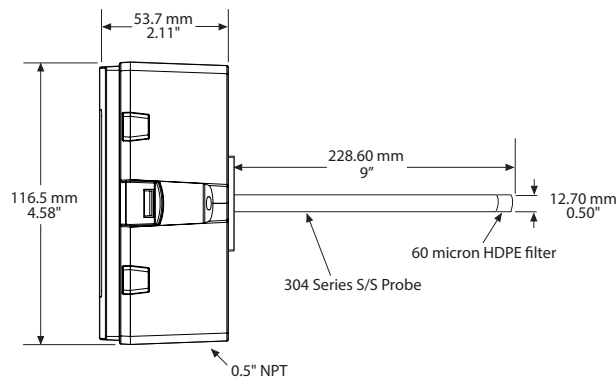
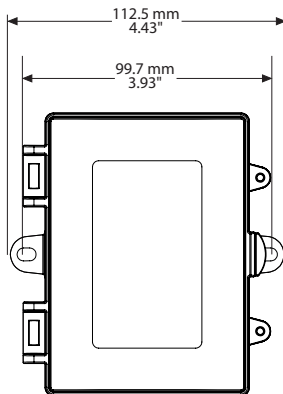
## Analog Wiring:

Terminal	Function
PWR	24 Vac/dc of controller or power supply
COM	To GND or COMMON of controller
OUT1	Analog Output 1
OUT2	Analog Output 2

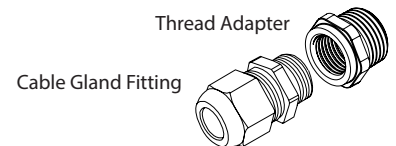
## NETWORK WIRING:

Terminal	Function
PWR	24 Vac/dc of controller or power supply
COM	To GND or COMMON of controller
SHL	To communications bus shield
B +	To + of communications bus
A -	To - of communications bus

## DIMENSIONS:



Included with F 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