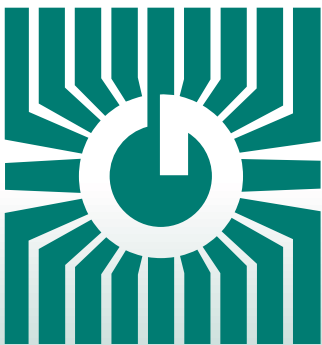


# GREYSTONE

## ENERGY SYSTEMS INC



### DEWPOINT TRANSMITTER DP Series



## Precision Dewpoint Transmitters

### FEATURES:

- Highly stable RH sensor element
- Humidity range: 0-100%
- Curve-matched NTC thermistor
- 4 - User selectable measurement variables
- LCD display
- 3 Available analog outputs
- BACnet or ModBus communication
- AC/DC operation

*Peace of mind  
through reliable  
dewpoint monitoring*

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

## SPECIFICATIONS:

### General Specifications:

Sensor Type .....	Thermoset polymer based capacitive
Temperature Sensor .....	Curve-matched NTC Thermistor
Power Supply .....	20 – 27 Vdc, 16 – 27 Vac (non-isolated half-wave rectified)
Consumption .....	50 mA max @ 24 Vdc, 1.5 VA max @ 24 Vac (current model) 30 mA max @ 24 Vdc, 1 VA max @ 24 Vac (voltage model)
Operating Conditions .....	-30 – 50°C (-22 – 122°F), 0 – 95 %RH non-condensing
Storage Conditions .....	-40 – 70°C (-40 – 158°F), 0 – 95 %RH non-condensing
Wiring Connections .....	14 – 22 AWG terminal block
Dimensions .....	Room: 84 W x 117 H x 29 D mm (3.3" x 4.6" x 1.15") Duct / Outside: Hinged cover, 145W x 100H x 64D mm (5.7"W x 3.95"H x 2.5"D)
Enclosure .....	Room: White ABS, UL94-V0 Duct / Outside: Grey ABS, UL94-V0
Duct Probe .....	230 mm (9") long x 12.7 mm (1/2") diameter stainless steel with porous filter
OSA Probe .....	20 mm (0.8") long x 28 mm (1.1") diameter PVC hub with mesh filter
Weight .....	Room: 105 gm (3.7 oz) , Duct / Outside: 320 gm (11.3 oz)

### Measurement Range:

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

### Calculated Values:

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

### Accuracy:

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

### Output:

Output Signals (2X) .....	4 – 20 mA or 0-5/0-10 Vdc (factory set)
Signal 1 .....	Dry Bulb Temperature <b>Dry Bulb Temperature Ranges (field selectable)</b> 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) <b>Dewpoint Temperature Ranges (field selectable)</b> 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) <b>Wet Bulb Temperature Ranges (field selectable)</b> Tw Range 1 = -20 – 50°C (-4 – 122°F) Tw Range 2 = 0 – 50°C (32 – 122°F) <b>Enthalpy Ranges (field selectable)</b> En Range 1 = 0 – 340 kJ/kg (0 – 146 BTU/lb) En Range 2 = 0 – 250 kJ/kg (0 – 107 BTU/lb)
Output Impedance .....	500 Ω max for current (@ 24 Vdc), 10 KΩ min for voltage

### 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

### 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 res.) Wet Bulb, -20.0 – 50.0°C Tw (0.5°C resolution) or -4 – 122°F Tw (1°F res.) Enthalpy, 0 – 340 kJ/kg (1 kJ/kg resolution) or 0 – 146 BTU/lb (1 BTU/lb resolution)
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## DESCRIPTION:

The DP Series dewpoint sensors are designed for use in environmental monitoring and control systems where high performance and stability are demanded. It's 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 DP Series is available in room, duct or outside mounting configurations to meet the widest range HVAC applications. The DP 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.

## PRODUCT ORDERING INFORMATION

MODEL	Product Description
<b>DPRC</b>	Room
<b>DPDD</b>	Duct
<b>DPOD</b>	Outside Air

CODE	Output
<b>I</b>	4-20 mA outputs
<b>V</b>	0-5/0-10 Vdc outputs
<b>B</b>	BACnet® communication
<b>M</b>	ModBus communication

CODE	LCD Display (DPRC only)
<b>N</b>	Concealed LCD
<b>L</b>	Viewable LCD

DPRC	B	L
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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 detector communicates on a standard 2-wire RS-485 MS/TP (master-slave/token-passing) network designed to run at speeds from 9600 to 76800 baud over twisted pair wiring.

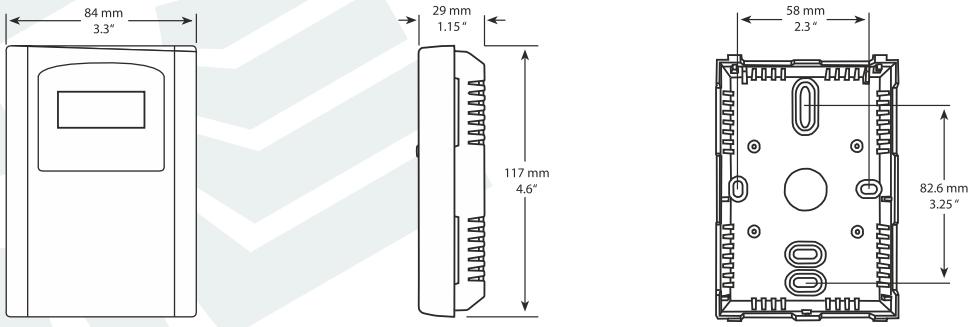
BACnet is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to the requirements of ASHRAE Standard 135 is the responsibility of BACnet International (BI). BTL is a registered trademark of BI.

## MODBUS COMMUNICATION

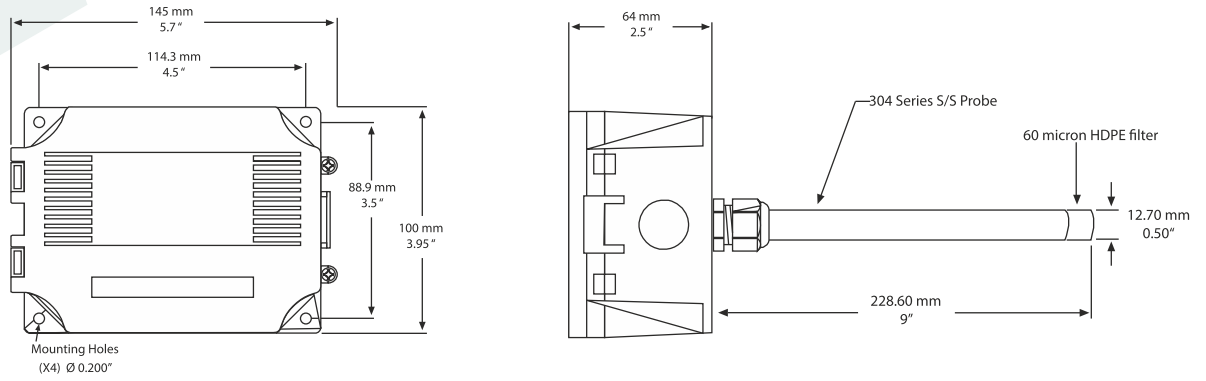
Modbus is a network protocol for industrial manufacturing environments. The detector communicates on a standard Modbus network using either of two transmission modes: RTU (Remote Terminal Unit) or ASCII (American Standard Code for Information Interchange). The hardware interface is RS-485. Select the desired mode along with the other parameters using the Configuration Menu.

# DIMENSIONS

## DPRC



## DPDD



## DPOD

