GREYSTONE
ENERGY SYSTEMS INC

ROOM DEWPOINT TRANSMITTER
DPRC Series

The DPRC Series room 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 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.

SPECIFICATION:

Sensor Type ..... Thermoset polymer based capacitive
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 0 – 50 °C (32 – 122 °F), 0 – 95 %RH non-condensing
Storage Conditions ..... -20 – 70 °C (-4 – 158 °F), 0 – 95 %RH non-condensing
Wiring Connections ..... 14 – 22 AWG terminal block
Enclosure ..... 84W x 117H x 29D mm (3.3W x 4.6H x 1.15D in)
Enclosure Material ..... White ABS, UL94-V0
Weight ..... 105 gm (3.7 oz)
Approvals ..... CE, RoHS

Measurement Range:
Relative Humidity ..... 0 - 100 %RH
Dry Bulb Temperature .... 0 – 50 °C (32 – 122 °F)

Calculated Values:
Dewpoint Temp. ..... -30 – 50 °C (-22 – 122 °F)
Wet Bulb Temp. ..... -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 Temp.(T) ..... ± 0.2 °C (± 0.4 °F) / 0 – 50 °C (32 – 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

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 = 0 – 35 °C (32 – 95 °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 = -10 – 50 °C (14 – 122 °F)
Tw Range 2 = 0 – 35 °C (32 – 95 °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 ..... 500 Ω max for current (@ 24 Vdc), 10 KΩ min for voltage

PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
DPRC	Room

CODE	Enclosure
I	4-20 mA outputs
V	0-5/0-10 Vdc outputs
B	BACnet communication
M	ModBus communication

CODE	LCD Display (DPRC only)
N	Concealed LCD
L	Viewable LCD

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

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)

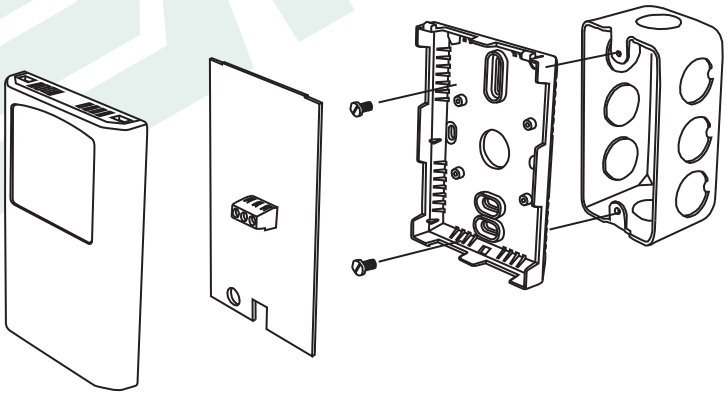
RoHS COMPLIANT

TYPICAL INSTALLATION:

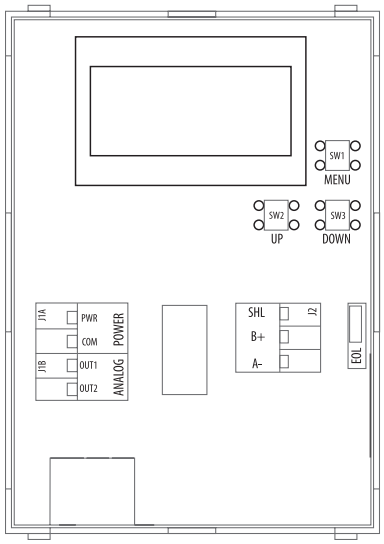
For complete installation and wiring details, please refer to the product installation instructions.

The DPRC series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.

The DPRC has a screw block terminal provided for connection to the Building Automation System.



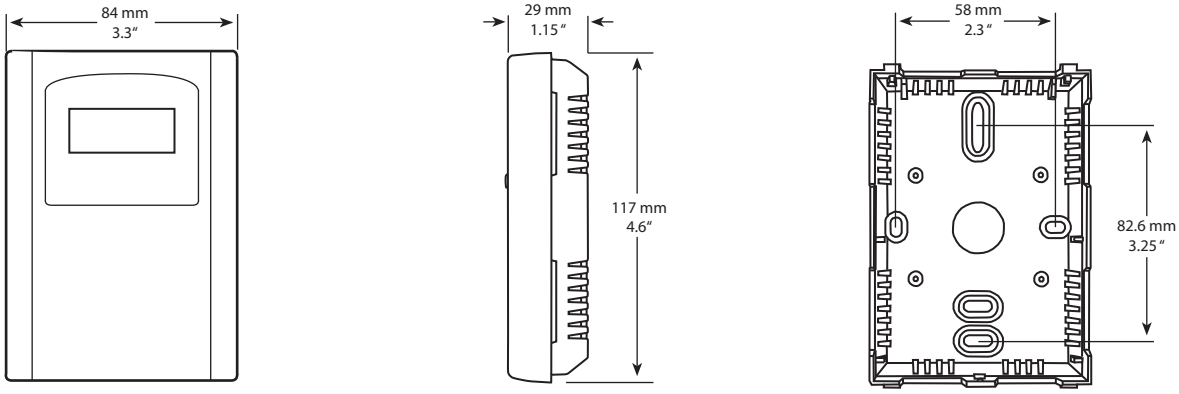
PCB/WIRING INFORMATION



Terminal	Function
POWER	From +20-28 Vac/dc of controller or power supply
COMMON	To GND or COMMON of controller
D INPUT	To dry contact output of device
B +	To + of communications bus
A -	To - of communications bus
SHIELD	To communications bus shield
RELAY	To digital input of controller

* Some models do not have all these features

DIMENSIONS:



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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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