DEWPOINT SENSOR

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.

PRODUCT HIGHLIGHTS

• Measures dewpoint, dry-bulb temperature, wet bulb temperature and enthalpy.

• Analog outputs, 4-20mA or 0-5 /10Vdc

• BACnet or Modbus communication

• LCD with configurable display.

SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| TEMPERATURE SENSOR | NTC Thermistor |
| RELATIVE HUMIDITY SENSOR | Thermoset polymer based capacitive |
| MEASUREMENT RANGE | Relative Humidity: 0 to 100 %RHDry Bulb Temperature: 0 to 50°C (32 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 to 340 kJ/kg (0 to 146 BTU/lb) |
| ACCURACY | Relative Humidity (RH): ±2 %RH, 10 to 90 %RH @ 25°CDry Bulb Temperature (T): ±0.2°C (±0.4°F) @ 0 to 50°C (32 to 122°F)Dewpoint Temperature (Td): ±1.0°C (±1.8°F) @ 40 %RH / 25°CWet Bulb Temperature (Tw): ±1.0°C (±1.8°F) @ 50 %RH / 25°CEnthalpy: ±2 kJ/kg (±1 BTU/lb) @ 50 %RH / 25°C |
| LCD DISPLAY VALUES | Temperature: -30.0 to 50.0°C (0.5°C resolution) or -22 to 122°F (1°F resolution)Dewpoint: -30.0 to 50.0°C Td (0.5°C resolution) or -22 to 122°F Td (1°F resolution)Wet Bulb: -20.0 to 50.0°C Tw (0.5°C resolution) or -4 to 122°F Tw (1°F resolution)Enthalpy: 0 to 340 kJ/kg (1 kJ/kg resolution or 0 to 146 BTU/lb (1BTU/lb resolution) |
| POWER SUPPLY | 20 to 27 Vdc, 16 to 27 Vac (non-isolated half-wave rectified) |
| CONSUMPTION | Current: 50 mA max @ 24 Vdc, 1.5 VA maxVoltage: 30 mA max @ 24 Vc, 1 VA |
| OUTPUT SIGNALS | 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 to 50°C (-22 to 122°F)T Range 2: 0 to 50°C (32 to 122°F)Signal 2: Dewpoint Temperature, Wet Bulb Temperature or Enthalpy (field selectable)Td Range 1: -30 to 50°C (-22 to 122°F)Td Range 2: -20 to 40°C (-4 to 104°F)Td Range 3: 0 to 50°C (32 to 122°F)Tw Range 1: -20 to 50°C (-4 to 122°F)Tw Range 2: 0 to 35°C (32 to 95°F)En Range 1: 0 to 340 kJ/kg (0 to 146 BTU/lb)En Rnage 2: 0 to 250 kJ/kg (0 to 107 BTU/lb)Impedance @ 24 Vdc: Current: 500Ω maxVoltage: 10,0000Ω minimum  |
| BACnet COMMUNICATION  | MS/TP, 2-wire RS-485Baud rate - 9600, 19200, 38400, 57600, or 1152000-127 slave address range |
| MODBUS PROTOCOL | RTU, 2-wire RS-485Baud rate - 300, 600, 1200, 2400, 4800, 9600, 19200, or 384001-255 slave address range |
| OPERATING CONDITIONS | 0 to 50°C (32 to 122°F), 0-95 %RH non-condensing |
| STORAGE TEMPERATURE | -20 to 70°C (-4 to 158°F) |
| ENCLOSURE | Material: White ABS, UL94-V0105 gm (3.7 oz)84mm W x 117mm H x 29mm D (3.3” x 4.6” x 1.15”) |
| APPROVALS | CE |
| COUNTRY OF ORIGIN | Canada |