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. The state-of-the-art design combines digital linearization and temperature compensation with a highly accurate and reliable 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 Polycarbonate hinged and gasketed enclosure is provided for ease of installation.

PRODUCT HIGHLIGHTS

* Measures dewpoint, dry-bulb temperature, wet-bulb temperature and enthalpy.
* Analog output types field selectable for 4-20mA or Voltage
* Both analog outputs support any of the four measurements, field configurable.
* BACnet or Modbus communication, factory configurable

ENGINEERING SPEC’S

* Shall be IP65 (NEMA 4X) with a UL94-V0 rated enclosure
* External mounting tabs must be slotted & tapered away from enclosure to ease field installation
* Enclosure shall be complete with neoprene gasket for duct to enclosure seal
* Enclosure shall be complete with threaded (1/2 NPT and/or M16) conduit connection
* Cover must be hinged and securely attached in the open position
* Operating range must be -30 to 50°C (-22 to 122°F), 0 to 95 %RH non-condensing
* Cover must contain security screw as extra protection from opening
* Product shall be CE approved

SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| MEASUREMENT RANGE | Relative Humidity: 0 to 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 to 340 kJ/kg (0 to 146 BTU/lb) |
| ACCURACY | Relative Humidity (RH): ±2 %RH, 10 to 90 %RH @ 25°C  Dry 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°C  Wet Bulb Temperature (Tw): ±1.0°C (±1.8°F) @ 50 %RH / 25°C  Enthalpy: ±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) |
| OUTPUT | Signals (2X): 4-20 mA or 0-5/0-10 Vdc (field selectable)  Signal 1 and 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 50°C (32 to 122°F) * En Range 1: 0 to 340 kJ/kg (0 to 146 BTU/lb) * En Range 2: 0 to 250 kJ/kg (0 to 107 BTU/lb)   Impedance @ 24 Vdc: Current: 500Ω max  Voltage: 10,0000Ω minimum |
| BACnet® PROTOCOL | MS/TP, 2-wire RS-485  Baud rate - 9600, 19200, 38400, 57600, or 115200  0-127 slave address range |
| MODBUS PROTOCOL | RTU, 2-wire RS-485  Baud rate - 300, 600, 1200, 2400, 4800, 9600, 19200, or 38400  1-255 slave address range |
| POWER SUPPLY | 20 to 27 Vdc, 16 to 27 Vac (non-isolated half-wave rectified) |
| CONSUMPTION @ 24 VAC | Current: 50 mA max @ 24 Vdc, 1.5 VA max  Voltage: 30 mA max @ 24 Vdc, 1 VA @ 24 Vac |
| OPERATING CONDITIONS | -30 to 50°C (-22 to 122°F), 0 to 95 %RH non-condensing |
| STORAGE CONDITIONS | -40 to 70°C (-40 to 158°F), 0 to 95 %RH non-condensing |
| WIRING CONNECTIONS | Terminal block (14 to 22 AWG) |
| ENCLOSURE | Material:  B - Grey polycarbonate, UL94-V0, IP65 (NEMA 4X)  F - Same as B, includes thread adapter (1/2” NPT to M16) and cable  gland fitting  Dimensions: 112.5mm W x 116.5mm H x 53.7mm D (4.43” x 4.58” 2.11”)  Probe: 230mm (9”) L x 12.7mm (1/2”) D, 304 S/S with porous filter |
| APPROVALS | CE |
| COUNTRY OF ORIGIN | Canada |