Humidity and Temperature Transmitter

Series RHPX



The Series RHPX Humidity and Temperature Transmitter is designed to accurately monitor both humidity and temperature levels in a wide range of indoor environments to optimize building control systems.

Key Benefits & Features

Precise Monitoring & Flexibility

- Accurate measurement of humidity and temperature for optimized building control.
- Configurable to provide absolute or relative humidity, dew point, or enthalpy, offering flexibility for various applications.

Reliable Performance & Long-Term Stability

- High accuracy with 2% and 3% humidity sensor options ensures reliable readings.
- Capacitance polymer sensors deliver consistent performance with long-term stability.

Versatile Applications & Easy Integration

- Ideal for building energy management systems, HVAC, clean rooms, museums, and data centers.
- Optional two-line alphanumeric LCD display for real-time monitoring and easy integration into various systems.



Key Specifications

Humidity Measurement Range: 0 % to 100 % humidity

Temperature Measurement Range: -40 °C to 60 °C (-40 °F to 140 °F)

Humidity Sensor Accuracy: Model specific, ±2 % or ±3 %, at 10 % - 90 % RH and 25 °C (77 °F)

Temperature Sensor Accuracy, Solid State Band Gap: ±0.9 °F @ 77 °F (±0.5 °C @ 25 °C)

Temperature Sensor Accuracy, Thermistor: ±0.2 °C @ 25 °C (±0.36 °F @ 77 °F) (analog models only)

Temperature Sensor Accuracy, RTD: DIN Class B; ±0.3 °C @ 0 °C (±0.54 °F @ 32 °F) (analog models only)

Resolution: Relative humidity: 0.1 %; temperature: 0.1 °F/ °C; absolute humidity: 0.1 g/m3

Humidity Analog Output: 4-20 mA or 0-5 V dc, 0-10 V dc at 5 mA max, field selectable

Active Temperature Analog Output: 4-20 mA or 0-5 V dc, 0-10 V dc at 5 mA max, field selectable

Passive Temperature Sensors: Types II and III: Solid state band gap; Curves A, B, and F: Thermistor; Curves D and E: Platinum RTD DIN 385, Balco 1K (analog models only, availability is sensor configuration dependent)

Network Communication: BACnet MS/TP protocol or Modbus® RTU (communicating models only)

Supported BAUD Rates: 9600, 19200, 38400, 57600, 76800, 115200 (communicating models only)

Termination Load: 120 Ω (communicating models only)

Operating Temperature Range: -40 °C to 60 °C (-40 °F to 140 °F); With LCD: -20 °C to 60 °C (-4 °F to 140 °F)

Power Requirements: Communications model: 14 to 35 Vdc or 10 to 32 Vac; Analog model: 4-20 mA: 10 to 35 Vdc; Vout: 15 to 35 Vdc or 15 to 29 Vac

Wiring Connection: Removable terminal block

Electrical Entry: 1/2" NPS thread. Cable gland included

Humidity Sensor: Capacitive polymer

Enclosure Material: UL 94 V-0

Enclosure Rating: IP66

Optional Display: Two (2) lines of alphanumeric characters with eight (8) characters per line

Weight: Duct: 198.4 g (0.44 lb); wall mount: 170 g (0.38 lb); large housing: 340.2 g (0.75 lb); large housing with radiation shield: 1247.4 g (2.75 lb)

Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F); With LCD: -30 °C to 70 °C (-22 °F to 158 °F)

Additional calculations: Absolute humidity: (0 to 50) g/m3 or (0 to 3000) lb/mmcf; dew point -75 °C to 60 °C (-102 °F to 140 °F); enthalpy (-40 to 411) kj/kg or (-17 to 177) Btu/lb

Compliance: BTL, CE, UL 2043*, UL-60335-2-40**

* UL 2043 compliance limited to models:
RHPX-XS(B,S,W) Wall Mount
RHPX-XS(D,E)-XX-X Plastic Probe Duct Mount without LCD
RHPX-XS(F,G)-XX-X SSTL Duct Mount with LCD
RHPX-XL(B,S,W) Large Wall Mount without LCD
RHPX-XL(H) Large Wall Mount without LCD & Solar Radiation Shield
** Meets UL-60335-2 clause 30.103DV.1 through UL2043 compliance

Common Applications

- Air economizers
- Outdoor humidity and temperature reference
- Pool room humidity monitoring
- Building energy management systems
- Commercial HVAC systems
- Clean rooms
- Museums
- Data centers

How to Order

Use the bold characters from the chart below to construct a product code.

RHPX -2 S B A 0 -00 -LCD

Series
RHPX: Relative humidity/temperature transmitter

Accuracy
-2: 2 % RH accuracy
-3: 3 % RH accuracy

Enclosure
S: Small enclosure
L: Large enclosure

RH Sensor Configuration
B: Bronze sintered filter
D: Duct mount with plenum plastic probe and hydrophobic filter
E: Duct mount with plenum plastic probe and rapid response filter
F: Duct mount with SSTL probe and hydrophobic filter
G: Duct mount with SSTL probe and rapid response filter
H: HDPE filter and solar radiation shield (factory installed)
R: Remote humidity sensor
S: HDPE filter with cover
W: HDPE filter without cover

RH and Temperature Output - Active
A: Selectable analog output
C: BACnet MS/TP or Modbus® RTU communications

Temperature Sensor - Passive
0: None
A: 10000 Ω at 25 °C thermistor type III
B: 10000 Ω at 25 °C thermistor type II
C: 1000 Ω Balco RTD
D: 100 Ω RTD DIN 385
E: 1000 Ω RTD DIN 385
F: 20000 Ω at 25 °C thermistor

Cable Length
00: No cable
04: 1.2 m cable (4 ft) (-R model only)
08: 2.4 m cable (8 ft) (-R model only)
12: 3.6 m cable (12 ft) (-R model only)
16: 4.9 m cable (16 ft) (-R model only)

Options
-LCD: LCD display
-NIST: NIST traceable calibration certificate

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