Dwyer

SERIES RHPX

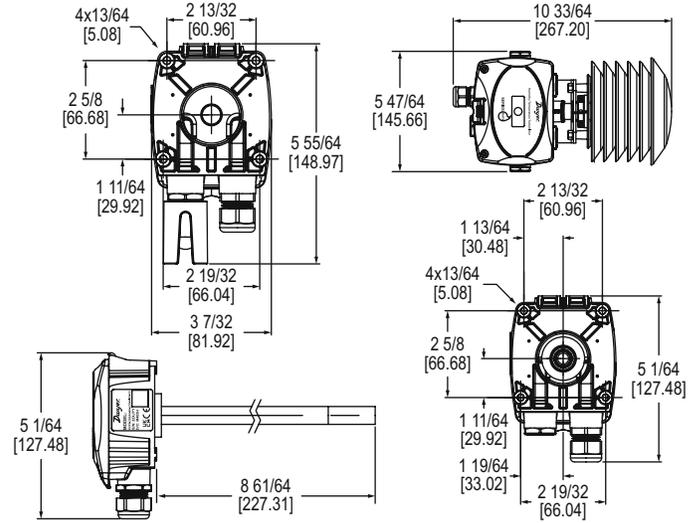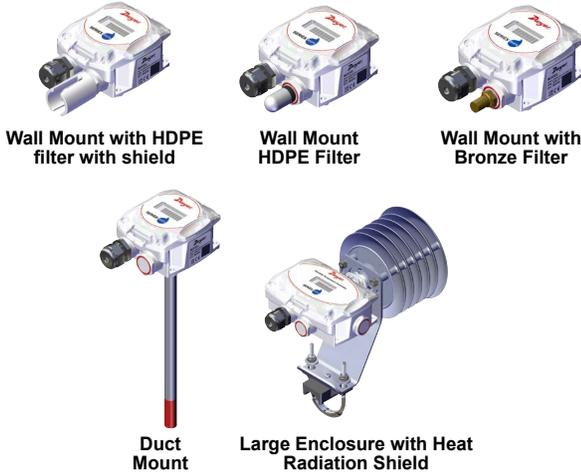# HUMIDITY AND TEMPERATURE TRANSMITTER
Passive and Active Temperature Outputs, Indoor and Outdoor Enclosures

CALIBRATION SERVICES AVAILABLE

Wall Mount with HDPE filter with shield

Wall Mount HDPE Filter

Wall Mount with Bronze Filter

Duct Mount

Large Enclosure with Heat Radiation Shield

The **Series RHPX Humidity and Temperature Transmitter** accurately monitors the humidity and temperature for building control functions to maximize occupant comfort and minimize operating costs. Featuring capacitance polymer humidity sensors, models are available in 2% and 3% accuracies. An optional two-line alphanumeric LCD display is available. The high accuracy, long term stability and reliable operation in multiple enclosure styles make the Series RHPX an excellent choice for monitoring humidity and temperature in building energy management systems, commercial HVAC systems, clean rooms, museums and data centers. The Series RHPX can be optionally configured to supply absolute or relative humidity or dew point in addition to enthalpy.

BENEFITS/FEATURES
• Reduced installation costs with multiple on-board sensors
• Minimal maintenance with UV rated outdoor enclosures
• UL 2043 compliant allows installation into the plenum space
• Easy installation with removable terminal block, attached lid, and cable management

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

MODEL CHART

Example	RHPX	-2	S	D	A	0	-00	-LCD	RHPX-2SDA0-00-LCD
Series	RHPX								Relative humidity/temperature transmitter
Accuracy		2 3							2 % RH accuracy 3 % RH accuracy
Enclosure			S L						Small enclosure Large enclosure
RH Sensor Configuration				B D E F G H R S W					Bronze sintered filter Duct mount with plenum plastic probe and hydrophobic filter Duct mount with plenum plastic probe and rapid response filter Duct mount with SSTL probe and hydrophobic filter Duct mount with SSTL probe and rapid response filter HDPE filter and solar radiation shield (factory installed) Remote humidity sensor HDPE filter with cover HDPE filter without cover
RH and Temperature Output - Active					A C				Selectable analog output BACnet MS/TP or Modbus® RTU communications
Temperature Sensor - Passive						0 A B C D E F			None 10000 Ω @ 25 °C thermistor type III 10000 Ω @ 25 °C thermistor type II 1000 Ω Balco RTD 100 Ω RTD DIN 385 1000 Ω RTD DIN 385 20000 Ω @ 25 °C thermistor
Cable Length							00 04 08 12 16		No cable 1.2 m cable (4 ft) (-R model only) 2.4 m cable (8 ft) (-R model only) 3.6 m cable (12 ft) (-R model only) 4.9 m cable (16 ft) (-R model only)
Options								LCD NIST	LCD display NIST traceable calibration certificate

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

ACCESSORIES

Model	Description
RHRS	Six (6) plate solar radiation shield for sintered filter version
A-RHPX-PLATE	RHPX duct mount adapter plate to RHP duct mount
A-RHPX-DEPTH	RHPX duct mount depth adjustment bracket

USA: California Proposition 65
⚠ **WARNING:** This product can be expose you to chemicals including methylene chloride, which is known to the State of California to cause cancer, and bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Modbus® is a registered trademark of Schneider Electric USA, Inc.