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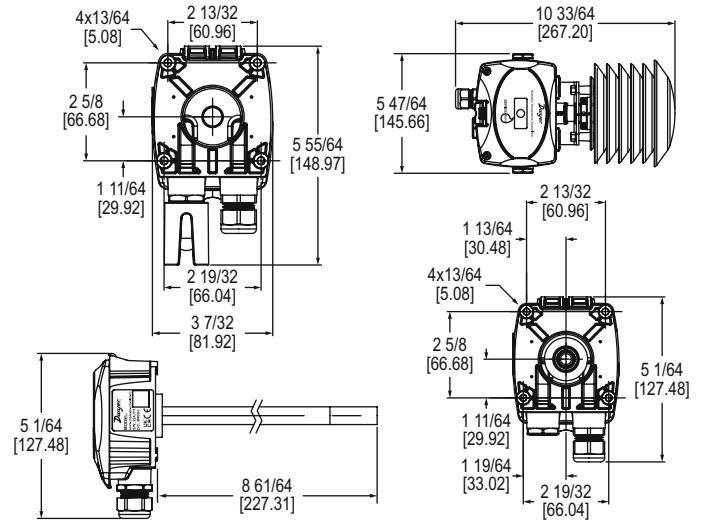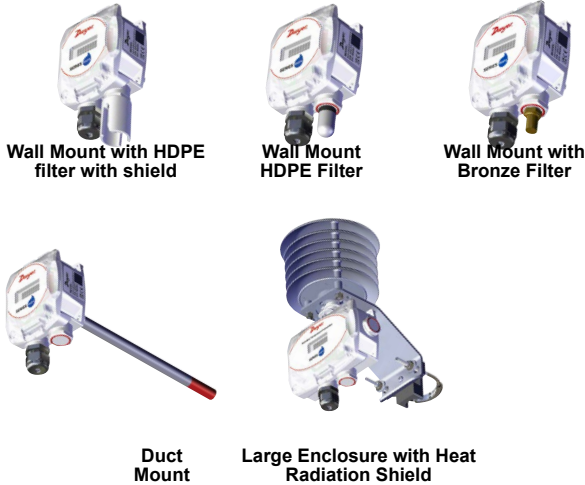
# HUMIDITY AND TEMPERATURE TRANSMITTER
## Passive and Active Temperature Outputs, Indoor and Outdoor Enclosures

**CALIBRATION SERVICES AVAILABLE**

**5 YEAR LIMITED WARRANTY**



**Wall Mount with HDPE filter with shield**

**Wall Mount HDPE Filter**

**Wall Mount with Bronze Filter**

**Duct Mount**

**Large Enclosure with Heat Radiation Shield**



Dimensions:
- 4x13/64 [5.08]
- 2 13/32 [60.96]
- 2 5/8 [66.68]
- 1 11/64 [29.92]
- 5 55/64 [148.97]
- 2 19/32 [66.04]
- 3 7/32 [81.92]
- 5 1/64 [127.48]
- 8 61/64 [227.31]
- 10 33/64 [267.20]
- 5 47/64 [145.66]
- 2 13/32 [60.96]
- 1 13/64 [30.48]
- 4x13/64 [5.08]
- 2 5/8 [66.68]
- 5 1/64 [127.48]
- 1 11/64 [29.92]
- 1 19/64 [33.02]
- 2 19/32 [66.04]

**Humidity/Temperature Transmitters**

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

## 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

## MODEL CHART

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

## 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 |