

Series RHPX

Passive and Active Temperature Outputs, Indoor and Outdoor Enclosures



Wall Mount with HDPE filter with shield



Wall Mount HDPE Filter



Wall Mount with Bronze Filter



Duct Mount



Large Enclosure with Heat Radiation Shield

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

Description

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.

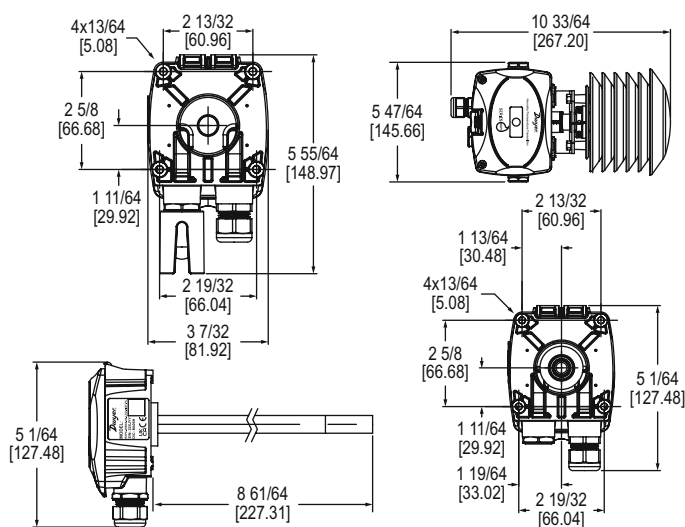
Specifications

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	$\pm 0.9^{\circ}\text{F}$ @ 77°F ($\pm 0.5^{\circ}\text{C}$ @ 25°C).
Temperature Sensor Accuracy, Thermistor	$\pm 0.2^{\circ}\text{C}$ @ 25°C ($\pm 0.36^{\circ}\text{F}$ @ 77°F) (analog models only).
Temperature Sensor Accuracy, RTD	DIN Class B; $\pm 0.3^{\circ}\text{C}$ @ 0°C ($\pm 0.54^{\circ}\text{F}$ @ 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**.

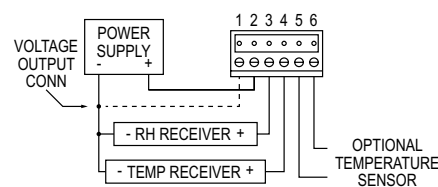
* UL 2043 compliance limited to models:
RHPX-XS(B,S,W) Wall Mount
RHPX-XS(D,E)-XX-X Plastic Probe Duct Mount without LCD
RHPX-XS(F,G)-XX-X SSTL Duct Mount with LCD
RHPX-XL(B,S,W) Large Wall Mount without LCD
RHPX-XL(H) Large Wall Mount without LCD & Solar Radiation Shield

** Meets UL-60335-2 clause 30.103DV.1 through UL2043 compliance

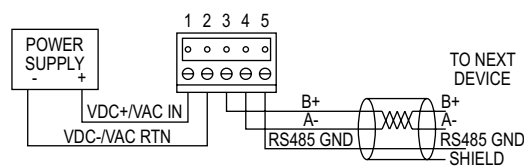
Dimensions



Wiring Diagram



Analog Wiring Diagram



Communicating Wiring Diagram

How to Order

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

Series	RHPX	-2	S	B	A	0	-00	-LCD
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								
Options								
-LCD: LCD display								
-NIST: NIST traceable calibration certificate								
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)								
Temperature Sensor - Passive								
0: None								
A: 10000 Ω at 25 $^{\circ}\text{C}$ thermistor type III								
B: 10000 Ω at 25 $^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ thermistor								
RH and Temperature Output - Active								
A: Selectable analog output								
C: BACnet MS/TP or Modbus [®] RTU communications								

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

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