

## Hx-68P3 Series Outside Humidity and Temperature Transmitters

### Description

The Hx-68P3 Series Outside Humidity and Temperature Transmitter measures and transmits outside relative humidity (RH) from 0 to 100% and temperatures from -40 to 140°F (-40 to 60°C). In addition to RH, the transmitter offers selectable parameters including dew point, wet bulb temperature, and enthalpy.

The humidity sensor is impervious to dust and most chemicals and is not damaged by condensation. The weather shield protects the sensors from solar radiation and precipitation without affecting performance. The multiple discs have a unique profile that permits easy passage of air. The disc material is especially formulated for high reflectivity, low thermal conductivity and maximum weather resistance. This rugged enclosure will assure a long life, even under extreme weather conditions.

The sensor and shield function as one unit for optimal performance. Mount the transmitter outside on a pole or on a side of a building. It requires no routine maintenance or recalibration.

Refer to the *Hx-68P3 Series Outside Humidity and Temperature Transmitters Product Bulletin (LIT-12011896)* for important product application information.

### Features

- 0 to 100% RH offers a full range of accurate RH measurement
- rugged shield construction protects sensors from solar radiation and precipitation without affecting performance
- multiplate shield design maximizes airflow for precise RH and temperature readings
- excellent long-term stability provides accurate RH measurement over long periods of time without degeneration
- no routine maintenance or calibration ensures low maintenance cost
- two wire loop powered connection 4 to 20 mA or four wire 0 to 10 VDC looped power-output enables easy installation
- polymer thin film sensor omits inaccuracies due to dust, water vapor, harsh environments or most chemicals
- negligible temperature coefficient ensures that temperature changes are immaterial to accurate RH measurement

### Applications

Humidity is an important aspect of any climate control system. The significance of indoor air quality to our health has become evident. Humans are best suited to and feel most comfortable at certain humidities and temperatures, whereas excessively high or low humidities or temperatures cause discomfort. Accurate outdoor humidity measurement means that steps can be taken indoors to ensure a quality building environment.

The right humidity makes it possible to optimize energy consumption. Energy management projects with hundreds of setpoints may have only one outdoor humidity sensor. If that sensor is not accurate, energy costs may rise and building comfort may suffer. The maintenance-free, accurate, year-after-year service of our transmitters keeps energy costs low and building comfort high. The sensors are compatible with most energy management systems.



**Hx-68P3 Series Outside Humidity and Temperature Transmitter**

### Selection Chart

#### Hx-68P3 Series Humidity Transmitters

| Code Number   | Description   |
|---------------|---|
| HE-68P3-0N000 | Outdoor RH Transmitter with Temperature Sensor, 10 VDC Output     |
| HT-68P3-0N000 | Outdoor RH Transmitter with Temperature Sensor, 4 to 20 mA Output |

### Repair Information

If the Hx-68P3 Series Humidity Transmitter fails to operate within its specifications, replace the unit. For a replacement transmitter, contact the nearest Johnson Controls® representative.

## Hx-68P3 Series Outside Humidity and Temperature Transmitters (Continued)

### Technical Specifications

| Hx-68P3 Series Outside Humidity and Temperature Transmitter |   |  |
|---|---|--|
| Operating Conditions  | Temperature   | -40 to 140°F (-40 to 60°C)   |
|   | Humidity  | 0 to 100% RH   |
| Relative Humidity   | Measurement range   | 0 to 100% RH   |
|   | Accuracy: Temperature Range<br>50 to 86°F (10 to 30°C):<br>0 to 90% RH<br>90 to 100% RH                               | ±3% RH<br>±5% RH   |
|   | Accuracy: Temperature Range<br>-4 to 50°F (-20 to 10°C):<br>86 to 140°F (30 to 60°C):<br>0 to 90% RH<br>90 to 100% RH | ±5% RH<br>±7% RH   |
|   | Accuracy: Temperature Range<br>-40 to -4°F (-40 to -20°C):<br>0 to 100% RH  | ±7% RH   |
|   | Stability in typical HVAC app.  | ±2% RH over 2 years  |
| Temperature   | Measurement range   | -40 to 140°F (-40 to 60°C)   |
|   | Accuracy at 68°F (20°C)   | ±0.54°F (±0.3°C)   |
|   | Temperature dependance  | ±0.01°C/°C   |
|   | Temperature sensor  | Pt1000 RTD Class F0.1 IEC60751   |
| Dewpoint  | Accuracy at 68°F (20°C) and 80% RH  | ±1.6°F (±0.9°C)  |
| Wet Bulb  |   | ±1.3°F (±0.7°C)  |
| Enthalpy  |   | ±0.9 BTU/lb (±2kJ/kg)  |
| Ingress Protection  |   | IP65   |
| Maximum Wind/Flow Speed                                     |   | 98.42 ft/s (30 m/s)  |
| Storage Temperature   |   | -40 to 140°F (-40 to 60°C)   |
| Current Output<br>(HT-68P3-0N000) (Two-Wire)                | Outputs   | 4 to 20 mA, loop powered   |
|   | Loop resistance   | 0 to 600 ohm   |
|   | Supply voltage  | 20 to 28 VDC at 600 ohm load;<br>10 to 28 VDC at 0 ohm load  |
| Voltage Output (HE-68P3-0N000) (Three-Wire)                 | Outputs   | 0 to 10 V  |
|   | Load resistance   | 10k ohm minimum  |
|   | Supply voltage  | 18 to 35 VDC; 24 VAC ±20%, 50/60 Hz  |
| Wire Size   |   | 16 AWG (1.5 mm <sup>2</sup> ) maximum  |
| Electromagnetic Compliance                                  |   | EN61326-1 Industrial Environment   |
| Standard Housing Color                                      |   | White (RAL9003)  |
| Compliance  | United States   | FCC compliant to CFR 47, Part 15, Subpart B, Class A   |
|   | Canada  | Under CAN/CSA-CEI/IEC CISPR 22:02, Class A   |
|   | Europe  | CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive - 2004/108/EC. |
|   | Australia and New Zealand   | C-Tick mark  |

