TRUERH™ Series
HE-67xx Humidity Transmitter with Temperature Sensor

The TRUERH™ Series HE-67xx humidity transmitter with temperature sensor offers dependable technology, ease of installation, and application flexibility in an attractively styled wall mount package. The patented All-Polymer™ humidity sensor construction improves resistance to chemical corrosion. The element measures humidity within either ±2% or ±3% accuracy, and generates a voltage signal proportional to 0 to 100% Relative Humidity (RH).

Johnson Controls designed the HE-6700 Series humidity transmitter with temperature sensor to use with most controllers. It works directly with the VMA1200 and VMA1400 Series controllers. An additional thin-film nickel or thin-film platinum temperature sensor adapts the unit for zone enthalpy control applications. TRUERH products feature patented circuitry and calibration improvements.
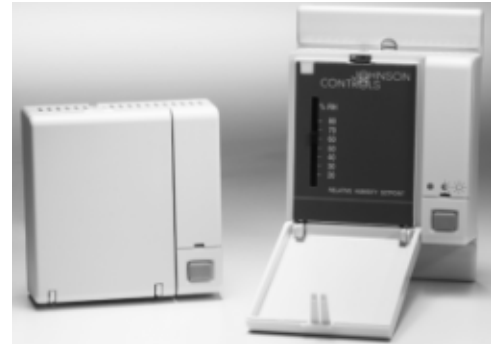

Figure 1: HE-67xx Series Humidity Element

Features and Benefits	
❏ **National Institute of Standards and Technology (NIST) Traceable Calibration**	Meets NIST standards for calibration testing, verifying, and auditing
❏ **Time Response Improvement**	Improves local temperature control, increases employee comfort, and reduces energy consumption
❏ **Controller Configuration Switch**	Allows the user to adjust room comfort and to choose occupancy features that match the application and controller
❏ **Occupancy Light-Emitting Diode (LED) Indicator**	Displays the controller's current operating mode
❏ **Setpoint Adjustment (Optional)**	Allows local control of temperature
❏ **Manual Override Pushbutton (PB)**	Signals the controller that the space is occupied in order to override time-of-day setback
❏ **Globally Scaled Unit**	Includes setpoint and bulb indicator (both optional) with Fahrenheit and Celsius ranges, 65 to 85°F (19 to 29°C)
❏ **Universal Mounting**	Ships with U.S. wallbox and surface mounting base (all installation hardware included)

Product Overview

> **IMPORTANT:** The HE-67xx Series humidity transmitter with temperature sensors are intended to provide input to equipment under normal operating conditions. Where failure or malfunction of an HE-67xx Series humidity transmitter with temperature sensors could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory) intended to warn of, or protect against, failure or malfunction of the HE-67xx Series humidity transmitter with temperature sensors must be incorporated into and maintained as part of the control system.

The HE-67xx Series is the second generation of humidity transmitter with temperature sensors for sensing space humidity and temperature. The improved response time from this temperature sensor results in a 70% faster response time, which leads to:

- increased comfort and reduced complaints about ambient temperature (hot/cold)

- increased comfort due to temperature overshoot elimination

- increased savings from reduced energy consumption

Temperature sensing element selection allows the user to tailor unit operation to specific application requirements. The easy-to-install HE-67xx comes factory calibrated; it can recover quickly from saturation or loss of power. These features result in a reduction both of the amount of time needed to install and commission the unit and of the maintenance cost.

Each unit contains a 1000 ohm nickel or platinum temperature sensor. An optional warmer/cooler or graduated scale temperature setpoint adjusts up to heat or down to cool.

A manual override PB allows the occupant to control local temperature. By activating this feature, the end user can signal the controller that the space is occupied after hours or on weekends.

An occupancy LED (red) displays the controller's current operating mode:

- On = Occupied

- Off = Unoccupied

- Flashing = Standby

Another new feature is the Dual Inline Package (DIP) switch, which programs the HE-67xx to either:

- disable the PB and LED indicator

- enable PB with LED indicator

- enable PB without LED indicator

When released, the HE-67xx access door swings down to reveal the Zone Bus connector and the optional temperature indicator and setpoint adjustments.

The HE-67xx features a quick-mount design that saves time and simplifies installation. A mounting base and screws come with the unit so it can be mounted directly to drywall (spring clips provided) or a U.S. wallbox. All wiring connects to terminal blocks.
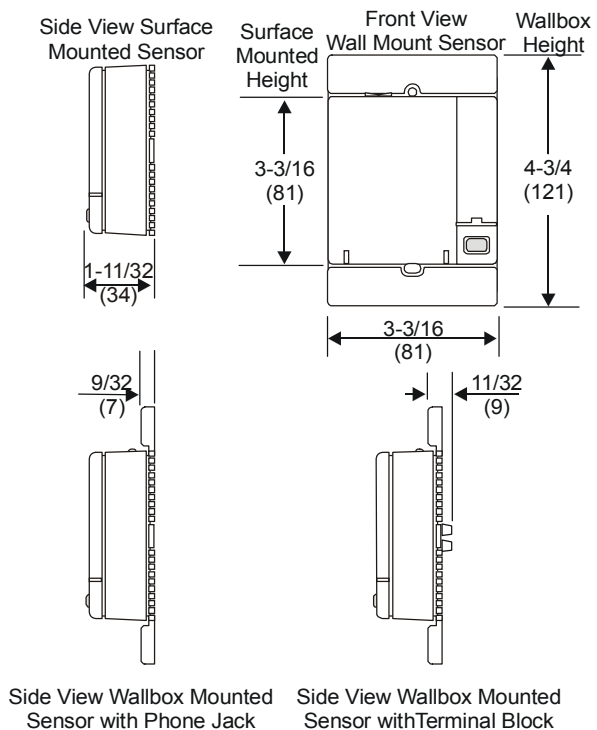
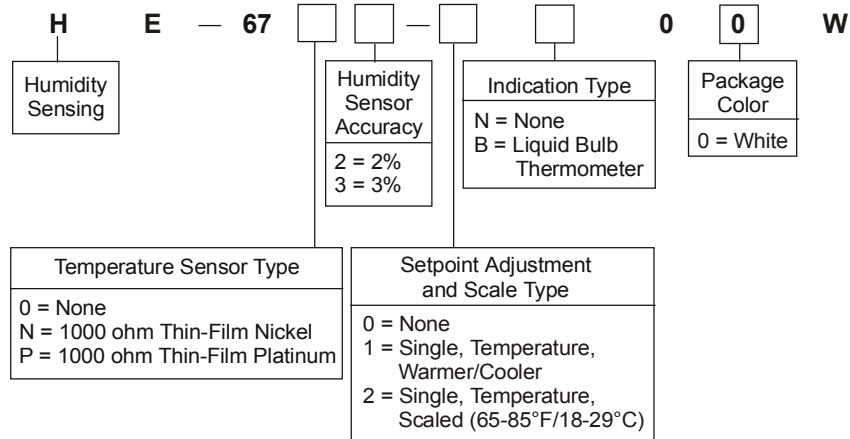## Dimensions

Figure 2: HE-67xx Dimensions, in. (mm)

Repair and Replacement

The HE-67xx units are not field repairable. To order a replacement, refer to the *Ordering Information* section.

IMPORTANT: The Printed Circuit Board (PCB) is retained with a tamper-resistant mechanism. Removal of the PCB from the plastic housing will void the product warranty.

Ordering Information

To order a replacement HE-67xx Series transmitter with temperature sensor or an accessory, contact the nearest Johnson Controls representative. Specify the desired product code number from Figure 3 and Table 1.

H   E   —   67   ☐   ☐   —   ☐   ☐   0   0   W

Humidity Sensing

Humidity Sensor Accuracy
2 = 2%
3 = 3%

Indication Type
N = None
B = Liquid Bulb Thermometer

Package Color
0 = White

Temperature Sensor Type
0 = None
N = 1000 ohm Thin-Film Nickel
P = 1000 ohm Thin-Film Platinum

Setpoint Adjustment and Scale Type
0 = None
1 = Single, Temperature, Warmer/Cooler
2 = Single, Temperature, Scaled (65-85°F/18-29°C)

Note: All models have the manual override PB and a functioning LED display.

Example: To order a nickel sensor with a warmer/cooler temperature setpoint, and a liquid bulb thermometer, specify Product Code Number HE-67N3-1B00W.

Figure 3: Ordering Template

Note: Not all possible combinations are available.

Table 1: Accessories

Product Code Number	Description
ACC-DWCLIP-0	Drywall Clip Mounting Kit (10 per bag)
ACC-INSL-0*	Foam Pad Kit for Wallbox Mounting (10 per package)
ACC-INSL-1*	Foam Pad Kit for Surface Mounting (10 per package)
GRD10A-608	Plastic Guard with Baseplate and Mounting Ring
T-4000-119	Allen-Head Adjustment Tool (30 per bag)
TE-67L-600	Fahrenheit Label Replacement Kit
TE-67L-601	Celsius Label Replacement Kit
TE-67MB-600	Mounting Base Kit
TE-67D0-601**	Door Replacement Kit with Johnson Controls Logo
TE-67D0-602**	Door Replacement Kit without Logo

*   These foam pads help prevent drafts from entering the unit through the wall and make installation easier when mounting on an uneven surface.

**   Contains 10 original style and 10 new style doors.

Technical Specifications

Product	TRUERH Series HE-67xx Humidity Transmitter with Temperature Sensor
Power Requirements	14 to 30 VDC or 20 to 30 VAC at 50/60 Hz, Class 2
Current Draw	3 mA with no load, 25 mA maximum
Humidity Element Characteristics at 77°F (25°C)	Signal: 0 to 10 VDC Accuracy: 　　HE-67x2: ±2% RH for 20 to 80% RH at 77°F (25°C) 　　　±4% RH for 10 to 20% and 80 to 90% RH at 77°F (25°C) 　　HE-67x3: ±3% RH for 20 to 80% RH at 77°F (25°C) 　　　±5% RH for 10 to 20% and 80 to 90% RH at 77°F (25°C) Temperature Coefficient: -0.1 to 0.05% RH/°C at 5°C (41°F) to 　　-0.07 to -0.21% RH/°C at 65°C (149°F)
Nickel Sensor	Temperature Sensor: 1,000 ohm thin-film nickel Temperature Coefficient: Approximately 3 ohms per F° (5.4 ohms per C°) Reference Resistance: 1,000 ohms at 70°F (21°C) Accuracy: ±0.34F° at 70°F (±0.18C° at 21°C)
Platinum Sensor	Temperature Sensor: 1,000 ohm thin-film platinum Temperature Coefficient: Approximately 2 ohms per F° (3.9 ohms per C°) Reference Resistance: 1,000 ohms at 32°F (0°C) Accuracy: ±0.65F° at 70°F (±0.36C° at 21°C)
Sensor Response Time (for both temperature sensors):	One-time constant = 8 ±2 minutes at 10 feet per minute (fpm) airflow rate
Temperature Setpoint	(Depending on option chosen) Type: Single setpoint Scale (Range): Red/blue visual scale (warmer/cooler) 　　Graduated 5F° scale (65 to 85°F) 　　Graduated 2C° scale (19 to 29°C) Resistance: Nominal 1.5 k ohm range
Electrical Connections	18 to 24 AWG wire for 9-position terminal block
Zone Bus Access	6-pin connector with front access for a laptop with HVAC PRO software, a Palm™ compatible handheld device with Variable Air Volume Modular Assembly Balancing Tool software, or a Zone Terminal
Manual Override	Integral momentary pushbutton (DIP switch selectable)
LED Display	Red LED indicates three modes of operation (application and controller dependent)
Ambient Operating Conditions	32 to 131°F (0 to 55°C) 0 to 100% RH, noncondensing; 85°F (29°C) maximum dew point
Ambient Storage Conditions	-40 to 140°F (-40 to 60°C) 0 to 100% RH, noncondensing; 85°F (29°C) maximum dew point
Mounting Style	Standard base for both surface or standard U.S. wallbox mounting, including hardware
Materials	White plastic case and mounting base
Dimensions (H x W x D)	3.2 x 3.2 x 1.4 in. (81 x 81 x 36 mm)
Shipping Weight	1 lb (0.5 kg)

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

JOHNSON CONTROLS