# Wall Mount Humidity Transmitter
# Thermostat Humidistat Functions

## HT/HWS Series


*HT/HWS*

## Independent RH, Temp, and Analog Setpoint Outputs

### FEATURES

- *Independent RH and T (HT relay) or analog setpoint outputs (HT analog) provide application flexibility*
- *LCD for local display of readings and setup values*
- *Offset function adjusts calibration intervals for both RH and T (HT models)*
- *Switch-selectable 4-20mA or 0-10V/0-5VDC analog outputs*
- *Multi-point calibration to 1% RH, traceable to NIST*
- *Replaceable RH sensor element supports field calibration offset... saves time*
- *Semiconductor temperature sensor can be field calibrated*

### DESCRIPTION

All **HT/HWS Series** institutional grade relative humidity transmitters are designed to meet the rigorous needs of pharmaceutical labs, hospitals, science labs, and other settings that call for precise environmental control. Internal jumpers control access to a feature that allows adjustment of the calibration offsets. The devices can also be made tamper resistant using a jumper to disable keypad programing functions. HT/HWS models are calibrated with NIST traceable calibration equipment.

***Analog Output Transmitter***

Analog output models feature a keypad to make adjusting humidity and temperature setpoint values easy. They transmit the setpoint values back to a control system by means of dual outputs. A slide-switch allows easy selection of output type, either 4-20mA or 0-5V/0-10VDC signals. Dual outputs enable effortless control of both humidity and temperature in a single, compact sensor.

### SPECIFICATIONS

5 Year Warranty

| | |
|---|---|
| **Input Power** | Class 2; 15 to 30VDC or 24VAC 50/60Hz, 100mA max. |
| **Outputs, Analog** | Switch-selectable 4-20mA, or 0-10V/0-5VDC (switch affects both outputs) |
| **Outputs, Relay (Relay models only)** | 2 Form C (SPDT), 1A 30VDC, resistive, 30W max. |
| **RH Sensor** | Digitally profiled thin-film capacitive (32-bit mathematics) U.S. Patent 5,844,138* |
| **Accuracy at 25°C from 10-80% RH** (Multi-point calibration NIST traceable)** | ±2%, 3%, or 5% models; ±1% at 20-50% RH on HTA models<br>±1% at 12-40% RH on HTR models in mA output mode; ±1% at 30% RH on HTR models in voltage output mode |
| **Reset Rate*** ** | 24 hours |
| **Stability** | ±1% @ 20°C (68°F) annually, for two years |
| **Hysteresis** | RH: 1.5% (typical), Temp: 1° to 10°F in 1°F increments |
| **Linearity** | Included in accuracy spec. |
| **Operating Humidity Range** | 0-100% RH non-condensing |
| **Temperature Coefficient** | ±0.1%RH/°C above or below 25°C (typical) |
| **Operating Temperature Range** | 10° to 35°C (50° to 95°F) |
| **Temperature Accuracy** | ±1.0°C (±1.8°F) |
| **Physical** | UL 94V-0 fire retardant ABS |
| **Scaling** | RH: 0-100%; Temp: 10°to 35°C (50° to 95°F) or 0° to 50°C (32° to 122°F) menu selectable |
| **Calibration Offset** | RH: Adjustable ±10% in 0.1% increments; Temp: Adjustable ±10° in 0.1° increments |
| **Setpoint Range** | RH: 10-80% in 1% increments; Temp: minimum to full scale in 1°F increments |

** The HS sensing element has a 1-year warranty. The element is not included in the 5-year product warranty.*
*** Specified accuracy with 24VDC supplied power with rising humidity*
****Reset Rate is time required to recover to 50% RH after exposure to 90% RH for 24 hours*
*One side of transformer secondary is connected to signal common, so an isolation transformer or dedicated power supply may be required.*
*RTD/Thermistors in wall packages are not compensated for internal heating of product.*

***Setpoint Relay Transmitter***

The HT Series setpoint relay models also offer thermostat or humidistat functionality. Two separate relays can be configured to control heating and cooling when in thermostat mode, or humidifying and de-humidifying when in humidistat mode.

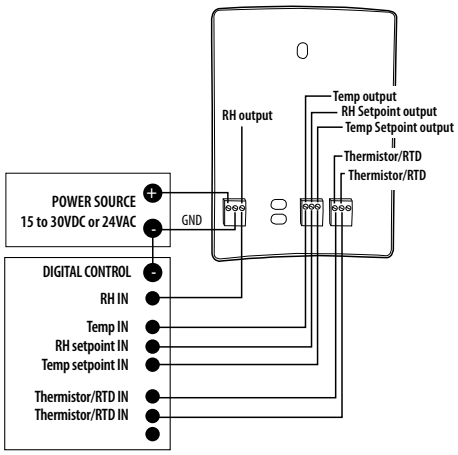
HWS models offer the same precise humidity measurement and control as the HT, but without the temperature and thermostat features.

### APPLICATIONS

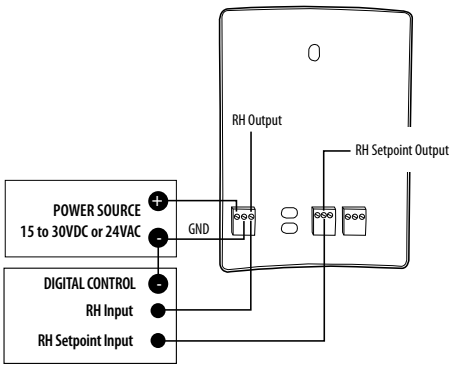
- *Hospitals and operating rooms, pharmaceutical labs*
- *Clean rooms*
- *Food processing plants*
- *Environmental testing facilities, & other institutional applications*

## WIRING EXAMPLES

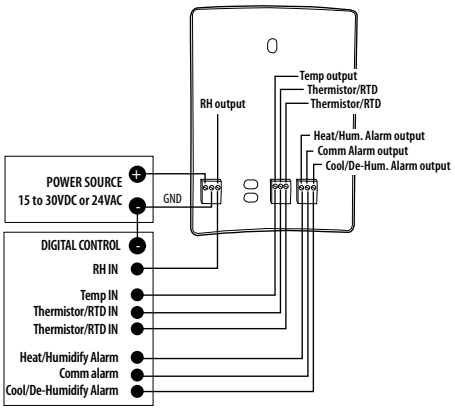
*HT Analog Option*



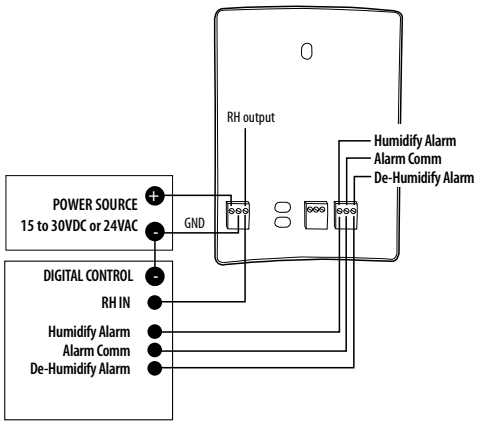

*HWS Analog Option*



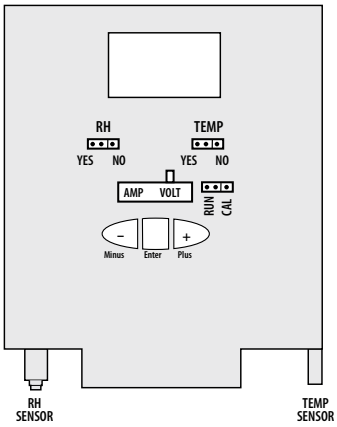

*HT Relay Option*



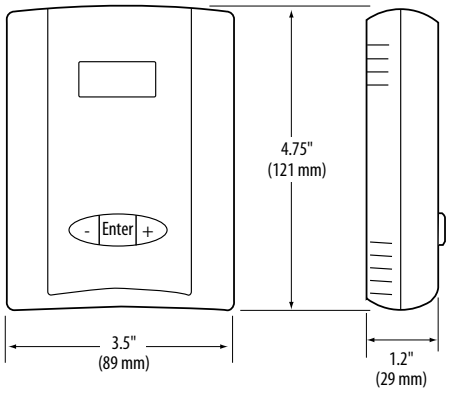

*HWS Relay Option*




## CONFIGURATION




## DIMENSIONAL DRAWING




## ORDERING INFORMATION

CE

*RH/T Combination Device*

| | Accuracy | NIST | Setpoint | | Temp Cal Certificate | Option |
|---|---|---|---|---|---|---|
| HT | ☐ | ☐ | ☐ | S | ☐ | ☐ |
| | **1** = 1%<br>**2** = 2%<br>**3** = 3%<br>**5** = 5% | **N** = NIST (1 & 2% only)<br>**X** =No (2, 3, 5% only) | **A** = Analog<br>**R** = Relay | = CE | **0** = None<br>**1** = 1 point Cal Cert<br>**2** = 2 point Cal Cert | **B** = 100R Platinum, RTD<br>**C** = 1k Platinum, RTD<br>**D** = 10k T2, Thermistor<br>**E** = 2.2k, Thermistor<br>**F** = 3k, Thermistor<br>**G** = 10k CPC Thermistor<br>**H** = 10k T3, Thermistor<br>**J** = 10k Dale, Thermistor<br>**K** = 10k with 11k shunt, Thermistor<br>**M**= 20k NTC, Thermistor<br>**N** = 1800 ohm TAC, Thermistor<br>**Q** = 1uA/C, Linitemp<br>**R** = 10k US, Thermistor<br>**S** = 10k 3A 221<br>**T** = 100k, Thermistor<br>**U** = 20k "D", Thermistor<br>**W** = 10k T2 high accuracy, Thermistor<br>**Y** = 10k T3 high accuracy, Thermistor<br>**Z** = 10k E1, Thermistor |

*Example:*

| HT | 2 | N | R | S | 1 | H |
|---|---|---|---|---|---|---|

*HT Series devices contain both humidity and temperature transmitter outputs. Optional RTDs and thermistors are available.*

*RH Only Device*

| | Accuracy | NIST | Setpoint | | |
|---|---|---|---|---|---|
| HWS | ☐ | ☐ | ☐ | S | |
| | **1** = 1%<br>**2** = 2%<br>**3** = 3%<br>**5** = 5% | **N** = NIST (1 & 2% only)<br>**X** = No (2, 3, 5% only) | **A** = Analog<br>**R** = Relay | = CE | |

*Example:*

| HWS | 2 | N | R | S |
|---|---|---|---|---|

## ACCESSORIES

*Replacement humidity element (HS)*
*Replacement cover (AA53)*
*Replacement housing (AA55)*

*HS*

*AA53*

*AA55*