

## HW SERIES

1% & 2% NIST, or Standard 2%, 3%, or 5%



HW Series deluxe humidity transmitters provide an ideal solution for measuring relative humidity in all conditions. All devices are equipped with a thin-film capacitive sensor that is easily replaceable in the field. These sensors are calibrated to NIST standards, with certificates available (see Ordering Information; choose "N" in NIST block). Temperature sensing options are also available.

The wall-mounted HW model features a low-profile housing with an optional LCD display for easy visibility. All Deluxe models come with a standard five-year warranty. †

### SPECIFICATIONS

#### INPUT POWER

|                  |  |
|------------------|--|
| 4 to 20 mA Mode  | Class 2; Loop powered 12 to 30 Vdc only, 30 mA max. (observe polarity) |
| 0-5/0-10 V Mode* | Class 2; 12 to 30 Vdc/24 Vac, 15 mA max. (observe polarity)            |

#### HUMIDITY

|                                       |   |
|---------------------------------------|---|
| HS Element†                           | Digitally profiled thin-film capacitive (32-bit mathematics) U.S. Patent 5,844,138  |
| Accuracy at 25 °C from 10 to 80% RH** | ±1% at 20 to 40% RH in mA output mode; (multi-point calibration, NIST traceable) ±2%, 3%, or 5% models; ±1% at 12 to 60% RH in voltage output mode; ±1% at 12 to 60% RH in mA output mode with temp transmitter |
| Reset Rate***                         | 24 hours  |
| Stability                             | ±1%@20 °C (68 °F) annually, for two years   |
| Operating Humidity Range              | 0 to 100% RH non-condensing   |
| Hysteresis                            | 1.5% typical  |
| Linearity                             | Included in accuracy spec.  |
| Temperature Coefficient               | ±0.1% RH/°C above or below 25 °C (typical)  |
| Analog Output                         | 4 to 20 mA mode: 2-wire, not polarity sensitive (clipped and capped); 0-5/0-10 V mode: 3-wire, observe polarity   |
| Scaling                               | 0 to 100% RH  |
| Operating Temp Range                  | 10 to 35 °C (50 to 95 °F)   |

#### TEMPERATURE

|                         |   |
|-------------------------|---|
| Temp Transmitter Option | Digital, 4 to 20 mA (clipped and capped) or 0-5/0-10 V output; accuracy ±0.5 °C (±1 °F) typical |
|-------------------------|---|

### Sensor element

Thin-film capacitive sensor element recovers from 100% saturation

### Field replaceable

Replace element in the field... maintain accuracy and minimize downtime

### Interchangeable element

Fully interchangeable element to 1%, 2%, 3%, or 5% accuracy...no calibration

### On-board memory

HS element is microprocessor profiled with on-board non-volatile memory

### Flexible

Polarity insensitive, two-wire 4 to 20 mA or 3-wire 0-5/0-10 Vdc versions...flexible systems compatibility...save time in the field, stock fewer devices

### Calibration free

Calibration-free interchangeable NIST traceable HS element

### APPLICATIONS

- Controlling HVAC systems for improved comfort and energy savings
- Museums, schools, printing shops, and other locations requiring humidity control
- Facilitating compliance with ASHRAE standards for environmental control and indoor air quality

|                      |   |
|----------------------|---|
| Operating Temp Range | 10 to 35 °C (50 to 95 °F and 0 to 50 °C (32 to 122 °F) (switchable) |
|----------------------|---|

#### WARRANTY

|          |           |
|----------|-----------|
| Warranty | 5 years † |
|----------|-----------|

#### AGENCY APPROVALS



† The HS sensing element has a 1-year warranty. The element is not a part of the 5-year product warranty.

\* One side of transformer secondary is connected to signal common, so an Isolation transformer or dedicated power supply may be required.

\*\* Specified accuracy with 24VDC supplied power with rising humidity. RTD/Thermistors are not compensated for internal heating of product.

\*\*\* Reset Rate is the time required to recover to 50% RH after exposure to 90% RH for 24 hours.

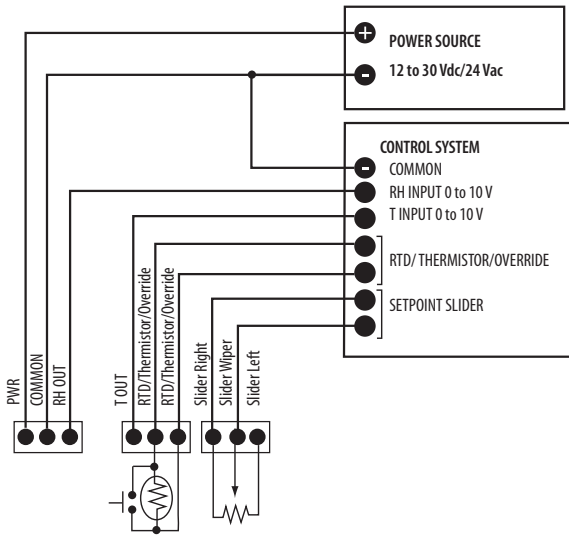
Shielded cabling is required for conformance to EMC standards. Technical information is available from factory upon request or is available on our website: [www.veris.com](http://www.veris.com). EMC Conformance - CE Option: Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

EMC note: Connect this product to a DC distribution network or an AC/DC power adaptor with proper surge protection (EN 61000-6-1 specification requirements).



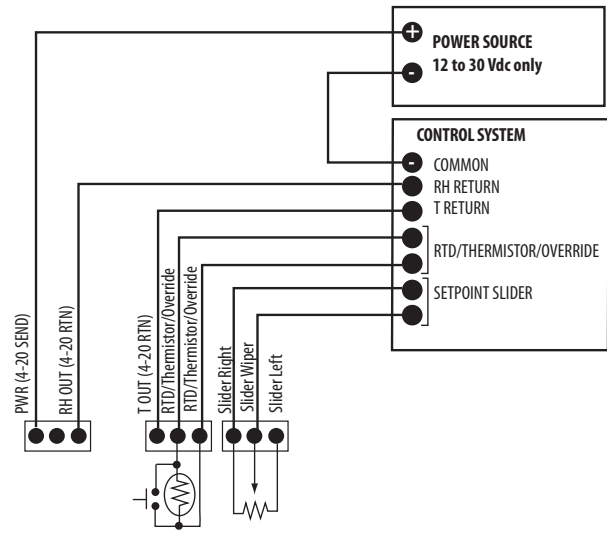
### HW VOLTAGE OUTPUT (3-WIRE, 0-5V/0-10V)

Wiring Diagram



### HW CURRENT OUTPUT (2-WIRE, 4 TO 20 mA)

Wiring Diagram



## ORDERING INFORMATION

#### Non-Display Models

|  |                                      |   |                          |   |   |
|--|--------------------------------------|---|--------------------------|---|---|
| Display                                  | Accuracy                             | NIST  | US or EU                 | Temp                                    | Sensor Type   |
| HW <input checked="" type="checkbox"/> X | <input type="checkbox"/>             | <input type="checkbox"/>                                    | <input type="checkbox"/> | <input type="checkbox"/>                | <input type="checkbox"/>  |
| X = No Display                           | 1 = 1%<br>2 = 2%<br>3 = 3%<br>5 = 5% | N = NIST<br>(1% & 2% only)<br>X = No<br>(2%, 3%, & 5% only) | S = Standard<br>C = CE   | T = Temp#<br>X = No Temp<br>(Stop here) | A = Transmitter: 10 to 35 °C<br>(50 to 95 °F) & 0 to 50 °C<br>(32 to 122 °F) (switchable)<br>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 |

Options Available

|   |   |   |                                  |
|---|---|---|----------------------------------|
| Temp Cal Cert                               | Option  | Value   | Housing                          |
| <input type="checkbox"/>                    | <input type="checkbox"/>  | <input type="checkbox"/>                            | <input type="checkbox"/>         |
| X = No cert<br>1 = 1pt cal*<br>2 = 2pt cal* | 1 = Push Button Override<br>2 = Set Point Slider<br>3 = Push Button Override and Set Point Slider | A = 1k<br>F = 10k<br>G = 20k<br>K = 50k<br>M = 100k | Blank = Cloud white<br>B = Black |

#### Display Models

|  |                                      |   |                          |   |   |
|--|--------------------------------------|---|--------------------------|---|---|
| Display                                  | Accuracy                             | NIST  | US or EU                 | Temp.   | Sensor Type   |
| HW <input checked="" type="checkbox"/> L | <input type="checkbox"/>             | <input type="checkbox"/>                                    | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/>  |
| L = LCD                                  | 1 = 1%<br>2 = 2%<br>3 = 3%<br>5 = 5% | N = NIST<br>(1% & 2% only)<br>X = No<br>(2%, 3%, & 5% only) | S = Standard<br>C = CE   | T = Temp#<br>TA = Transmitter only<br>D = Transmitter & resistive element<br>X = No Temp<br>(Stop here) | None = Select for TA temp option only<br>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 |

Options Available

|   |   |   |                                  |
|---|---|---|----------------------------------|
| Temp Cal Cert                               | Option  | Value   | Housing                          |
| <input type="checkbox"/>                    | <input type="checkbox"/>  | <input type="checkbox"/>                            | <input type="checkbox"/>         |
| X = No cert<br>1 = 1pt cal*<br>2 = 2pt cal* | 1 = Push Button Override<br>2 = Set Point Slider<br>3 = Push Button Override and Set Point Slider | A = 1k<br>F = 10k<br>G = 20k<br>K = 50k<br>M = 100k | Blank = Cloud white<br>B = Black |

‡ In order for unit to display both temp and RH, use the TA or D temp selection.  
Temp displayed on LCD is read from temperature transmitter, not resistive element. If only the resistive output is selected for temp. output, LCD will not display temp.  
\* Not available with W and Y high-accuracy thermistors.

#### Examples:

|    |                                       |                            |                            |                            |                            |                            |                            |                            |                            |
|----|---------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| HW | <input checked="" type="checkbox"/> L | <input type="checkbox"/> 2 | <input type="checkbox"/> N | <input type="checkbox"/> C | <input type="checkbox"/> T | <input type="checkbox"/> A | Stop Here                  |                            |                            |
| HW | <input checked="" type="checkbox"/> L | <input type="checkbox"/> 2 | <input type="checkbox"/> N | <input type="checkbox"/> C | <input type="checkbox"/> T | <input type="checkbox"/> C | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 | <input type="checkbox"/> F |
| HW | <input type="checkbox"/> X            | <input type="checkbox"/> 5 | <input type="checkbox"/> X | <input type="checkbox"/> S | <input type="checkbox"/> X | Stop Here                  |                            |                            |                            |

