

# Deluxe Wall Humidity Sensors

## HW Series



HWL



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

### FEATURES

- Thin-film capacitive sensor element recovers from 100% saturation
- Fully interchangeable element to 1%, 2%, 3%, or 5% accuracy...no calibration
- Replace element in the field...maintain accuracy and minimize downtime
- Polarity insensitive, two-wire 4-20 mA or 3-wire 0-5V/0-10 VDC versions...flexible systems compatibility...save time in the field and stock fewer devices
- Calibration-free interchangeable NIST traceable HS element
- HS element is microprocessor profiled with on-board nonvolatile memory
- Multi-point digital calibration to NIST standards
- NIST certification available
- Minimizes field calibration downtime

### 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

### SPECIFICATIONS

**5 Year  
Warranty**

INPUT POWER	
<b>Voltage Model</b>	4-20 mA mode: loop powered 12-30VDC only, 30mA max.
<b>mA Model</b>	0-5V/0-10V mode: 12-30VDC/24VAC, 15mA max.
HUMIDITY	
<b>HS Element</b>	Digitally profiled thin-film capacitive (32 bit mathematics) U.S. Patent 5,844,138†
<b>Accuracy at 25°C from 10-80% RH**</b>	±1% at 20-40% RH in mA output mode; (multi-point calibration, NIST traceable) ±2%, 3%, or 5% models; ±1% at 12-60% RH in voltage output mode; ±1% at 12-60% RH in mA output mode with temp transmitter;
<b>Reset Rate***</b>	24 hours
<b>Stability</b>	±1%@20°C (68°F) annually, for two years
<b>Operating Humidity Range</b>	0 to 100% RH noncondensing
<b>Hysteresis</b>	1.5% typical
<b>Linearity</b>	Included in accuracy spec.
<b>Temperature Coefficient</b>	±0.1% RH/°C above or below 25°C (typical)
<b>Analog Output</b>	4-20mA mode: 2-wire, not polarity sensitive (clipped and capped); 0-5V/0-10V mode: 3-wire, observe polarity
<b>Scaling</b>	0-100% RH
<b>Operating Temp Range</b>	10° to 35°C (50° to 95°F)
TEMPERATURE	
<b>Temp Transmitter Option</b>	Digital, 4-20mA (clipped and capped) or 0-5V/0-10V output; accuracy ±0.5°C (±1°F) typical
<b>Operating Temp Range</b>	10° to 35°C (50° to 95°F and 0° to 50°C (32° to 122°F) (switchable)

† 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 2006/95/EC and EMC Directive 2004/108/EC.

EMC Special 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).

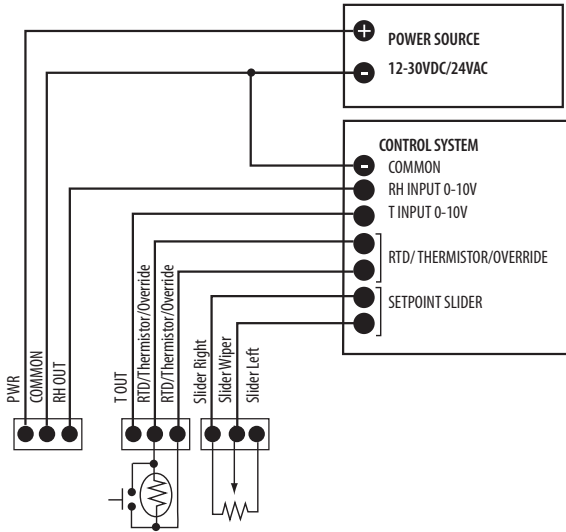
### DESCRIPTION

**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.

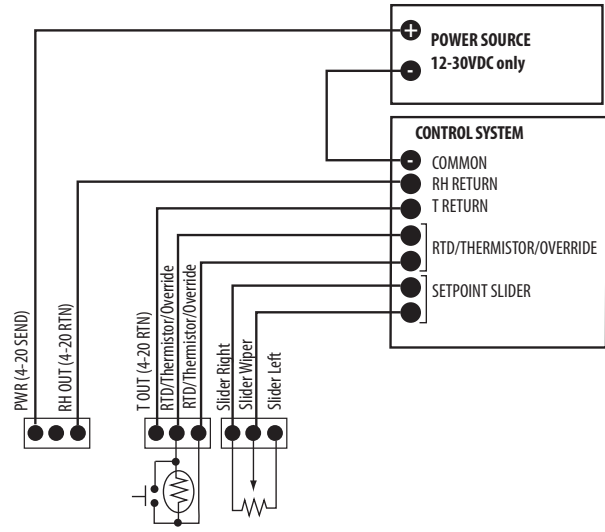
The wall-mounted HW model features a low-profile housing with an optional LCD display for easy visibility. All Deluxe models come with a standard five-year warranty.

WIRING DIAGRAMS

HW Voltage Output (3-Wire, 0-5V/0-10V)



HW Current Output (2-Wire, 4-20mA)



ORDERING INFORMATION



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"/>
= No	1 = 1% 2 = 2% 3 = 3% 5 = 5%	N = NIST (1% and 2% only) X = No (2%, 3%, & 5% only)	S = Standard C = CE	T = Temp # X = No Temp (Stop here)	A = Transmitter: 10° - 35°C (50° - 95°F) & 0° - 50°C (32° - 122°F) (switchable) B = 100R Platinum, RTD C = 1k Platinum, RTD D = 10k T2, Thermistor E = 2.2k, Thermistor F = 3k, Thermistor G = 10k CPC, Thermistor H = 10k T3, Thermistor J = 10k Dale, Thermistor K = 10k with 11k shunt, Thermistor M = 20k NTC, Thermistor N = 1800 ohm TAC, Thermistor Q = 1uA/C, Linitemp R = 10k US, Thermistor S = 10k 3A 221 T = 100k, Thermistor U = 20k "D", Thermistor W = 10k T2 high accuracy, Thermistor Y = 10k T3 high accuracy, Thermistor Z = 10k E1, Thermistor

Options Available

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

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"/>
= LCD	1 = 1% 2 = 2% 3 = 3% 5 = 5%	N = NIST (1% & 2% only) X = No (2%, 3%, & 5% only)	S = Standard C = CE	T = Temp # TA = Transmitter only D = Transmitter & resistive element X = No Temp (Stop here)	None = Select for TA temp option only B = 100R Platinum, RTD C = 1k Platinum, RTD D = 10k T2, Thermistor E = 2.2k, Thermistor F = 3k, Thermistor G = 10k CPC, Thermistor H = 10k T3, Thermistor J = 10k Dale, Thermistor K = 10k with 11k shunt, Thermistor M = 20k NTC, Thermistor N = 1800 ohm TAC, Thermistor Q = 1uA/C, Linitemp R = 10k US, Thermistor S = 10k 3A 221 T = 100k, Thermistor U = 20k "D", Thermistor W = 10k T2 high accuracy, Thermistor Y = 10k T3 high accuracy, Thermistor Z = 10k E1, Thermistor

Options Available

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

Examples:

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

ACCESSORIES



Replacement humidity element (HS)  
Replacement covers for wall units (AA51, AA51B, AA52, AA52B)  
Replacement cloud white wall housing (AA55)