

HW SERIES

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



HWL

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
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Sensor element

Thin-film capacitive sensor element recovers from 100% saturation

Interchangeable element

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

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

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

Field replaceable

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

On-board memory

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

Calibration free

Calibration-free interchangeable NIST traceable HS element

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

Warranty	5 years †
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AGENCY APPROVALS



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

†† The CE mark indicates RoHS2 compliance. Please refer to the CE Declaration of Conformity for additional details.

* 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.

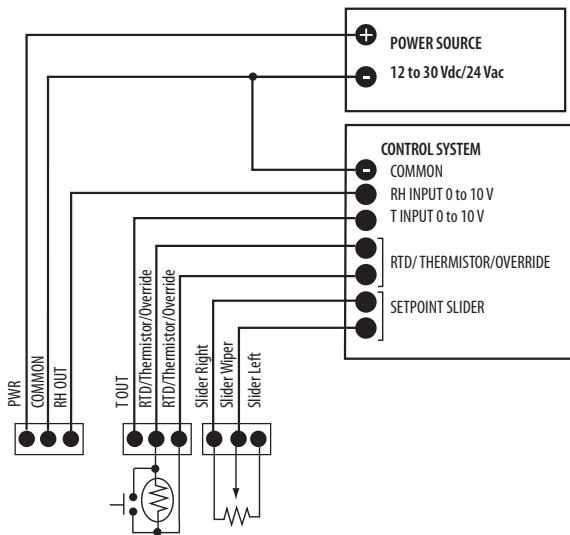
*** Reset Rate is the time required to recover to 50% RH after exposure to 90% RH for 24 hours.

Shielded cabling is required for conformance to EMC standards. Technical information is available from factory upon request or is available on our EMC Conformance - CE Option: Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

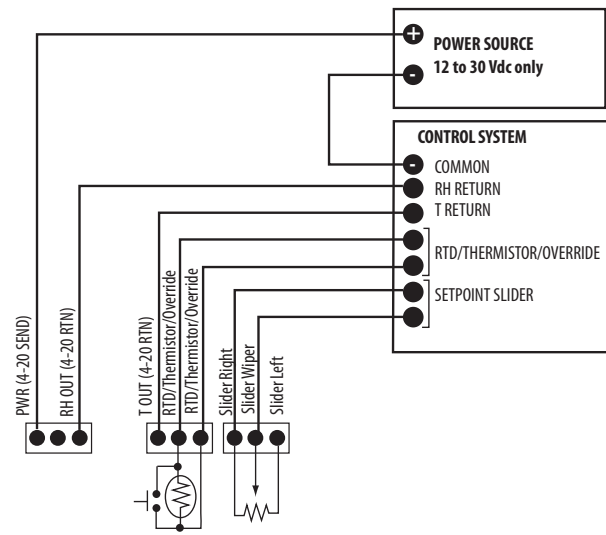
EMC note: Connect this product to a DC distribution network or an AC/DC power adaptor with proper surge protection (EN 61000-6-1 specification requirements).

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

Wiring Diagram

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

Wiring Diagram

**ORDERING INFORMATION**

Display	Accuracy	NIST	US or EU	Temp	Sensor Type	Options Available
HW <input type="checkbox"/> L = LCD	<input type="checkbox"/> 1 = 1% <input type="checkbox"/> 2 = 2% <input type="checkbox"/> 3 = 3% <input type="checkbox"/> 5 = 5%	<input type="checkbox"/> N = NIST (1% & 2% only) <input type="checkbox"/> X = No (2%, 3%, & 5% only)	<input type="checkbox"/> S = Standard <input type="checkbox"/> C = CE	<input type="checkbox"/> T = Temp <input type="checkbox"/> X = No Temp (Stop here)	<input type="checkbox"/> A = Transmitter: 10 to 35 °C (50 to 95 °F) & 0 to 50 °C (32 to 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	<div>Options Available</div> <div>Temp Cal Cert</div> <input type="checkbox"/> X = No cert 1 = 1pt cal* 2 = 2pt cal* <div>Option</div> <input type="checkbox"/> 1 = Push Button Override 2 = Set Point Slider 3 = Push Button Override and Set Point Slider <div>Value</div> <input type="checkbox"/> A = 1k F = 10k G = 20k K = 50k M = 100k <div>Housing</div> <input type="checkbox"/> Blank = Cloud white B = Black
HW <input type="checkbox"/> L = LCD	<input type="checkbox"/> 1 = 1% <input type="checkbox"/> 2 = 2% <input type="checkbox"/> 3 = 3% <input type="checkbox"/> 5 = 5%	<input type="checkbox"/> N = NIST (1% & 2% only) <input type="checkbox"/> X = No (2%, 3%, & 5% only)	<input type="checkbox"/> S = Standard <input type="checkbox"/> C = CE	<input type="checkbox"/> T = Temp <input type="checkbox"/> TA = Transmitter only <input type="checkbox"/> D = Transmitter & resistive element <input type="checkbox"/> X = No Temp (Stop here)	<div>Options Available</div> <div>Temp Cal Cert</div> <input type="checkbox"/> X = No cert 1 = 1pt cal* 2 = 2pt cal* <div>Option</div> <input type="checkbox"/> 1 = Push Button Override 2 = Set Point Slider 3 = Push Button Override and Set Point Slider <div>Value</div> <input type="checkbox"/> A = 1k F = 10k G = 20k K = 50k M = 100k <div>Housing</div> <input type="checkbox"/> Blank = Cloud white B = Black	

Examples:

HW ☐ L ☐ 2 ☐ N ☐ C ☐ T ☐ A Stop Here

HW ☐ L ☐ 2 ☐ N ☐ C ☐ T ☐ C ☐ 2 ☐ 2 ☐ F

HW ☐ X ☐ 5 ☐ X ☐ S ☐ X Stop Here

* 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.