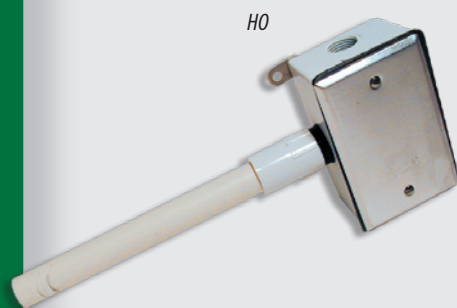


1% & 2% NIST, or STANDARD  
2%, 3%, or 5%

**5 Year**  
Warranty



Die cast metal housing and an extended five-year warranty



Exceptional accuracy, long-term stability...the best in the industry for serviceability. Available in 2%, 2% NIST, 3%, or 5% accuracies

# Deluxe Duct and Outdoor Humidity Sensors

HD/HO 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.

The duct mounted HD is encased in a die cast metal housing for extra strength. The outdoor HO housing is completely weather proof – the most rugged sensor available.

All Deluxe models come with an extended five-year warranty.

## APPLICATIONS

- Managing energy systems
- 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

## Sense humidity in harsh environments

- Thin-film polymer capacitive sensor element recovers from 100% saturation
- Fully interchangeable element to 1% (HD only), 2%, 3%, or 5% accuracy. Calibration-free!
- Replace element in the field...maintain accuracy and minimize downtime

## Rugged industrial design

- Duct sensor element can be serviced without disturbing conduit
- Polarity insensitive, two-wire 4-20mA, or 3-wire 0-5/0-10VDC versions...flexible systems compatibility

## 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

## SPECIFICATIONS

<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% (HD only), 2%, 3%, or 5% (specify); multi-point calibration, NIST traceable
<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 (non-condensing)
<b>Hysteresis</b>	1.5% typical
<b>Linearity</b>	Included in accuracy spec.
<b>Duct Only Temperature Effect</b>	±0.1% RH/°C above or below 25°C (typical)
<b>Outdoor Only Temperature Effect</b>	Voltage Versions (0.0015x%RHx(T°C-25))_ (%RHx0.0008xabs(T°C-25)) mA Versions (0.0013x%RHx(T°C-25))
<b>Analog Output</b>	4-20mA version: 2-wire, polarity insensitive, (clipped and capped) 0-5V/0-10V versions: 3-wire, observe polarity
<b>Scaling</b>	0-100% RH
<b>Operating Temperature Range</b>	-40° to 50°C (-40° to 122°F)
<b>Input Power***</b>	4-20mA version: loop powered 12-30VDC only, 30mA max. 0-5V/0-10V versions: 12-30VDC/24VAC, 15mA max.
<b>Optional Temperature Transmitter Output</b>	Digital, 4-20mA (clipped and capped) or 0-5V/0-10V output; HO transmitter accuracy: ±1.3°C (±2.3°F) typical; HD transmitter accuracy: ±0.5°C (1.0°F) typical
<b>EMC Conformance – CE Option</b>	EN 50081-1, EN 50082-1, EN 61000-4-4, EN 61000-4-5, EN 61000-4-3, ENV 50204, EN 61000-4-6

\*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.

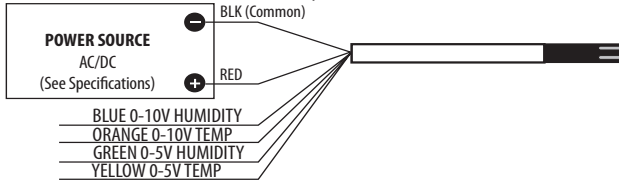
\*\*\*One side of transformer secondary is connected to signal common, so an Isolation transformer or dedicated power supply may be required.

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).

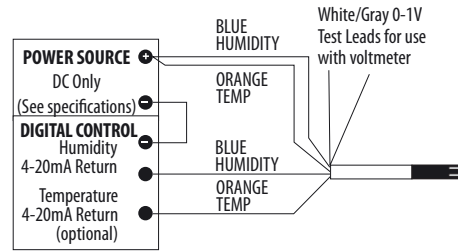


APPLICATION/WIRING DIAGRAMS

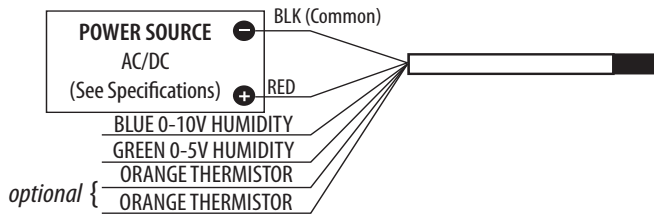
HD/HO 0-5V/0-10V Temperature Transmitter Versions



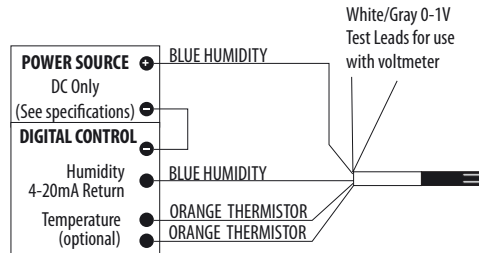
HD/HO 4-20 mA Temperature Transmitter Versions



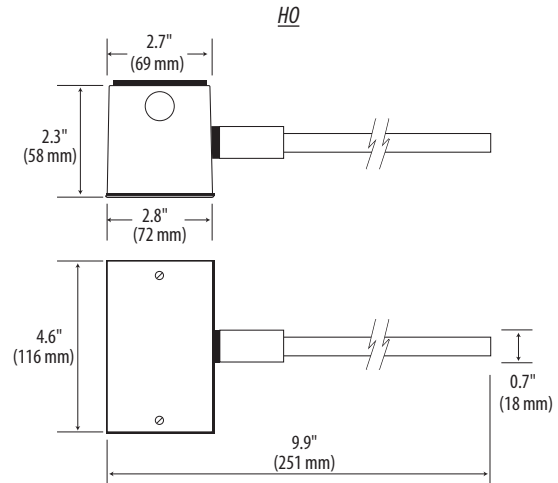
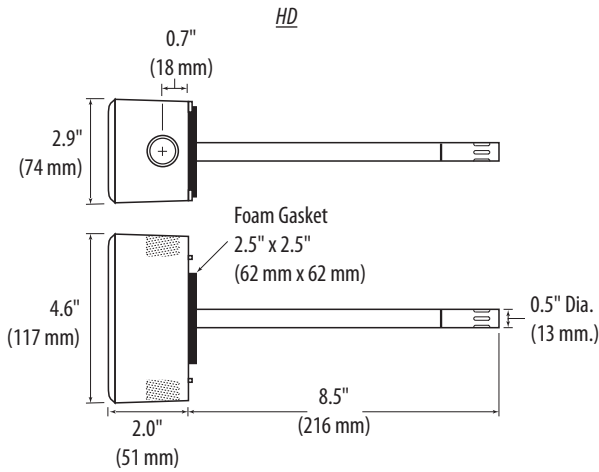
HO (0-5V/0-10V Resistance Versions)



HO 4-20mA Resistance Versions



DIMENSIONAL DRAWINGS



ORDERING INFORMATION



Enclosure	Accuracy	NIST	Output	US or EU	Temp.
H <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D = RH Duct	1 = 1%	N = NIST 1% & 2% only	M = 4-20mA	S = Standard	T = Temp
O = Outdoor	2 = 2%	X = None 2%, 3%, 5% only	V = 0-5V/0-10VDC	C = CE	X = No Temp (Stop here)
	3 = 3%				
	5 = 5%				
	(1% not available on HO)				

Example: (No Temp)

H  0  2  X  M  S  X

Example: (With Temp)

H  D  2  N  V  C  T  C  2

Humidity Transmitter Combination

Sensor Type	Range	OPTION Temp Cert
<input type="checkbox"/> A = Transmitter	<input type="checkbox"/> 1 = -40° to 50°C (-40° to 122°F)	<input type="checkbox"/> Blank = None
	<input type="checkbox"/> 2 = 0° to 50°C (32° to 122°F)	<input type="checkbox"/> 1 = 1pt Cal
		<input type="checkbox"/> 2 = 2pt Cal

Humidity RTD/Thermistor Combination

Sensor Type	OPTION Temp Cert
<input type="checkbox"/> B = 100R Platinum, RTD	<input type="checkbox"/> Blank = None
<input type="checkbox"/> C = 1k Platinum, RTD	<input type="checkbox"/> 1 = 1pt Cal
<input type="checkbox"/> D = 10k T2, Thermistor	<input type="checkbox"/> 2 = 2pt Cal
<input type="checkbox"/> E = 2.2k, Thermistor	
<input type="checkbox"/> F = 3k, Thermistor	
<input type="checkbox"/> G = 10k CPC, Thermistor	
<input type="checkbox"/> H = 10k T3, Thermistor	
<input type="checkbox"/> J = 10k Dale, Thermistor	
<input type="checkbox"/> K = 10k with 11k shunt, Thermistor	
<input type="checkbox"/> M = 20k NTC, Thermistor	
<input type="checkbox"/> N = 1800 ohm TAC, Thermistor	
<input type="checkbox"/> Q = 1uA/°C, Linitemp	
<input type="checkbox"/> R = 10k US, Thermistor	
<input type="checkbox"/> S = 10k 3A 221, Thermistor	
<input type="checkbox"/> T = 100k, Thermistor	
<input type="checkbox"/> U = 20k "D", Thermistor	

ACCESSORIES

Water guard and other accessories...see page 218.  
Replacement HS humidity element...see page 76.

