

HD2 ANALOG SERIES

Duct Mount Humidity Sensors



HD2 Analog

HD2 Analog Series Humidity Transmitters provide an ideal solution for measuring relative humidity in a wide range of conditions. All models are equipped with a solid state capacitive humidity sensor that is easy to replace in the field and a solid state temperature sensor for high accuracy measurements.

HD2 is an all-in-one device combining humidity and temperature sensing. Intended for duct mount applications, the device ensures a building's optimum temperature and humidity levels, resulting in greater energy efficiency.

Each device is an active sensor that converts a humidity or temperature measurement into 4-20 mA, 0 to 5 Vdc or 0 to 10 Vdc analog output.

Different models are available based on application requirements for lower-cost installations.

SPECIFICATIONS

OPERATING & STORAGE ENVIRONMENT

Operating Temp. Range	-35 to 60 °C (-31 to 140 °F)
Operating Humidity Range*	0 to 95% RH (non-condensing)
Storage Temperature	-35 to 70 °C (-31 to 158 °F)
Storage Humidity Range	0 to 95% RH non-condensing
Power Supply	3-wire volt mode: 20 to 30 Vdc, 24 Vac, 50 to 60 Hz; loop powered 20 to 30 Vdc
Output	Selectable 4 to 20 mA, 0 to 5 Vdc, 0 to 10 Vdc
Power Consumption	0.8VA @ 24VAC Voltage Mode 0.96W @ 24VDC Current Mode
Output Load	Voltage mode \geq 5K Ohms Current mode \leq 250 Ohms
Tube Length	200 mm
Medium	Neutral gas, air
Housing Material	Polycarbonate; flammability rating UL 94 V0
Mounting Location	For indoor use only. Not suitable for wet locations.
IP Rating	IP 65
Protection Class	Class III

HUMIDITY SENSOR

Sensor type	Solid state capacitive, replaceable
Accuracy**	$\pm 2\%$ from 10 to 80% RH @ 25 °C (77 °F) $\pm 1\%$, $\pm 2\%$ NIST and 2% replaceable option
Hysteresis	1.5% typical

Calibration free

Fully interchangeable element to 1% or 2% accuracy with NIST calibration certificate...no calibration

Sensor element

Solid state, capacitive sensor element recovers from 100% saturation

Field replaceable

Replace RH element and temp transmitter in the field... maintain accuracy and minimize downtime and cost

Easy to install

Latch-on sensor cover and screwless terminal block wiring with spring actuator

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
- Key component for the LEED green building program and WELL Building Standard*

*Leadership in Energy and Environmental Design (LEED) is a registered trademark of the US Green Building Council. The WELL Building Standard is a trademark of the International WELL Building Institute in the United States and other countries..

Linearity	Included in accuracy specification
Stability	$\pm 1\%$ @ 20°C (68 °F) annually for 2 years
Output Range	0 to 100% RH
Temperature Coefficient	$\pm 0.1\%$ RH/°C above or below 25 °C (77 °F) typical

TEMPERATURE SENSOR

Sensor Type	Solid state, integrated circuit
Temp sensing element	See Ordering Information matrix for thermistor types
Time constant	Air velocity 1.5 m/s. approx. 72 s; Air velocity 3.0 m/s. approx. 52 s
Accuracy***	$\pm 0.2\%$ ($\pm 0.4\%$ °F) typical at 25 °C
Resolution	0.1 °C (0.1 °F)
Range	-35 to 60 °C (-31 to 140 °F)

WIRING TERMINALS

Terminal Blocks	Screwless terminal block with spring actuator, 16-24 AWG
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WARRANTY

Limited Warranty	5 years
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REGULATORY INFORMATION

Agency Approvals	UL 916 European conformance CE: EN 60730-1, EN61000-6-2, EN61000-6-3, EN6100 Series - industrial immunity, EN 61326-1 FCC Part 15 Class A Green Premium (REACH, RoHS), RoHS 2 (China), RCM (Australia), ICES-001 (Canada), UKCA (UK)
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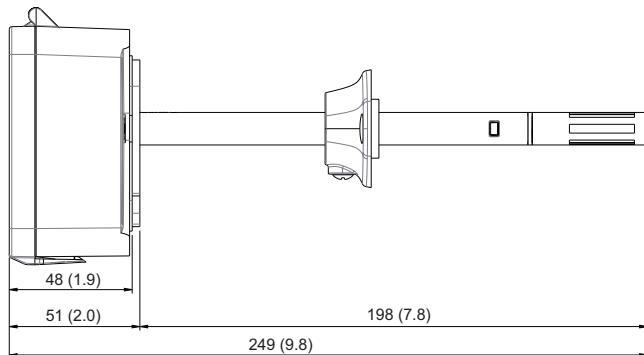
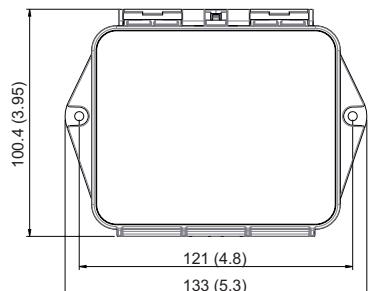
*Duct mount model with temperature and humidity only.

**Humidity sensor measurement uncertainty should include: accuracy, hysteresis, temperature coefficient and stability. Humidity sensor accuracy to -20°C.

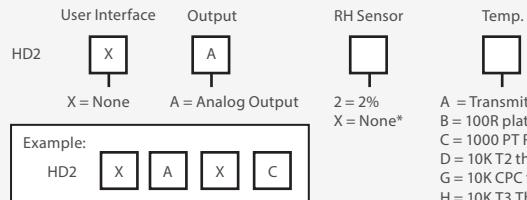
*** $\pm 0.5\%$ °C accuracy from 0 to 60°C, $\pm 1\%$ accuracy from -35 to 0°C.

DIMENSIONAL DRAWING

mm (in.)



ORDERING INFORMATION



2 = 2%
X = None*

A = Transmitter only
B = 100R platinum, RTD
C = 1000 PT RTD
D = 10K T2 thermistor
G = 10K CPC thermistor
H = 10K T3 Thermistor
K = 10K curve G/11K shunt
M = 20K NTC thermistor
N = 1.8K TAC thermistor
R = 10K curve G

*For temperature transmitter models only.

Note: Replaceable RH and temperature modules available to be ordered separately per table below.

REPLACEABLE RH ELEMENTS & TEMPERATURE AND HUMIDITY CALIBRATION MODULES

PART NUMBER	DESCRIPTION
HS2N	Replaceable RH sensor, 2% with NIST certificate
HS2X	Replaceable RH sensor, 2%
TS2*	Replaceable temperature module with 2-point calibration certificate
THS2*	Replaceable temperature and humidity module with 2-point calibration certificate

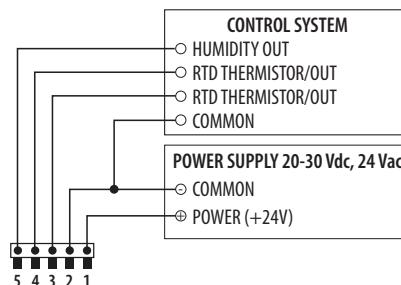
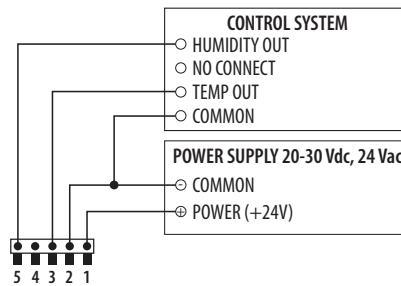
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Replaceable RH and Temperature Module

WIRING DIAGRAM

Voltage Mode



WIRING DIAGRAM

Current Mode

