

HO2 SERIES

Duct Mount Weatherproof Humidity Sensors



HO2

HO2 Series Humidity Sensors provide an ideal solution for measuring relative humidity in a wide range of conditions. All models are equipped with a solid state capacitive sensor that is easy to replace in the field. The housing is completely weatherproof and intended for outdoor mounting.

The HO2 is an all-in-one device combining humidity and temperature sensing. 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 an analog output (4-20 mA) or a voltage level (0 to 5 Vdc or 0 to 10 Vdc).

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

SPECIFICATIONS

OPERATING & STORAGE ENVIRONMENT

Operating Temp. Range	-40 to 55 °C (-40 to 131 °F)
Operating Humidity Range	0 to 95% RH non-condensing
Storage Temperature	-40 to 60 °C (-40 to 140 °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 @ 24V DC Current Mode
Output Load	Voltage mode \geq 5K Ohms Current mode \leq 250 Ohms
Medium	Neutral gas, air
Housing Material	Polycarbonate; flammability rating UL 94 V0
Mounting Location	For outdoor use
IP Rating	IP 65
Protection Class	Class III

RH SENSOR

Sensor Type	Solid state capacitive, replaceable
Accuracy*	$\pm 2\%$ / $\pm 3\%$ from 10 to 80% RH @ 25 °C (77 °F) $\pm 2\%$ NIST and 2% replaceable option
Hysteresis	1.5% typical
Linearity	Included in accuracy specification

Field replaceable

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

Calibration free

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

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.

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	See Ordering Information matrix for thermistor types
Temp. Sensing Element**	10K T3 thermistor, 1000 PT RTD
Time Constant	Air velocity 1.5 m/s. approx. 72 s; Air velocity 3.0 m/s. approx. 52 s
Accuracy***	± 0.2 °C (± 0.4 °F) typical
Resolution	0.1 °C (0.1 °F)
Range	-40 to 55 °C (-40 to 131 °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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COMPLIANCE INFORMATION

Agency Approvals	UL 916, European conformance CE: EN 60730-1 EN 61000-6-2 EN 61000-6-3 EN 61000 Series - industrial immunity EN 61326-1 FCC Part 15 Class A REACH, RoHS, RoHS 2 (China), RCM (Australia), ICES-001 (Canada), UKCA (UK)
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* Humidity sensor measurement uncertainty should include: accuracy, hysteresis, temperature coefficient and stability. Humidity sensor accuracy to -20 °C.

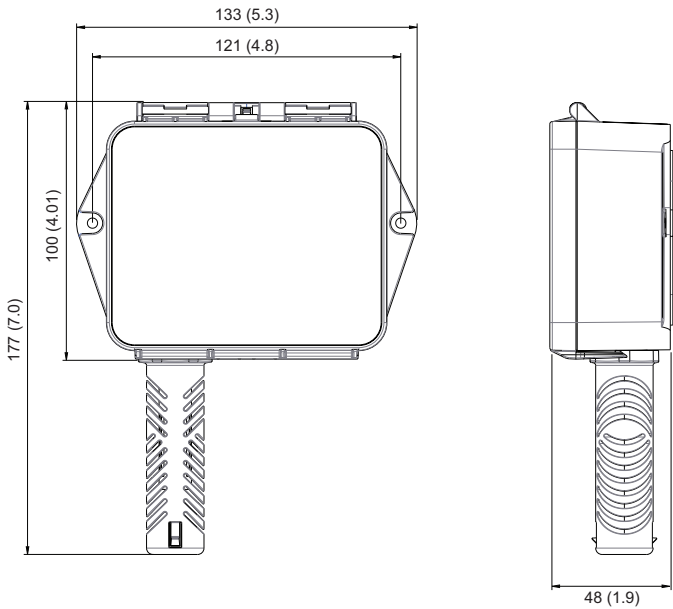
**See thermistor table Z202030 for accuracy.

*** ± 0.5 °C accuracy from 0 to 55°C, ± 1 °C accuracy from -40 °C to 0 °C.



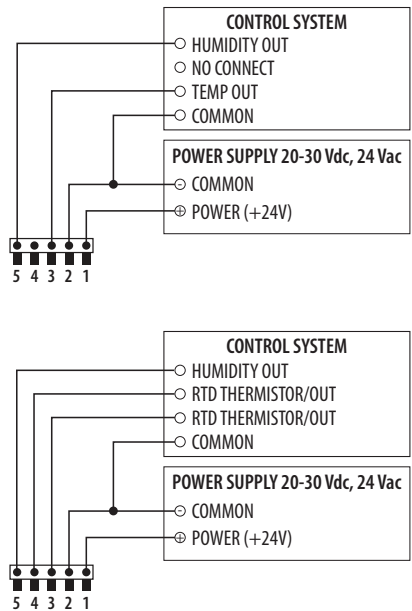
DIMENSIONAL DRAWING

mm (in.)

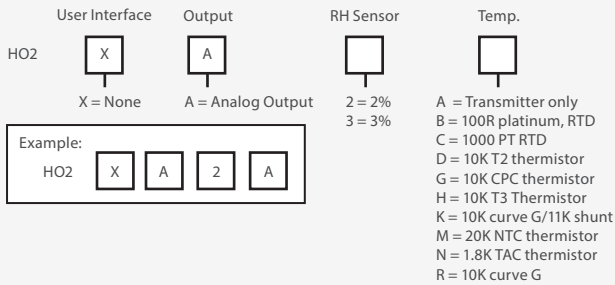


WIRING DIAGRAM

Voltage Mode



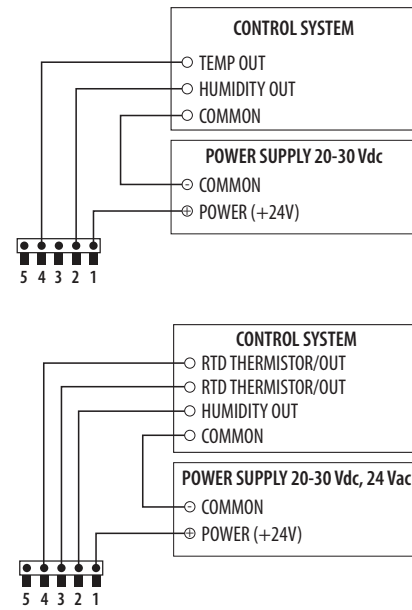
ORDERING INFORMATION



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

WIRING DIAGRAM

Current Mode



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

*For temperature transmitter models only.



Replaceable RH and Temperature Module