RH DUCT

Relative Humidity, Duct

The ACI Relative Humidity Duct utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three and Five-point NIST Calibration Certificates are available and must be ordered separately when placing your order.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

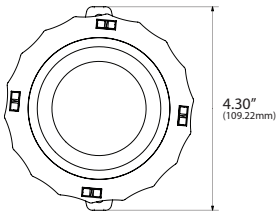
The ACI RH Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

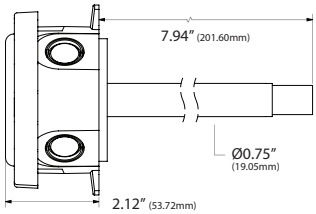
PRODUCT SPECIFICATIONS

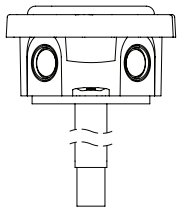
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
OperatingTemperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% and 80%) or 5 Points (20%, 35%, 50%, 65% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-D Series:** 1.22 lbs. (0.55 kg) | **A/RHx-D-4X Series:** 0.50 lbs. (0.227 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

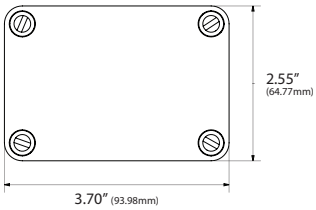
Euro Enclosure [EH]

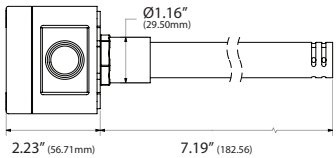


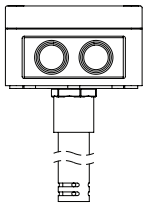




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/RH1-D -OR- 122531

Model #	Item #	Description
A/RH1-D	122531	RH Duct, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH2-D	122687	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH3-D	122931	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH5-D	123085	RH Duct, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH2-D-4X	122689	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure
A/RH3-D-4X	122924	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure

CUSTOM ORDERING

Model # Example: A/ (A.) RH1 (B.) D (C.) (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** (NEMA 4X Enclosure)	
D. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probe

ACCESSORIES ORDERING [NIST]

Model # Example: NIST RH CERT

Model #	Description
NIST RH CERT	RH Calibration Certificate (Specify 3 Point or 5 Point NIST)

Note: When ordering NIST certificates, please add an additional line item under the corresponding A/RHx-D Model Number