



## DUCT WITHOUT BOX

### Flange Mounted Duct Sensor, Platinum RTD

The ACI Platinum Duct without Box Series features a 1/4" diameter stainless steel sensing element with two, 14 or 24 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect the accuracy of your sensors output signal. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor and its lower sensor resolution. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of

moisture upon the sensors as well as increased response times using our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for properly sealing your duct as well as to dampen vibration. Sensor length should be determined by the actual width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. The Duct without Box Series can be ordered with optional plenum rated cables, jacket materials and standard lead lengths.

**Applications:** Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

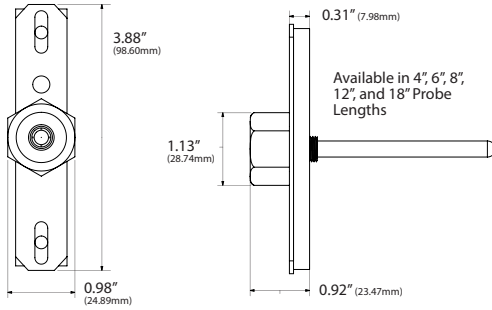
**The ACI Platinum Duct without Box Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, [www.workaci.com](http://www.workaci.com).**

#### PRODUCT SPECIFICATIONS

|  |   |
|--|---|
| <b>Sensor Type   Sensor Curve:</b>               | Platinum RTD   PTC (Positive Temperature Coefficient)   |
| <b>Number Sensing Points:</b>                    | One   |
| <b>Number Wires:</b>                             | <b>A/100-2W-DO Series and A/1K-2W-DO Series:</b> Two (Non-Polarity Sensitive)<br><b>A/100-3W-DO Series and A/1K-3W-DO Series:</b> Three (Polarity Sensitive)  |
| <b>Sensor Output @ 0°C (32°F):</b>               | <b>A/100-xW-DO Series:</b> 100 Ohms nominal   <b>A/1K-xW-DO Series:</b> 1000 Ohms nominal   |
| <b>Sensor Accuracy @ 0°C (32°F):</b>             | +/- 0.06% Class A ( <b>Tolerance Formula:</b> +/- °C = (0.15°C + (0.002 *  t )))<br>where  t  is the absolute value of Temperature above or below 0°C in °C<br><b>-40°C (-40°F):</b> +/- 0.23°C (+/- 0.414°F)   <b>0°C (32°F):</b> +/- 0.15°C (+/- 0.27°F)<br><b>115°C (239°F):</b> +/- 0.38°C (+/- 0.69°F) |
| <b>Din Standard   Temperature Coefficient:</b>   | DIN EN 60751 (IEC 751)   3850 ppm / °C  |
| <b>Sensor Stability:</b>                         | +/- 0.03% after 1000 Hours @ 300°C (572°F)  |
| <b>Response Time (63% Step Change):</b>          | 8 Seconds nominal   |
| <b>Self-Heating   Maximum Operating Current:</b> | <b>100 Ohm RTD:</b> 7 mW/°C (Still Air)   5 mA   <b>1K Ohm RTD:</b> 4 mW/°C (Still Air)   3 mA  |
| <b>Operating   Storage Temperature Range:</b>    | -40 to 115°C (-40 to 239°F)   -40 to 85°C (-40 to 185°F)  |
| <b>Operating Humidity Range:</b>                 | 10 to 95% RH, non-condensing  |
| <b>Probe Material   Flange Material:</b>         | 304 Stainless Steel   Galvanized Steel  |
| <b>Fitting Material   Flammability Rating:</b>   | Polyamide 66 (High Performance Nylon)   UL94-HB   |
| <b>Foam Pad Material   Flammability Rating:</b>  | Neoprene/EPDM/SBR Polymer   UL94-HBF; FMVSS-302; MIL-R-6130C  |
| <b>Lead Length   Conductor Size:</b>             | <b>4", 6" and 8" Probes:</b> 14" (35.6 cm)   <b>12" and 18" Probes:</b> 24" (61cm)   22 AWG (0.65mm)  |
| <b>Lead Wire Insulation   Wire Rating:</b>       | Etched Teflon (PTFE) Colored Leads   MIL-W-16878/4 (Type E)   |
| <b>Conductor Material:</b>                       | Silver Plated Copper  |
| <b>Probe Diameter:</b>                           | 0.250" (6.35mm)   |
| <b>Product Dimensions   Product Weight:</b>      | See table on back of Product Data sheet   |
| <b>Agency Approvals:</b>                         | CE, RoHS2, WEEE   |

# TEMPERATURE | PLATINUM RTDS | COPPER AVERAGING

## DIMENSIONAL DRAWING, WEIGHTS



xx = Sensor Type | yy = Insertion Length

### Duct Without Box [DO] Weights

| ACI Model #         | 4" (Probe Length)    | 6" (Probe Length)    | 8" (Insertion Length) |
|---------------------|----------------------|----------------------|-----------------------|
| A/xx-DO-yy          | 0.10 lbs. (0.045 kg) | 0.11 lbs. (0.050 kg) | 0.12 lbs. (0.054 kg)  |
| A/xx-DO-yy-6'-CL2P  | 0.15 lbs. (0.068 kg) | 0.16 lbs. (0.073 kg) | 0.17 lbs. (0.077 kg)  |
| A/xx-DO-yy-10'-CL2P | 0.20 lbs. (0.091 kg) | 0.21 lbs. (0.095 kg) | 0.22 lbs. (0.100 kg)  |
| A/xx-DO-yy-20'-CL2P | 0.27 lbs. (0.122 kg) | 0.28 lbs. (0.127 kg) | 0.29 lbs. (0.132 kg)  |

| ACI Model #         | 12" (Insertion Length) | 18" (Insertion Length) |
|---------------------|------------------------|------------------------|
| A/xx-DO-yy          | 0.14 lbs. (0.064 kg)   | 0.16 lbs. (0.073 kg)   |
| A/xx-DO-yy-6'-CL2P  | 0.20 lbs. (0.091 kg)   | 0.22 lbs. (0.100 kg)   |
| A/xx-DO-yy-10'-CL2P | 0.24 lbs. (0.108 kg)   | 0.27 lbs. (0.122 kg)   |
| A/xx-DO-yy-20'-CL2P | 0.31 lbs. (0.141 kg)   | 0.34 lbs. (0.154 kg)   |

Standard Views

Product Weights

## STANDARD ORDERING

Model # Example: A/100-2W-DO-4" -OR- 119951

| Model #         | Item # | Description   |
|-----------------|--------|---|
| A/100-2W-DO-4"  | 119951 | 100 Ohm RTD, 2-Wire, Duct 4" w/o Box, Flange Only, 14" Brown/Brown Leads  |
| A/100-2W-DO-6"  | 133370 | 100 Ohm RTD, 2-Wire, Duct 6" w/o Box, Flange Only, 14" Brown/Brown Leads  |
| A/100-2W-DO-8"  | 119952 | 100 Ohm RTD, 2-Wire, Duct 8" w/o Box, Flange Only, 14" Brown/Brown Leads  |
| A/100-2W-DO-12" | 142486 | 100 Ohm RTD, 2-Wire, Duct 12" w/o Box, Flange Only, 24" Brown/Brown Leads |
| A/100-2W-DO-18" | 133019 | 100 Ohm RTD, 2-Wire, Duct 18" w/o Box, Flange Only, 24" Brown/Brown Leads |
| A/1K-2W-DO-4"   | 120290 | 1K Ohm RTD, 2-Wire, Duct 4" w/o Box, Flange Only, 14" Black/Black Leads   |
| A/1K-2W-DO-6"   | 133175 | 1K Ohm RTD, 2-Wire, Duct 6" w/o Box, Flange Only, 14" Black/Black Leads   |
| A/1K-2W-DO-8"   | 120291 | 1K Ohm RTD, 2-Wire, Duct 8" w/o Box, Flange Only, 14" Black/Black Leads   |
| A/1K-2W-DO-12"  | 120289 | 1K Ohm RTD, 2-Wire, Duct 12" w/o Box, Flange Only, 24" Black/Black Leads  |
| A/1K-2W-DO-18"  | 142487 | 1K Ohm RTD, 2-Wire, Duct 18" w/o Box, Flange Only, 24" Black/Black Leads  |

## CUSTOM ORDERING

Model # Example: A/ 1K 2W DO 6" 6'CL2P NIST

## MODEL#

|   |  |    |
|---|--|----|
| <b>A. Sensor Series</b> No Selection Required | A/   | A/ |
| <b>B. Model Series</b> Select One (1)         | 100 = 100 Ohm Platinum RTD   1K = 1K Ohm Platinum RTD  |    |
| <b>C. Number of Wires</b> Select One (1)      | 2W = Two Wires   3W = Three Wires  |    |
| <b>D. Configuration</b> No Selection Required | DO = Duct without Box (Mounting Flange Only)   | DO |
| <b>E. Probe Length</b> Select One (1)         | 4" = 4" Probe   6" = 6" Probe   8" = 8" Probe   12" = 12" Probe   18" = 18" Probe  |    |
| <b>F. Lead Wire Options</b> Select One (1)    | ---- = Standard 14 or 24" Etched PTFE Colored Leads<br>6'CL2P = 6 ft (1.83m), 2 Conductor Plenum Rated Cable<br>10'CL2P = 10 ft (3.05m), 2 Conductor Plenum Rated Cable<br>20'CL2P = 20 ft (6.10m), 2 Conductor Plenum Rated Cable |    |
| <b>G. NIST</b> Select One (1)                 | ---- = No NIST Certificate   NIST = NIST Certificate (3 Points)  |    |