# Sun Shield | Humidity | Thermistor

## Weather Proof, Relative Humidity, Thermistor

Automation Components, Inc.
a DwyerOmega brand

The ACI Sun Shield is a reliable solution for protecting relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our ±2 % RH transmitter, any of our standard thermistors, and has field selectable outputs of 4-20 mA, 0-5 VDC and 0-10 VDC. Three point NIST Calibration Certificates are available.

### Applications

Outdoor Humidity and Temperature Monitoring

### Warranty

The Sun Shield 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 web site, www.workaci.com.

### 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):** ±2 % from 10 to 95 %

**RH Measurement Range:** 0-100 %

**Operating RH Range:** 0 to 95 % RH, non-condensing (conformally coated PCB's)

**Operating Temperature 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 Connection:** Screw Terminal Blocks (polarity sensitive)

**Wire Size:** 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 %, & 80 %)

**Nominal Thermistor Resistive Output @ 77 °F (25 °C)**

**(Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient)**

**RHx-1.8K Series:** 1.8KΩ (Red/Yellow)
**RHx-3K Series:** 3KΩ (White/Brown)
**RHx-AN Series (Type III):** 10KΩ (White/White)
**RHx-AN-BC Series:** 5.238KΩ (White/Yellow)
**RHx-CP Series (Type III):** 10KΩ (White/Green)
**RHx-CSI Series:** 10KΩ (Green/Yellow)
**RHx-10KS Series:** 10KΩ (White/Blue)
**RHx-10K-E1 Series:** 10KΩ (Gray/Orange)
**RHx-20K Series:** 20KΩ (Brown/Blue)
**RHx-100KS Series:** 100KΩ (Black/Yellow)

**Thermistor Accuracy 32-158 °F (0-70 °C)**

±0.36 °F (0.2 °C) except 10K-E1 Series: ±0.54 °F (0.3 °C)
**1.8K Series:** ±0.9 °F (0.5 °C) @ 77 °F (25 °C) & ±1.8 °F (1.0 °C) from 32 to 158 °F (0 to 70 °C)

**Thermistor Power Dissipation Constant:** 3 mW/ °C except 1.8K Series: 1 mW/ °C; 10K-E1 Series: 2 mW/ °C

**Thermistor Sensor Response Time (T63):** 10 seconds nominal

**Lead Wire Length | Conductor Size:** 14" (35.6 cm) | 22 AWG (0.65 mm)

**Insulation | Rating:** Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E

**Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating)**

**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158 °F (-40 to 70 °C); NEMA 4X (IP 66)

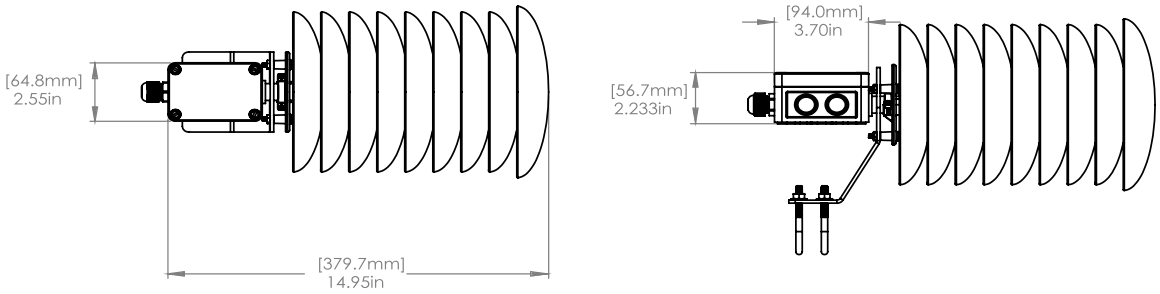
**Sensing Tube Dimensions (Length x Diameter):** 4.73" (120.14 mm) x 0.845" (21.46 mm)

**Product Dimensions (L x W x D):** 14.95" (379.7 mm) x 7.50" (190.50 mm)

**Product Weight:** 4.16 lbs (1.89 kg)

**Agency Approvals:** CE, UKCA, RoHS, WEEE

## Dimensions




**Side View(s)**

# Custom Ordering

| | | Options and Descriptions | Model # |
|---|---|---|---|
| A. | **Sensor Series**<br>*No Selection Required* | **A/** ⟶ | A/ |
| B. | **Accuracy**<br>*No Selection Required* | **RH2** = ±2 % ⟶ | RH2 |
| C. | **Temperature Sensor**<br>*Select One (1)* | **1.8K** **3K** **10KS** **10K-E1** **AN (Type III)** **AN-BC** **CP (Type III)** **CSI** **20K** **100KS** | |
| D. | **Configuration**<br>*No Selection Required* | **O-SUN** = Outside Sun Shield (NEMA 4X) ⟶ | O-SUN |
| E. | **Output Signal**<br>*Select One (1)* | ---- = 4 to 20 mA (Default)<br>0 to 10 VDC (Field Selectable)<br>0 to 5 VDC (Field Selectable) | |
| F. | **NIST (Temperature & RH)**<br>*Select One (1)* | ---- = No NIST Certificate<br>**NIST** = NIST Certificate (3 Points) | |

| Model # Example: | A/ | RH2 | AN | O-SUN | | NIST |
|---|---|---|---|---|---|---|
| | A. | B. | C. | D. | E. | F. |

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