



TEMPERATURE

OUTDOOR AIR THERMISTOR AND RTD SENSORS

ST-O* SERIES

DESCRIPTION

The Precon **ST-O* Series Outdoor Air Sensors** provide remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The temperature-sensitive element is sheathed in a stainless steel tube and mounted inside a ventilated, to minimize radiant energy and weather related effects.

FEATURES

- **Lifetime warranty**
- **Vented weather shield for quick response**
- **Moistureproof with 8' (2.4m) lead**
- **Weather resistant enclosure**
- **Ultra high accuracy optional**

APPLICATION

The **ST-O* outside air sensor** is ideal for measuring outdoor ambient air temperatures. It comes with a weather resistant enclosure that should be shielded from direct exposure from the elements on the shaded side of the building. For best results do not mount above doors, windows, air intakes, or exhausts.

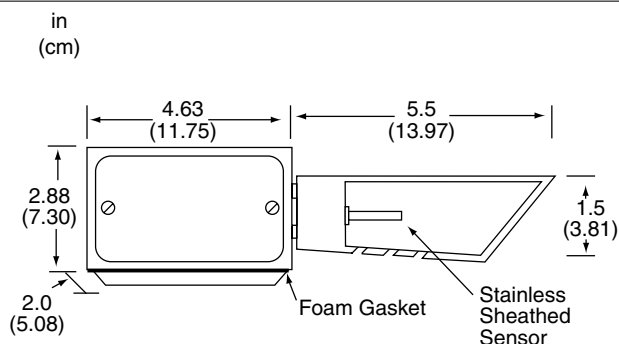
Precon™



ST-O



DIMENSIONS



SPECIFICATIONS

Accuracy

Thermistor $\pm 0.36^{\circ}\text{F}$ (0.2°C)

RTD

Type 63 $\pm 0.72^{\circ}\text{F}$ (0.40°C)

Type 71 $\pm 0.054^{\circ}\text{F}$ (0.03°C)

Type 81, 85 $\pm 0.27^{\circ}\text{F}$ (0.15°C)

Type 91 $\pm 0.54^{\circ}\text{F}$ (0.30°C)

Sensor types available

Thermistor 2.252 k Ω , 3 k Ω , 10 k Ω , 20 k Ω , 100 k Ω

RTD

Type 63 1000 Ω Nickel

Type 71, 81 100 Ω Pt 385 Curve

Type 85 1000 Ω Pt 385 Curve

Type 91 1000 Ω Pt 375 Curve

Temperature range

Thermistor 10° to 230°F (-12° to 110°C)

RTD

Type 63 -76° to 392°F (-60°C to 200°C)

Type 71 -58° to 572°F (-50°C to 300°C)

Type 81, 85, 91 -67° to 240°F (-55°C to 115°C)

Temperature response

Thermistor Negative temperature coefficient

RTD Positive temperature coefficient

Stability

Thermistor 0.24°F (0.13°C) over five years

RTD $<0.09^{\circ}\text{F}$ (0.05°C) over five years

Connections

8' (2.44m) of 24 AWG pigtails

prestripped

Mounting

Directly to wall with screws or

toggle bolts

Weight

1 lb (0.45 kg)

Warranty

Lifetime

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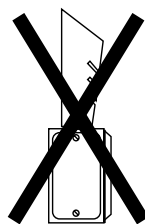
MOUNTING/WIRING

Mounting

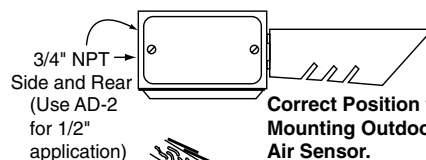
Toggle bolts or other direct wall mount screws can be used for outside mounting. For conduit connections, 3/4" NPT threads are available in the back and side.

Wiring

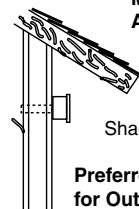
Terminate using the full 8' (2.44m) lead length provided to avoid moisture migration from the field connection. Solder the leads where possible or use crimp-type butt splice. Wire nuts are not recommended.



Do not mount sensor in vertical position with the sun shield pointing up.



Correct Position for Mounting Outdoor Air Sensor.



Shaded side of building →

Preferred Mounting Location for Outdoor Air Sensor

For best results do not mount above doors, windows, air intakes, or exhausts.

ORDERING INFORMATION

MODEL	DESCRIPTION
ST-O3	OSA temperature sensor, 10,000Ω thermistor Type III
ST-O21	OSA temperature sensor, 2250Ω thermistor Type II
ST-O22	OSA temperature sensor, 3,000Ω thermistor Type II
ST-O24	OSA temperature sensor, 10,000Ω thermistor Type II
ST-O27	OSA temperature sensor, 100,000Ω thermistor Type II
ST-O42	OSA temperature sensor, 20,000Ω thermistor Type IV
ST-O63	1000Ω nickel OSA RTD @ 70°F (21°C), (yellow leads)
ST-O71	100Ω ultra high accurate OSA RTD @ 32° (0°C), 385 platinum curve (blue leads)
ST-O81	100Ω OSA temperature sensor RTD @ 32°F (0°C) 381 platinum curve (yellow leads)
ST-O85	1000Ω OSA temperature sensor RTD @ 32°F (0°C) 385 platinum curve (blue leads)
ST-O91	1000Ω OSA temperature sensor RTD @ 32°F (0°C) 375 platinum curve (green leads)
OPTIONS (List options in alphabetical order with dashes)	
QD¼	Nylon insulated Quick Disconnect ¼"
X25	25' (7.6m) lead length 24 AWG
XC25	25' (7.6m) lead length jacketed cable
XCP25	25' Non-shielded plenum cable
XD	Dual sensors in one probe
XG	Greenfield fitting (factory installed)
XLT	Liquid-tight fitting (factory installed)
XMT	Mounting tabs
XN	NIST certificate of conformance
XN1	NIST certificate, one reference point 32°F(0°C)
XN2	NIST certificate, two reference points 32°F/158°F(0°C/70°C)
XN3	NIST certificate, three reference points 32°F/77°F/158°F(0°C/25°C/70°C)
XP	Matched sensor pair, matched to ±0.1°F, 0.05°C (must order two sensors)
XPA	Ultra high accuracy, thermistors only, ±0.135°F (0.075°C)
XTB	Terminal block
XZ	Three wire RTD connections(optional only on Type 81, standard on Type 71, not available with XC25 & XCP25 options)