



TEMPERATURE

OUTDOOR AIR THERMISTOR SENSOR

MODEL ST-O◇

DESCRIPTION

The Precon **Model ST-O◇ Outdoor Air Thermistor Sensor** provides precision remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The active sensing element is a highly stable precision thermistor material accurate to within $\pm 0.36^{\circ}\text{F}$ (0.2°C).

The temperature-sensitive element is sheathed in a stainless steel tube and mounted inside a ventilated, treated, white PVC shield to minimize radiant energy and weather related effects. The weather shield is mounted on a weatherproof outlet box for easy installation on an outdoor surface. This rugged enclosure will assure a long life, even under extreme weather conditions.

FEATURES

- **Five-year warranty**
- **$\pm 0.36^{\circ}\text{F}$ (0.2°C) accuracy**
- **Wide selection of thermistor curves**
- **Vented weather shield for quick temperature response**
- **2" x 4" (5.08 x 10.16 cm) weatherproof box**
- **Easy to mount to outside wall**
- **Moistureproof with 8' (2.4m) lead**

OPTIONS

- **Moistureproof with 25' (7.62m) cable**
- **Dual mounted sensors**
- **Moistureproof with 25' (7.62m) leads**
- **NIST traceable certificate**



APPLICATION

The outdoor air temperature assembly should be located in the shade, away from all devices (such as an exhaust fan) that would disturb the normal outdoor environment. A preferred location would be below the eaves, one foot down from the top of a wall, in a permanently shaded spot.

The sensor should be mounted horizontally with the element to the right or left of the handibox. The weather shield assembly features a tapered fitting which allows the shield to be rotated by hand. Air vents on the shield should face downward. Internal mounting knockouts provide for direct wall mounting using screws or toggle bolts.

This sensor is designed for outdoor use with a temperature range of -30° to 140°F (-34° to 60°C).

SPECIFICATIONS			
Sensing element	Thermistor (thermal resistor)	Stability	0.24°F (0.13°C) over five years
Accuracy	$\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable is optional)	Heat dissipation constant	2.7 mW/°C (power needed to raise the temperature by 1°C)
Sensor types available (ref. in ohms @ 77°F/25°C)	2.252K, 3K, 10K, 20K, 100K	Connection	8' (2.44m) of 24 AWG pigtailed prestripped; XTB option for terminals
Temp range	-30° to 140°F (-34° to 60°C)	Mounting	Directly to wall with screws or toggle bolts
Temp response	Negative temperature coefficient		
Sensitivity	See "Sensor Resistance Charts" in the "Technical Reference" section		



TEMPERATURE

OUTDOOR AIR THERMISTOR SENSOR MODEL ST-O◇

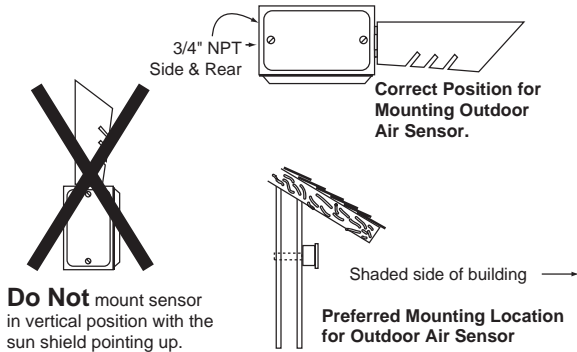
MOUNTING/WIRING

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.

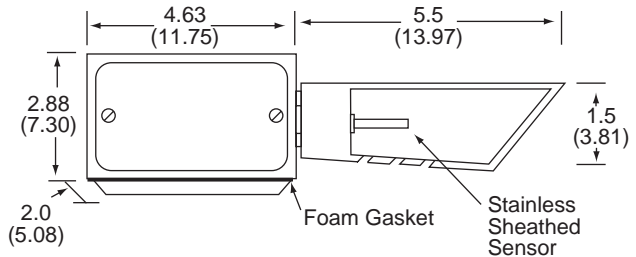


Do Not mount sensor in vertical position with the sun shield pointing up.

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

DIMENSIONS

in
(cm)



TEMPERATURE

ORDERING INFORMATION

MODEL	DESCRIPTION
ST-O3	10,000Ω Outdoor Air Thermistor @ 77°F (25°C) Type III Material (gray leads)
ST-O21	2252Ω Outdoor Air Thermistor @ 77°F (25°C) Type II Material (green leads)
ST-O22	3000Ω Outdoor Air Thermistor @ 77°F (25°C) Type II Material (blue leads)
ST-O24	10,000Ω Outdoor Air Thermistor @ 77°F (25°C) Type II Material (yellow leads)
ST-O27	100,000Ω Outdoor Air Thermistor @ 77°F (25°C) Type II Material (gray leads)
ST-O42	20,000Ω Outdoor Air Thermistor @ 77°F (25°C) Type IV Material (green leads)

OPTIONS

XC25	25' (7.62m) 22 AWG cable
XD	Dual sensors in one probe
XMT	Mounting tabs
XN1	NIST certificate, 1 reference point 32°F (0°C)
XN2	NIST certificate, 2 reference points 32°/160°F (0°/77°C)
XTB	Terminal block
X25	25' (7.62m) leads

ST-O24 - XC25 *Example:* ST-O24-XC25 10 kΩ Type II outdoor air sensor with 25' (7.62m) cable

RELATED PRODUCTS

UR Moisture resistant three-wire butt splice
AD-2 3/4" to 1/2" adapter for 1/2" pipe