



TEMPERATURE

OUTSIDE AIR THERMISTOR AND RTD SENSOR ST-O* SERIES

DESCRIPTION

The **PreCon Model ST-O* Outside Air Thermistor and RTD 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 or platinum RTD. 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 weather resistant outlet box for easy installation on an protected outdoor surface. This rugged enclosure will assure a long life, even under extreme weather conditions.

Precon



ST-O*



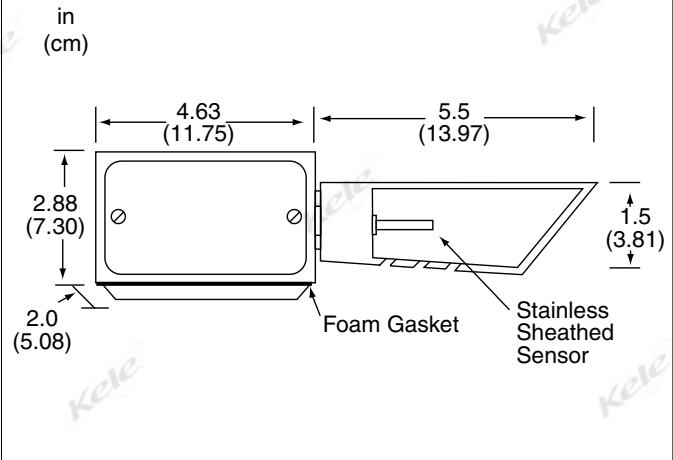
FEATURES

- **Lifetime warranty**
- **Vented weather shield for quick temperature response**
- **Moistureproof with 8 ft (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 to the elements on the shaded side of the building. For best results do not mount above doors, windows, air intakes, or exhausts.

DIMENSIONS



SPECIFICATIONS

Accuracy		Temperature Coefficient	
Thermistor	±0.36°F (0.2°C)	Thermistor	Negative temperature coefficient
RTD		RTD	Positive temperature coefficient
Type 63	±0.72°F (0.40°C)	Temperature Stability	
Type 71	+/-0.0774°F (0.043°C)	Thermistor	0.24°F (0.13°C) over five years
Type 81, 85	±0.27°F (0.15°C)	RTD	Max 0.04% after 1k hours @ 500 °C
Type 91	±0.54°F (0.30°C)	Heat Dissipation	
Sensor Type		2.7 mW/°C (power needed to raise the temperature by 1°C)	
Thermistor	2.252 kΩ, 3 kΩ, 10 kΩ Type II, III & III w/11K shunt, 20 kΩ, 100 kΩ	Enclosure Rating	
		NEMA 4, Metal, weather resistant	
		Mounting	
		Directly to wall with screws or toggle bolts	
		Wiring Terminations	
		8' (2.4m) of 24 AWG pigtails with prestripped ends, type 71 & 81 have 18" leads	
		Weight	
		0.75 lb (0.3 Kg) with no options	
		Approvals	
		CE	
		Warranty	
		Lifetime	
Temperature Range			
Thermistor/RTD	-40° to 221°F (-40° to 105°C)		



MOUNTING

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.

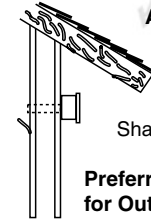
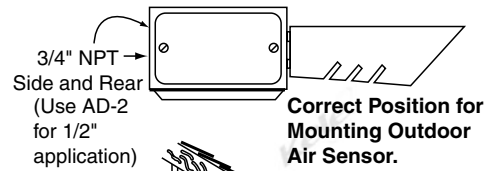
Wiring

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. Twist on wire connectors 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.



ORDERING INFORMATION

MODEL	DESCRIPTION
ST-O3	OSA temperature sensor, 10,000Ω thermistor Type III, (gray leads)
ST-O11K	OSA temperature sensor, 10,000Ω thermistor Type III with 11K shunt, (gray leads)
ST-O21	OSA temperature sensor, 2250Ω thermistor Type II, (green leads)
ST-O22	OSA temperature sensor, 3,000Ω thermistor Type II, (blue leads)
ST-O24	OSA temperature sensor, 10,000Ω thermistor Type II, (yellow leads)
ST-O27	OSA temperature sensor, 100,000Ω thermistor Type II, (gray leads)
ST-O42	OSA temperature sensor, 20,000Ω thermistor Type IV, (green leads)
ST-O63	1000Ω nickel OSA RTD @ 32°F (0°C), (yellow leads)
ST-O71	100Ω ultra high accurate OSA RTD @ 32°F (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	
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	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)

RELATED PRODUCTS

T81U-XR	100 ohm, Type 81 4-20 mA temperature transmitter, custom rangeable
T85U-XR	1000 ohm, Type 85 4-20 mA temperature transmitter, custom rangeable
T91U-XR	1000 ohm, Type 91 4-20 mA temperature transmitter, custom rangeable
AD-2	Knock-out adapter -3/4in TO 1/2in