



TEMPERATURE

ALL-PURPOSE THERMISTOR AND RTD SENSORS

ST-A* SERIES

DESCRIPTION

The **Precon ST-A* Series All-Purpose Thermistor and RTD Sensors** provide precision remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The active sensing element is made of a highly stable precision thermistor material or platinum RTDs.

The **ST-A* Series** sensors are rugged, point-sensitive waterproof sensors featuring a 9" (22.8 cm) 304 stainless steel probe and brass fitting. The brass fitting has a 1/2" NPT male thread. The sensors are supplied with two 1/2" locknuts for easy installation in handy boxes (or other enclosures with 1/2" knockouts).

Precon



FEATURES

- **Lifetime warranty**
- **Wide selection of thermistor and RTD curves**
- **Tip sensitive for precise temperature response**
- **Adaptable with many options**
- **All metal construction with 304 stainless steel probe**
- **Easy to mount to duct, wall, or back box**
- **Waterproof probe**

APPLICATION

The **ST-A* Series** Sensors are waterproof and can be used where it is possible for the sensed temperature to fall below the ambient dew point, causing condensation to occur on the sensor. However, it is important that the field connection be made as far as possible from the sensed media. The sensing element is sealed with a thermally conductive compound in a versatile 9" long stainless steel tube with a brass electrical fitting. The all-purpose probe is suitable for plenum mounting, duct mounting, immersion wells, or outside air.

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 Type

Thermistor	2.252 k Ω , 3 k Ω , 10 k Ω Type II, III, & III w/11K shunt, 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/RTD	-40° to 221°F (-40° to 105°C)
----------------	-------------------------------

Temperature Coefficient

Thermistor	Negative temperature coefficient
RTD	Positive temperature coefficient

Temperature Stability

Thermistor	0.24°F (0.13°C) over five years
Heat Dissipation	2.7 mW/°C (power needed to raise the temperature by 1°C)

Mounting

Mounting	Directly to duct, wall, or customersupplied back box, no adapters needed for standard boxes
Wiring Terminations	8' (2.4m) of 24 AWG pigtails with prestripped ends, type 71 & 81 have 18" leads

Weight

Weight	0.2 lb (0.09 Kg) w/o options
--------	------------------------------

Approvals

Approvals	CE
-----------	----

Warranty

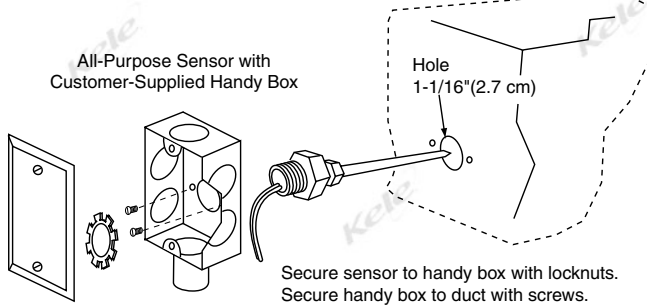
Warranty	Lifetime
----------	----------



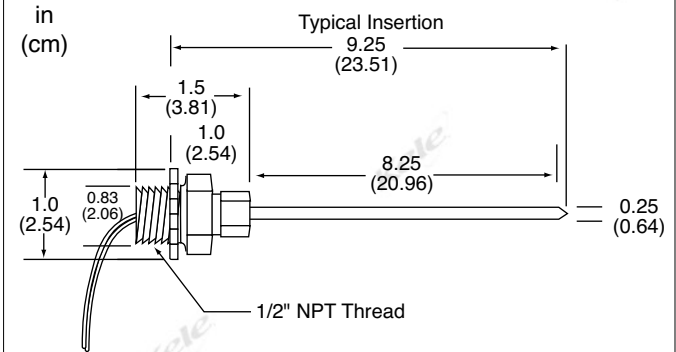
MOUNTING

Locknuts provide direct mounting and can be used where conduit is not required. Mount directly to electrical outlet boxes as shown below.

Basic model comes with 8' (2.4 m) of 24 AWG wire and two locknuts for mounting to a variety of box options.



DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
ST-A3	10,000Ω all-purpose thermistor @ 77°F (25°C), Type III (gray leads)
ST-A11K	10,000Ω all-purpose thermistor @ 77°F (25°C), Type III with 11K shunt (gray leads)
ST-A21	2252Ω all-purpose thermistor @ 77°F (25°C), Type II (green leads)
ST-A22	3000Ω all-purpose thermistor @ 77°F (25°C), Type II (blue leads)
ST-A24	10,000Ω all-purpose thermistor @ 77°F (25°C), Type II (yellow leads)
ST-A27	100,000Ω all-purpose thermistor @ 77°F (25°C), Type II (gray leads)
ST-A42	20,000Ω all-purpose thermistor @ 77°F (25°C), Type IV (green leads)
ST-A63	1000Ω nickel all purpose RTD @ 32°F (0°C), (yellow leads)
ST-A71	100Ω ultra high accurate all purpose RTD @ 32°F (0°C), 385 platinum curve (blue leads)
ST-A81	100Ω all-purpose RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
ST-A85	1000Ω all-purpose RTD @ 32°F (0°C), 385 platinum curve (blue leads)
ST-A91	1000Ω all-purpose RTD @ 32°F (0°C), 375 platinum curve (green leads)
OPTIONS	
QD¼	Nylon insulated Quick Disconnect ¼"
X25	25' (7.6) lead length 24 AWG
XC25	25' (7.6m) lead length jacketed cable
XCO	½" LB conduit fitting
XCP25	25' Non-shielded plenum cable
XD	Dual sensors in one probe
XH	Handy box housing (factory installed)
XHP	Non-metallic handy box housing (factory installed)
XL	Custom length insertion probes 1" to 108"
XL2	Custom length insertion probe, 4-7/8"(12.38 cm)
XL2 in	Custom length insertion probe, 2"(5.08 cm)
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)
XW	Weather resistant housing (factory installed)
XZ	Three wire RTD connections (optional only on Type 81, standard on Type 71, not available with XC25 and XCP25)

ST-A24 - XP Example: ST-A24-XP 10,000Ω Type II all-purpose temperature sensor with matched sensor

T81U-XR
T85U-XR
T91U-XR
UR

RELATED PRODUCTS

100 ohm, Type 81 4-20 mA temperature transmitter, custom rangeable
1000 ohm, Type 85 4-20 mA temperature transmitter, custom rangeable
1000 ohm, Type 91 4-20 mA temperature transmitter, custom rangeable
Moisture-resistant three-wire butt splice