



TEMPERATURE

ENCAPSULATED THERMISTOR SENSOR

MODELS ST-R◇, ST-R◇R

DESCRIPTION

The PreCon **Encapsulated 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 $\pm 0.36^{\circ}\text{F}$ ($\pm 0.2^{\circ}\text{C}$).

The thermistor material is encapsulated with a low mass, high-conductivity compound for good heat transfer characteristics. It is enclosed in a tough, miniature cylinder, 0.17" in (0.43 cm) diameter, which is small enough to be installed in most HVAC thermostat enclosures.

FEATURES

- **Five-year warranty**
- **$\pm 0.36^{\circ}\text{F}$ ($\pm 0.2^{\circ}\text{C}$) accuracy**
- **Wide selection of thermistor curves**
- **Adaptable miniature sensor**
- **High heat dissipation constant**
- **Easy to mount with clips**
- **Pre-aged, highly stable thermistor material**

OPTIONS

- **25' (7.6m) of 24 AWG zipcord**
- **Matched sensor pairs**
- **Dual sensor probe**
- **Ruggedized sensor coating**
- **Wide temperature range -30° to 230°F (-34° to 110°C)**
- **NIST traceable**



ST-R◇



ST-R◇R

APPLICATION

ST-R◇

The **Model ST-R◇ Encapsulated Thermistor Sensor** (white) is intended for indoor use only, in areas not subject to moisture or condensation. The sensor may be installed under the cover of an existing pneumatic thermostat. Caution should be exercised when applying the sensor to existing electric thermostats. Heat is often generated by anticipators or other electronics that will affect the sensor reading. The sensor operating range is 35° to 140°F (2° to 60°C). Do not use in conditions below 35°F (2°C) or where condensation could occur.

ST-R◇R

The **Ruggedized Encapsulated Thermistor Sensor** (red) is suitable for temperature extremes and is immune to the effects of moisture and condensation. PreCon uses a three-stage, ruggedized coating process to moistureproof any sensor which is to be used below ambient dewpoint. The sensor operating range is -30° to 230°F (-34° to 110°C).

SPECIFICATIONS

Sensing element	Thermistor (thermal resistor)	Sensitivity	See <i>Sensor Resistance Charts</i> in the Technical Reference section
Accuracy	$\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable optional)	Stability	0.24°F (0.13°C) over five years
Sensor types available (ref. in ohms @ $77^{\circ}\text{F}/25^{\circ}\text{C}$)	2.252K, 3K, 10K, 20K, 100K	Heat dissipation constant	$2.7 \text{ mW}/^{\circ}\text{C}$ (power needed to raise the temperature by 1°C)
Temp range	35° to 140°F (2° to 60°C)	Connection	8' (2.4m) of 24 AWG pigtailed prestripped ends
R option	-30° to 230°F (-34° to 110°C)	Mounting	Directly to wall or customer supplied enclosure using customer supplied clips
Temp response	Negative temperature coefficient		

TEMPERATURE

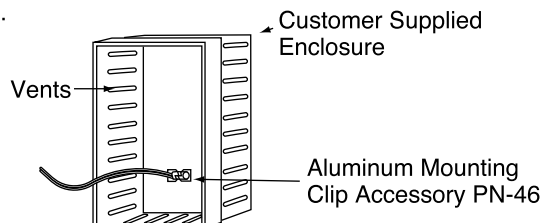


ENCAPSULATED THERMISTOR SENSOR

MODELS ST-R◇, ST-R◇R

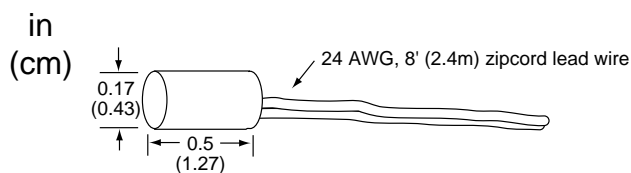
MOUNTING

Mounting: Secure to enclosure or wall using cable ties, clips, or brackets. To obtain optimum performance, the sensor enclosure/assembly must be highly conductive. Any thermistor element surrounded by insulating media will not perform properly at all temperatures or with the proper temperature response times. An accurate room sensor must have good ventilation and a high thermal-conducting metal which is in direct contact with the thermistor. The enclosure must be insulated from the building mounting surface to limit wall temperature influence on the sensor.

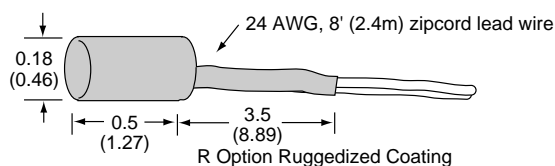


Wiring: Terminate using butt splices or solder connections (wire nuts are not recommended). Use the full length wire lead to avoid condensation or moisture migration from the field connection.

DIMENSIONS



ST-R◇



ST-R◇R

ORDERING INFORMATION

MODEL	DESCRIPTION
ST-R3	10,000Ω Encapsulated Thermistor @ 77°F (25°C) Type III Material (gray leads)
ST-R21	2252Ω Encapsulated Thermistor @ 77°F (25°C) Type II Material (green leads)
ST-R22	3000Ω Encapsulated Thermistor @ 77°F (25°C) Type II Material (blue leads)
ST-R24	10,000Ω Encapsulated Thermistor @ 77°F (25°C) Type II Material (yellow leads)
ST-R27	100,000Ω Encapsulated Thermistor @ 77°F (25°C) Type II Material (gray leads)
ST-R42	20,000Ω Encapsulated Thermistor @ 77°F (25°C) Type IV Material (green leads)

OPTIONS

R	Ruggedized (moistureproof coating)
X25	25' (7.6m) lead length
XP	Matched sensor pair, matched to ±0.1°F, 0.55°C (must order two sensors)
XD	Dual sensors in one probe
XN1	NIST certificate, 1 reference point 32°F (0°C)
XN2	NIST certificate, 2 reference points 32°F/160°F (0°/77°C)

ST-R3

— R —

X25

Example: ST-R3R-X25 10 kΩ Type III thermistor with ruggedized coating and 25' (7.6m) cable length

Related Products

UR	Moisture resistant three-wire butt splice
WMB-1	Vented wall enclosure
WMB-2	Vented executive wall enclosure
PN-46	Aluminum mounting clip