



TEMPERATURE

STAINLESS STEEL SHEATH THERMISTOR SENSOR MODELS ST-R◇S, ST-R◇SC



DESCRIPTION

The PreCon **Stainless Steel Sheath Thermistor Sensors** provide 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 sensing element is ruggedized and sealed with a thermally conductive compound in a versatile 3" (7.6 cm) long stainless steel tube. The probe is waterproof, and the sensor is ideal for use in refrigeration cases, or as a strap-on sensor for pipes. The operating range is -30° to 230°F (-34° to 110°C).

ST-R◇S

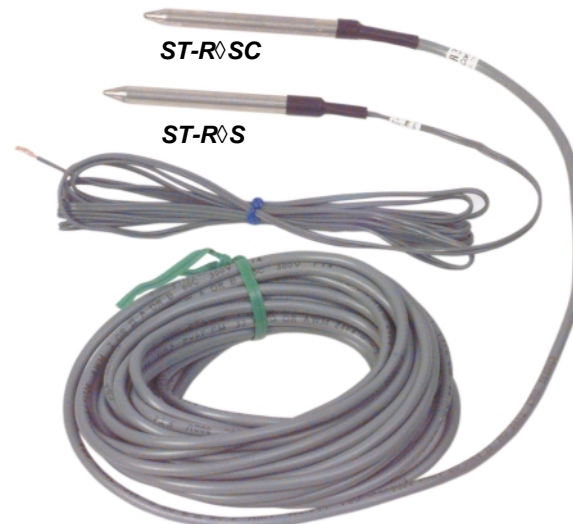
The **Model ST-R◇S Stainless Steel Sheath Thermistor Sensor** is suitable for direct application to pipe surfaces for chilled or hot water measurement. It is also used for freezer cases where moisture protection is important. This rugged strap-on sensor comes with an 8-ft (2.4m), 24-gauge zipcord lead.

ST-R◇SC

Freezer Case Applications: The **Model ST-R◇S Stainless Steel Sheath Thermistor Sensor** comes with a rugged, 25' (7.6m) cable when ordered with the "C" option. The 25' (7.6m) cable allows for termination away from areas of condensation.

OPTIONS

- **Matched sensor pairs**
- **25' (7.6m) PVC-covered cable**
- **NIST traceable certificate**
- **Custom length probe**



APPLICATION

Strap-on Applications: Where it is not practical to install immersion wells, the **Stainless Steel Sheath Thermistor Sensor** may be strapped to the pipe. The "C" option provides a 25' (7.6m) rugged cable that may be strapped on the outside of the pipe insulation. Pipe strap accessory (**APB-28**) provides a bracket to hold the sensor securely in place.

FEATURES

- **Five-year warranty**
- **$\pm 0.36^{\circ}\text{F}$ (0.2°C) accuracy**
- **Wide selection of thermistor curves**
- **Tip sensitive for precise temperature response**
- **Durable 304 stainless steel casing**
- **Easy to mount to wall, box, or pipe**
- **Waterproof probe**

SPECIFICATIONS	
Sensing element	Thermistor (thermal resistor)
Accuracy	$\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable is optional)
Sensor types available	2.252K, 3K, 10K, 20K, 100K (ref. in ohms @ $77^{\circ}\text{F}/25^{\circ}\text{C}$)
Temp range	-30° to 230°F (-34° to 110°C)
Temp response	Negative temperature coefficient
Sensitivity	See <i>Sensor Resistance Charts</i> in the Technical Reference section
Stability	0.24°F (0.13°C) over five years
Heat dissipation constant	$2.7\text{mW}/^{\circ}\text{C}$ (power needed to raise the temperature by 1°C)
Connection	8' (2.44m), 24 AWG zipcord using crimp or solder connection
Mounting	Directly to wall or pipe using standard clips and brackets

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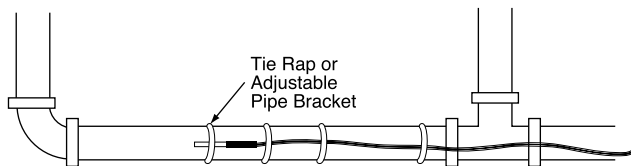


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MOUNTING/WIRING

Mounting: Secure to wall or pipe using cable ties, clips, or brackets.

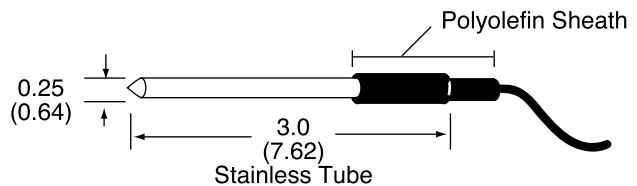
Wiring: Terminate with butt splices or solder connections. Wire nuts are not recommended. Use the full length cable to avoid moisture migration from the field connection.



When used as a strap-on sensor, best results are obtained when conductive compound (**TCC-12**) is applied between the sensor and the pipe. In addition, the sensor should be inserted under insulation with at least 2' (0.61m) on each side of the sensor. Adjustable pipe bracket **APB-28** is available for use with this sensor.

DIMENSIONS

in
(cm)



ORDERING INFORMATION

MODEL	DESCRIPTION
ST-R3S	10,000Ω Stainless Steel Thermistor @ 77°F (25°C) Type III Material (gray leads)
ST-R21S	2252Ω Stainless Steel Thermistor @ 77°F (25°C) Type II Material (green leads)
ST-R22S	3000Ω Stainless Steel Thermistor @ 77°F (25°C) Type II Material (blue leads)
ST-R24S	10,000Ω Stainless Steel Thermistor @ 77°F (25°C) Type II Material (yellow leads)
ST-R27S	100,000Ω Stainless Steel Thermistor @ 77°F (25°C) Type II Material (gray leads)
ST-R42S	20,000Ω Stainless Steel Thermistor @ 77°F (25°C) Type IV Material (green leads)

OPTIONS

C	25' (7.6m) 22 AWG cable
XD	Dual sensors in one probe
XP	Matched sensor pair, matched to ±0.1°F, 0.55°C (must order two sensors)
XL	Custom length probe, available 2" to 60" (5 to 152 cm)
XN1	NIST certificate, 1 reference point 32°F (0°C)
XN2	NIST certificate, 2 reference points 32°/160°F (0°/77°F)

ST-R3S - **C** - **XP** *Example: ST-R3SC-XP* 10 kΩ stainless steel sheath thermistor with 25' (7.6m) cable shipped in a matched pair

Related Products

UR	Moisture resistant three-wire butt splice
APB-28	Adjustable pipe bracket 2" to 8" (5.1 to 20.3 cm)
TCC-12	Single application thermal conductive compound
TCC-111	Thermal conductive compound 111 ml tub
PN-46	Aluminum mounting clip