



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◇S

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. It is an ideal choice for freezer case applications.

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*

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SPECIFICATIONS	
Sensing element	Thermistor (thermal resistor)
Accuracy	$\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable is optional)
Sensor types available (ref. in ohms @ $77^{\circ}\text{F}/25^{\circ}\text{C}$)	2.252K, 3K, 10K, 20K, 100K
Temp range	-30° to 230°F (-34° to 110°C)
Temp response	Negative temperature coefficient
Sensitivity	See "Sensor Resistance Charts" 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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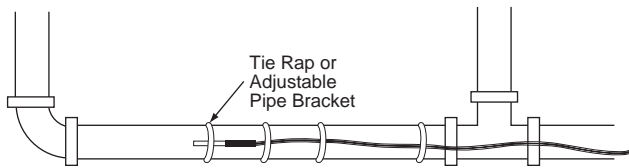
MOUNTING/WIRING

Mounting

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

Wiring

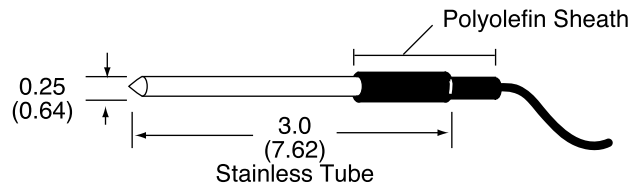
Terminate with butt splices or solder connections. Wire nuts are not recommended. Use the full length cable to avoid moisture migration from the field connection.



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)



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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