



# TEMPERATURE

## STAINLESS STEEL FLUSH-MOUNT THERMISTOR AND RTD SENSORS

### ST-S\* SERIES



#### DESCRIPTION

The Precon **ST-S\* Series Stainless Steel flush-Mount Sensors** provide precision room temperature sensing for building automation systems. The active sensing element is made of a highly stable, precision thermistor material or platinum RTD. This design provides moisture/vapor resistance and is bonded to a 304 stainless steel plate. The back is insulated to reduce interior wall temperature influence. This sensor is intended for interior use only.

#### FEATURES

- **Lifetime warranty**
- **$\pm 0.36^{\circ}\text{F}$  ( $\pm 0.2^{\circ}\text{C}$ ) thermistor accuracy**
- **$\pm 0.27^{\circ}\text{F}$  ( $\pm 0.15^{\circ}\text{C}$ ) or  $\pm 0.54^{\circ}\text{F}$  ( $\pm 0.30^{\circ}\text{C}$ ) RTD accuracy**
- **Wide selection of thermistor and RTD curves**
- **Ultra high accuracy optional**
- **Insulated backing for room temperature response**
- **Vandal-resistant flush mounting**
- **304 stainless steel finish**
- **Easy to mount to wall or back box**
- **Standard size plate to cover mounting holes**

#### APPLICATION

The **ST-S\* Series** sensors are designed to be mounted on indoor walls. They are ideal for use in schools or cold storage lockers, where vandalism or fork lifts can damage ordinary wall sensors. The sensors have an insulated back that reduces the conductive influences of wall temperatures, yet allows significant convective influences to be sensed. Security screws (**XS** option) are available where tamper proofing is required.



ST-S\*

#### OPTIONS

- **Setpoint adjustment**
- **Momentary switch override**
- **Security screws**

#### SPECIFICATIONS

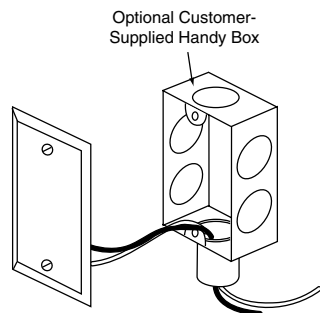
<b>Accuracy</b>		<b>Temperature response</b>	
<b>Thermistor</b>	$\pm 0.36^{\circ}\text{F}$ ( $0.2^{\circ}\text{C}$ )	<b>Thermistor</b>	Negative temperature coefficient
<b>RTD</b>		<b>RTD</b>	Positive temperature coefficient
<b>Type 63</b>	$\pm 0.72^{\circ}\text{F}$ ( $0.40^{\circ}\text{C}$ )	<b>Stability</b>	
<b>Type 71</b>	$\pm 0.054^{\circ}\text{F}$ ( $0.03^{\circ}\text{C}$ )	<b>Thermistor</b>	$0.24^{\circ}\text{F}$ ( $0.13^{\circ}\text{C}$ ) over five years
<b>Type 81, 85</b>	$\pm 0.27^{\circ}\text{F}$ ( $0.15^{\circ}\text{C}$ )	<b>RTD</b>	$< 0.09^{\circ}\text{F}$ ( $0.05^{\circ}\text{C}$ ) over five years
<b>Type 91</b>	$\pm 0.54^{\circ}\text{F}$ ( $0.30^{\circ}\text{C}$ )	<b>Heat dissipation</b>	$2.7 \text{ mW}/^{\circ}\text{C}$ (power needed to raise the temperature by $1^{\circ}\text{C}$ )
<b>Sensor types available</b>		<b>Connections</b>	8' (2.4 m) of 24 AWG pre-stripped pigtailed
<b>Thermistor</b>	2.252 k $\Omega$ , 3 k $\Omega$ , 10 k $\Omega$ , 20 k $\Omega$ , 100 k $\Omega$	<b>Mounting</b>	Directly to wall or customer-supplied back box no adapters needed for standard boxes
<b>RTD</b>		<b>Enclosure</b>	Brushed stainless steel
<b>Type 63</b>	1000 $\Omega$ Nickel	<b>Weight</b>	0.2 lb (0.09 kg)
<b>Type 71, 81</b>	100 $\Omega$ Pt 385 Curve	<b>Warranty</b>	Lifetime
<b>Type 85</b>	1000 $\Omega$ Pt 385 Curve		
<b>Type 91</b>	1000 $\Omega$ Pt 375 Curve		
<b>Temperature range</b>			
<b>Thermistor</b>	$10^{\circ}$ to $230^{\circ}\text{F}$ ( $-12^{\circ}$ to $110^{\circ}\text{C}$ )		
<b>RTD</b>			
<b>Type 63</b>	$-76^{\circ}$ to $392^{\circ}\text{F}$ ( $-60^{\circ}\text{C}$ to $200^{\circ}\text{C}$ )		
<b>Type 71</b>	$-58^{\circ}$ to $572^{\circ}\text{F}$ ( $-50^{\circ}\text{C}$ to $300^{\circ}\text{C}$ )		
<b>Type 81, 85, 91</b>	$-67^{\circ}$ to $240^{\circ}\text{F}$ ( $-55^{\circ}\text{C}$ to $115^{\circ}\text{C}$ )		



### MOUNTING

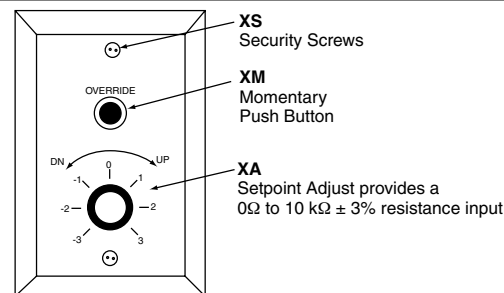
Toggle bolts or other direct wall-mount screws can be used where conduit is not required. Adapters are not required when mounting directly to electrical outlet boxes. Tighten mounting screws, crushing foam gasketing until plate edges lightly touch the wall. Insulate or seal all interior holes to prevent drafts from affecting the temperature readings. Terminate with butt splices or soldering. Wire nuts are not recommended.

Basic model comes with screws for stainless steel faceplate, two #6-32 screws for handy-box mounting, and 8' (2.4m) of 24 AWG wire. Security screws (XS Option) are #6-32 with a spanner head.

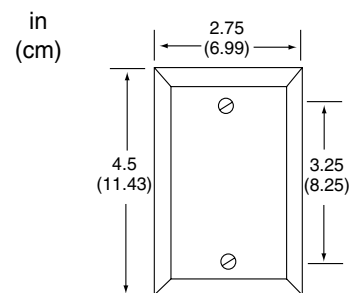


The sensor should be mounted approximately five feet above the floor, on an interior wall, away from any heating or cooling generating devices.

### TYPICAL COVER WITH MULTIPLE OPTIONS



### DIMENSIONS



### ORDERING INFORMATION

MODEL	DESCRIPTION
ST-S3	10,000Ω flush-mount thermistor @ 77°F (25°C), Type III (gray leads)
ST-S21	2252Ω flush-mount thermistor @ 77°F (25°C), Type II (green leads)
ST-S22	3000Ω flush-mount thermistor @ 77°F (25°C), Type II (blue leads)
ST-S24	10,000Ω flush-mount thermistor @ 77°F (25°C), Type II (yellow leads)
ST-S27	100,000Ω flush-mount thermistor @ 77°F (25°C), Type II (gray leads)
ST-S42	20,000Ω flush-mount thermistor @ 77°F (25°C), Type IV (green leads)
ST-S63	1000Ω flush-mount RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
ST-S71	100Ω flush-mount RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
ST-S81	100Ω flush-mount RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
ST-S85	1000Ω flush-mount RTD @ 32°F (0°C), 385 platinum curve (blue leads)
ST-S91	1000Ω flush-mount RTD @ 32°F (0°C), 375 platinum curve (green leads)
<b>OPTIONS</b> (List options in alphabetical order with dashes)	
QD¼	Nylon insulated quick disconnect ¼"
X25	25' (7.6m) lead length 24 AWG
XA	Setpoint adjustment (10,000Ω to 30,000Ω, resistance input)
XA1500	Setpoint adjustment (0Ω to 1,500Ω, resistance input)
XA2K	Setpoint adjustment (1,000Ω to 1,400Ω, resistance input)
XD	Dual sensors in one probe
XK	Custom logo
XM	Momentary switch wired N.O. to terminal block
XN	NIST 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)
XS	Security screws (SD-6 spanner screwdriver required)
XZ	Three wire RTD connections(Optional only on Type 81, standard on Type 71)

**Example:** ST-S27 - XM 100,000Ω Type II stainless steel flush-mount sensor with momentary switch

### RELATED PRODUCTS

UR Moisture resistant three-wire butt splice | KT1 Mounting screwdriver 1/16" Allen key  
SD-6 Security spanner screwdriver (required for XS option)