



# TEMPERATURE

## AVERAGING THERMISTOR SENSORS ST-FZ\* SERIES

### DESCRIPTION

The **Precon ST-FZ Series Averaging Thermistor Sensor** provides precision remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The active sensing elements are highly stable precision thermistor material accurate to within  $\pm 0.36^{\circ}\text{F}$  ( $0.2^{\circ}\text{C}$ ).

The sensing elements are sealed in a 3/16" (0.48 cm) soft-drawn copper coiled tube, attached to a standard handibox with mounting bracket attached.

### FEATURES

- **Lifetime warranty**
- **$\pm 0.36^{\circ}\text{F}$  ( $0.2^{\circ}\text{C}$ ) accuracy**
- **Wide selection of thermistor curves**
- **Adaptable to most duct sizes**
- **Easy to mount to duct wall**
- **3/16" (0.48 cm) soft copper sensor**
- **Copper facilitates quick average temperature response**

### OPTIONS

- **8' (2.4m) long element for very small ducts**
- **12.5' (3.8m) long element for small ducts**
- **25' (7.6m) long element for larger ducts**
- **Weather resistant handy box**



CC-1G-K

Precon



CE



ST-FZ\*

### APPLICATION

The **Model ST-FZ\*** is designed for direct mounting to sheet metal for average duct temperature sensing. The sensor is multi-point sensitive through the length of the temperature conductive tubing. The 8' (2.4 m) and 12.5' (3.8 m) models contain four sensing elements and the 25' (7.6 m) model has nine sensing elements. The thermistors are configured in a series/parallel method which creates an end result of total average resistance, equal to the same span as a standard thermistor, with a temperature range of  $32^{\circ}$  to  $160^{\circ}\text{F}$  ( $0^{\circ}$  to  $71^{\circ}\text{C}$ ).

### SPECIFICATIONS

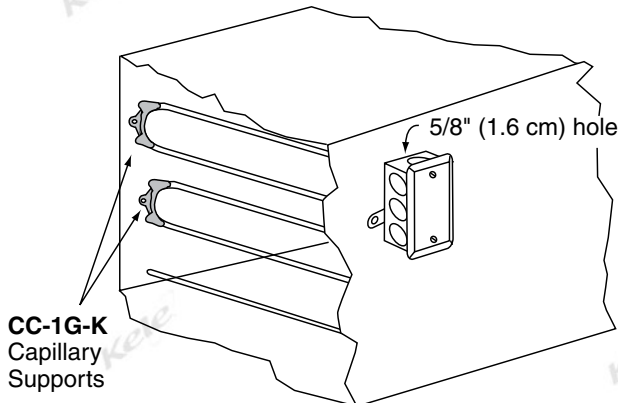
<b>Accuracy</b>	$\pm 0.36^{\circ}\text{F}$ ( $0.2^{\circ}\text{C}$ )
<b>Sensor Type</b>	2.252 k $\Omega$ , 3 k $\Omega$ , 10 k $\Omega$ Type II, III, & III w/11K shunt, 20 k $\Omega$ , 100 k $\Omega$
<b>Temperature Range</b>	-40 $^{\circ}$ to 221 $^{\circ}\text{F}$ (-40 $^{\circ}$ to 105 $^{\circ}\text{C}$ )
<b>Thermistor/RTD</b>	0.24 $^{\circ}\text{F}$ (0.13 $^{\circ}\text{C}$ ) over five years
<b>Temperature Stability</b>	2.7 mW/ $^{\circ}\text{C}$ (power needed to raise the temperature by 1 $^{\circ}\text{C}$ )
<b>Heat Dissipation</b>	
<b>Temperature Coefficient</b>	Negative temperature coefficient

<b>Mounting</b>	Directly to duct with back box, clips available for serpentine mounting
<b>Wiring Terminations</b>	8' (2.4m) of 24 AWG prestripped pigtailed
<b>Approvals</b>	CE
<b>Weight</b>	
<b>8'</b>	1.25 lb (0.6 kg)
<b>12'</b>	1.5 lb (0.7 kg)
<b>25'</b>	2.3 lb (1.04 kg)
<b>Warranty</b>	Lifetime

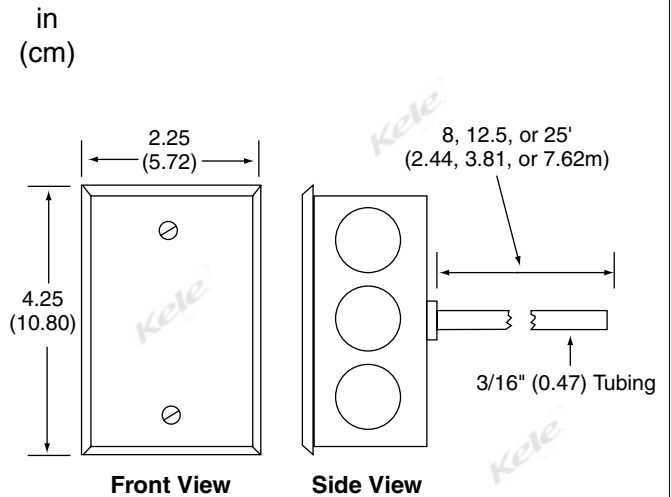


### MOUNTING

Drill a 5/8" (1.6 cm) hole for probe insertion and serpentine the sensor across the duct, turning at each end using the Model M-648 end clip and Model M-633 mid-duct support. Avoid kinking the tube as this could cause a short circuit. Using the provided #6 screws, secure the box to the duct either with the mounting ears or through the box holes.



### DIMENSIONS



### ORDERING INFORMATION

MODEL	DESCRIPTION
ST-FZ3	10,000Ω averaging thermistor @ 77°F (25°C), Type III (gray leads)
ST-FZ11K	10,000Ω averaging thermistor @ 77°F (25°C), Type III with 11K shunt (gray leads)
ST-FZ21	2252Ω averaging thermistor @ 77°F (25°C), Type II (green leads)
ST-FZ22	3000Ω averaging thermistor @ 77°F (25°C), Type II (blue leads)
ST-FZ24	10,000Ω averaging thermistor @ 77°F (25°C) Type II (yellow leads)
ST-FZ27	100,000Ω averaging thermistor @ 77°F (25°C), Type II (gray leads)
ST-FZ42	20,000Ω averaging thermistor @ 77°F (25°C), Type IV (green leads)
<b>SENSING ELEMENT</b>	
8	8' (2.44m) probe length, four elements total
12	12.5' (3.81m) probe length, four elements total
25	25' (7.62m) probe length, nine elements total
QD¼	Nylon insulated quick disconnect ¼"
X25	25' (7.6m) lead length 24 AWG
XC25	25' (7.6m) lead length 24 AWG jacketed cable
XCO	½" LB conduit fitting
XCP25	25' (7.6m) non-shielded 22AWG plenum cable
XLT	Liquid-tight fitting (factory installed)
XN	Certificate of conformance
XNB	½" MNPT brass close nipple
XNP	½" MNPT plastic close nipple
XW	Weather resistant housing

ST-FZ3 - 25

**Example:** ST-FZ3-25 10,000Ω Type III averaging thermistor sensor with 25' (7.62m) probe and nine sensing elements

### RELATED PRODUCTS

CC-1G-K	Plastic capillary and sensor holder mounting clip
M-633	Copper-plated capillary mounting mid-duct support
M-648-K	Copper-clad capillary mounting clip
UR	Moisture-resistant three-wire butt splice