RIGID AVERAGING THERMISTOR AND RTD SENSOR
ST-FZR SERIES

DESCRIPTION

The **Precon ST-FZR* Series Rigid Averaging Thermistor and RTD Sensor** provides precision remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The active sensing elements are constructed of highly stable precision thermistor materials or platinum RTDs.

The sensing elements are sealed in a 304 stainless steel probe attached to a standard handy box with mounting bracket attached.

Precon

ST-FZR Rigid Averaging Sensor

FEATURES

- *Lifetime warranty*
- *±0.36°F (±0.2°C) accuracy*
- *Wide selection of thermistor curves*
- *Four lengths to fit to most duct sizes*
- *Easy to mount to duct wall*
- *Four sensing elements in a series-parallel arrangement*
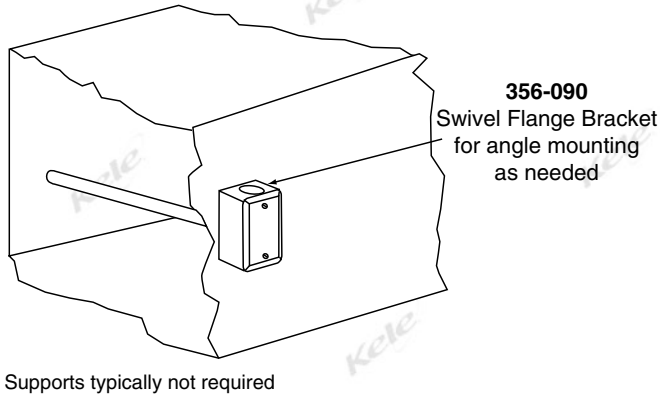- *Rigid sensor*

APPLICATION

The **ST-FZR* Series** is designed for direct mounting to sheet metal for average duct temperature sensing. The sensors contain four 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° to 160°F (0° to 71°C).
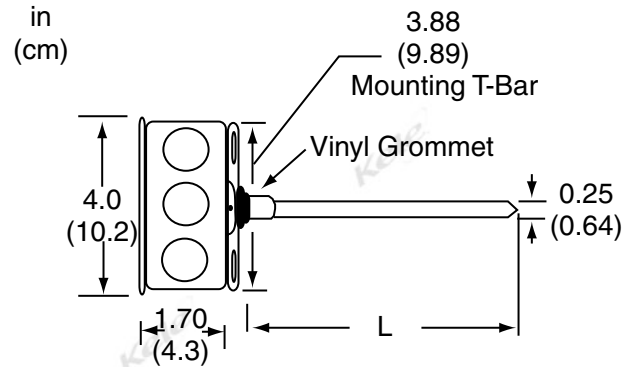
OPTIONS

- *Weather resistant handy box*
- *25' lead length*

SPECIFICATIONS

Accuracy			**Temperature Coefficient**	
Thermistor	±0.36°F (0.2°C)		Thermistor	Negative temperature coefficient
RTD			RTD	Positive temperature coefficient
Type 81, 85	±0.27°F (0.15°C)		**Temperature Range**	
Type 91	±0.54°F (0.30°C)		Thermistor/RTD	-40° to 221°F (-40° to 105°C)
Temperature Stability			**Enclosure Rating**	NEMA 1, Metal handy box
Thermistor	0.24°F (0.13°C) over five years		**Mounting**	Directly to duct with back box
RTD	Max 0.04% after 1k hours @ 500 °C		**Wiring Terminations**	8' (2.4m) of 24 AWG prestripped
Heat Dissipation	2.7 mW/°C (power needed to raise the temperature by 1°C)			pigtails, Type 81 sensor has 18" leads
Sensor Type			**Weight**	
Thermistor	2.252 kΩ, 3 kΩ, 10 kΩ Type II, III & III w/11K shunt, 20 kΩ, 100 kΩ		12"	0.5 lb (0.23 Kg)
			18"	0.6 lb (0.3 Kg)
RTD			24"	0.7 lb (0.32 Kg)
Type 81	100Ω Pt 385 Curve		36"	0.8 lb (0.37 Kg)
Type 85	1000Ω Pt 385 Curve		**Approvals**	CE
Type 91	1000Ω Pt 375 Curve		**Warranty**	Lifetime

TEMPERATURE

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MOUNTING

356-090
Swivel Flange Bracket
for angle mounting
as needed

Supports typically not required

DIMENSIONS

in
(cm)

3.88
(9.89)
Mounting T-Bar

Vinyl Grommet

4.0
(10.2)

0.25
(0.64)

1.70
(4.3)

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ORDERING INFORMATION

MODEL	DESCRIPTION
ST-FZR3	10,000Ω rigid averaging thermistor @ 77°F (25°C), Type III (gray leads)
ST-FZ11K	10,000Ω rigid averaging thermistor @ 77°F (25°C), Type III with 11K shunt (gray leads)
ST-FZR21	2252Ω rigid averaging thermistor @ 77°F (25°C), Type II (green leads)
ST-FZR22	3000Ω rigid averaging thermistor @ 77°F (25°C), Type II (blue leads)
ST-FZR24	10,000Ω rigid averaging thermistor @ 77°F (25°C) Type II (yellow leads)
ST-FZR27	100,000Ω rigid averaging thermistor @ 77°F (25°C), Type II (gray leads)
ST-FZR42	20,000Ω rigid averaging thermistor @ 77°F (25°C), Type IV (green leads)
ST-FZR81	100Ω rigid averaging RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
ST-FZR85	1000Ω rigid averaging RTD @ 32°F (0°C), 385 platinum curve (blue leads)
ST-FZR91	1000Ω rigid averaging RTD @ 32°F (0°C), 375 platinum curve (green leads)

INSERTION LENGTH	
12	12" length (30.48 cm)
18	18" length (45.72 cm)
24	24" length (60.96 cm)
36	36" length (91.44 cm)

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 condulet fitting
XCP25	25' (7.6m) non-shielded 22AWG plenum cable
XLT	Liquid-tight fitting (factory installed)
XN	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)
XNB	½" MNPT brass close nipple
XNP	½" MNPT plastic close nipple
XW	Weather resistant housing

ST-FZR3	—	12

Example: **ST-FZR3-12** 10,000Ω Type III averaging thermistor sensor with 12" (7.62m) probe and four sensing elements

RELATED PRODUCTS

356-090	Swivel flange bracket
T81PNR Series	Temperature transmitter for type 81, 385 platinum curve sensors, cover mounted
T81U Series	Temperature transmitter for type 81, 385 platinum curve sensor, track mounted
T85PNR Series	Temperature transmitter for type 85, 385 platinum curve sensors, cover mounted
T85U Series	Temperature transmitter for type 85, 385 platinum curve sensor, track mounted
T90PNR Series	Temperature transmitter for type 91, 375 platinum curve sensors, cover mounted
T91U Series	Temperature transmitter for type 91, 375 platinum curve sensor, track mounted
UR	Moisture-resistant three-wire butt splice