



TEMPERATURE

DUCT THERMISTOR AND RTD SENSORS

ST-D* SERIES

DESCRIPTION

The Precon **ST-D* Series Duct 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 or platinum RTD.

The sensing element is sealed with a thermally conductive compound in a 9" (22.8 cm) long 304 stainless steel tube attached to a 4" (10 cm) electrical strap. The slots in the mounting bracket form mounting ears for direct duct mounting and standard electrical boxes. The grommet on the tube fitting seals a 9/16" (1.43 cm) insertion hole.

FEATURES

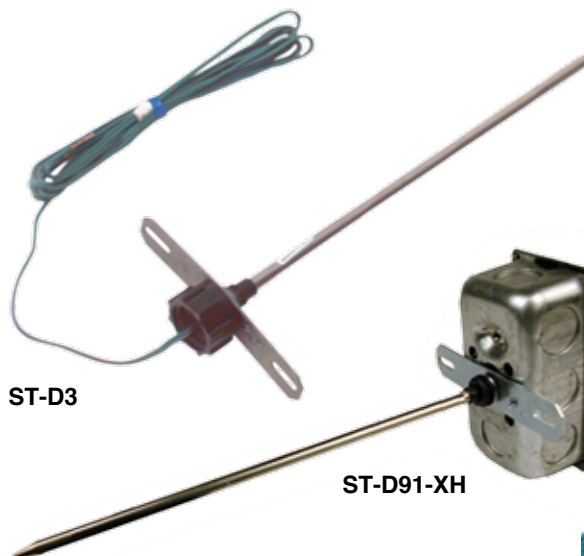
- **Lifetime warranty**
- **Wide selection of thermistor and RTD curves**
- **Tip sensitive for precise temperature response**
- **Adaptable with many options**
- **Waterproof 304 stainless steel probe**
- **Greenfield fitting standard**
- **Ultra high accuracy optional**

APPLICATION

The **ST-D* Series sensors** are designed for direct mounting on sheet metal duct systems. Where conduit is required, the duct sensors have a universal nylon mounting connector that adapts to a 1/2" knockout in a standard handy box. The nylon fitting has a 1/2" NPT female conduit fitting.

The duct temperature sensors are waterproof and can be used in high humidity and condensing air. The sensors are point-sensitive and come standard with 9" (22.8 cm) insertion depth. The XL option provides custom lengths.

Precon™

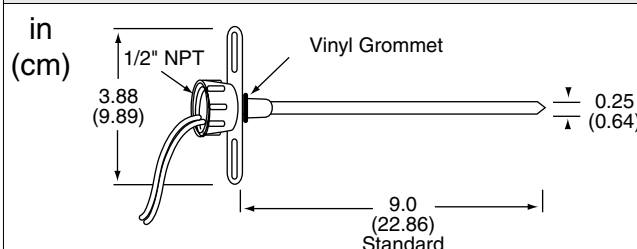


ST-D3

ST-D91-XH



DIMENSIONS



SPECIFICATIONS

Accuracy

Thermistor $\pm 0.36^{\circ}\text{F}$ (0.2°C)

RTD

Type 63 $\pm 0.72^{\circ}\text{F}$ (0.40°C)

Type 71 $\pm 0.054^{\circ}\text{F}$ (0.03°C)

Type 81, 85 $\pm 0.27^{\circ}\text{F}$ (0.15°C)

Type 91 $\pm 0.54^{\circ}\text{F}$ (0.30°C)

Sensor types available

Thermistor 2.252 k Ω , 3 k Ω , 10 k Ω , 20 k Ω , 100 k Ω

RTD

Type 63 1000 Ω Nickel

Type 71, 81 100 Ω Pt 385 Curve

Type 85 1000 Ω Pt 385 Curve

Type 91 1000 Ω Pt 375 Curve

Temperature range

Thermistor 10° to 230°F (-12° to 110°C)

RTD

Type 63 -76° to 392°F (-60°C to 200°C)

Type 71 -58° to 572°F (-50°C to 300°C)

Type 81, 85, 91 -67° to 240°F (-55°C to 115°C)

Temperature response

Thermistor

Negative temperature coefficient

RTD

Positive temperature coefficient

Stability

Thermistor

0.24°F (0.13°C) over five years

RTD

<0.09°F (0.05°C) over five years

Heat dissipation

2.7 mW/°C (power needed to raise the temperature by 1°C)

Connections

8' (2.4m) of 24 AWG pigtails prestripped ends, type 71 & 81 sensors have 18" leads

Mounting

Directly to duct, wall, or customer-supplied back box, no adapters needed for standard boxes

Warranty

Lifetime

TEMPERATURE

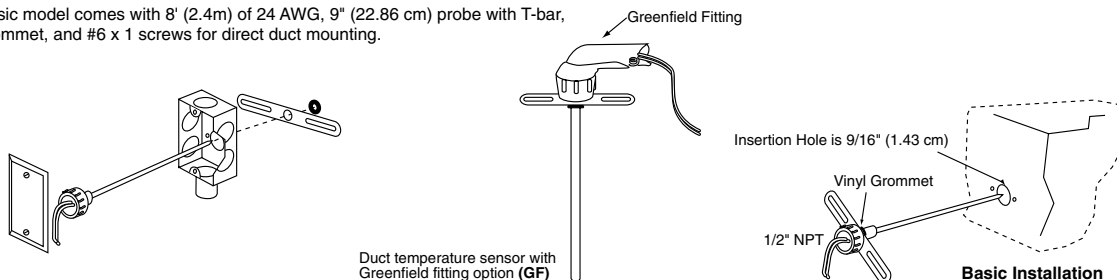
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MOUNTING

Basic model comes with 8' (2.4m) of 24 AWG, 9" (22.86 cm) probe with T-bar, grommet, and #6 x 1 screws for direct duct mounting.



ORDERING INFORMATION

| MODEL | DESCRIPTION |
|---|---|
| ST-D3 | 10,000Ω duct thermistor @ 77°F (25°C), Type III (gray leads) |
| ST-D21 | 2252Ω duct thermistor @ 77°F (25°C), Type II (green leads) |
| ST-D22 | 3000Ω duct thermistor @ 77°F (25°C), Type II (blue leads) |
| ST-D24 | 10,000Ω duct thermistor @ 77°F (25°C), Type II (yellow leads) |
| ST-D27 | 100,000Ω duct thermistor @ 77°F (25°C), Type II (gray leads) |
| ST-D42 | 20,000Ω duct thermistor @ 77°F (25°C), Type IV (green leads) |
| ST-D63 | 1000Ω nickel duct RTD @ 70°F (21°C), (yellow leads) |
| ST-D71 | 100Ω ultra high accurate duct RTD @ 32°F (0°C), 385 platinum curve (blue leads) |
| ST-D81 | 100Ω duct RTD @ 32°F (0°C), 385 platinum curve (yellow leads) |
| ST-D85 | 1000Ω duct RTD @ 32°F (0°C), 385 platinum curve (blue leads) |
| ST-D91 | 1000Ω duct RTD @ 32°F (0°C), 375 platinum curve (green leads) |
| OPTIONS (List options in alphabetical order with dashes) | |
| QD1/4 | Nylon insulated Quick Disconnect 1/4" |
| X25 | 25' (7.6m) lead length 24 AWG |
| XC25 | 25' (7.6m) lead length jacketed cable |
| XCO | 1/2" LB conduit fitting |
| XCP25 | 25' Non-shielded plenum cable |
| XD | Dual sensors in one probe |
| XG | Greenfield fitting (factory installed) |
| XH | Handy box housing (factory installed) |
| XHP | Non-metallic handy box housing (factory installed) |
| XL | Custom length insertion probes 1" to 108" |
| XL2 | Custom length insertion probe, 4-7/8"(12.38 cm) |
| XL2 in | Custom length insertion probe, 2"(5.08 cm) |
| XLT | Liquid-tight fitting (factory installed) |
| XN | NIST certificate of conformance |
| XNP | 1/2" MNPT plastic close nipple |
| 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 | 1/2" MNPT brass close nipple |
| 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) |
| XW | Weather resistant housing (factory installed) |
| XZ | Three wire RTD connections (optional only on Type 81, standard on Type 71, not available with XC25 and XCP25) |

ST-D3 - XG

Example: ST-D3-XG 10,000Ω Type III duct temperature sensor with Greenfield fitting

RELATED PRODUCTS

UR Moisture-resistant three-wire butt splice
KT1 Mounting screwdriver 1/16" Allen key