

Electronic Duct Temperature Sensors General Instructions

APPLICATION

Electronic sensing of temperature in ducts.

SPECIFICATIONS

Sensing Element: Balco resistance. 1000 ohms $\pm 0.1\%$ at 70°F (21°C); changes 2.2 ohms per 1°F (.5°C) at 70°F (21°C).

Ambient Limits:

Shipping and Storage Temperature, -40 to 160°F (-40°F to 71°C).

Operating Temperature, 40 to 140°F (4 to 60°C).

Humidity, 5 to 95% RH, non-condensing.,

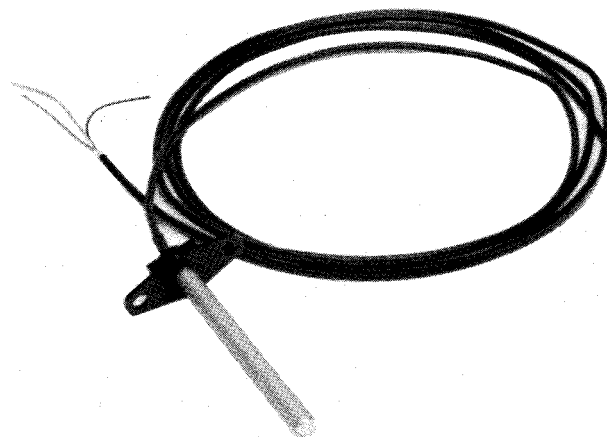
Wiring Connections:

TS-8281-0-0-1, 6 ft. (1.8 m) 22 AWG (1) red, (1) black shielded and jacketed cable.

TS-8281-101-0-1, 6 ft. (1.8 m) 22 AWG, (1) red, (1) black shielded and jacketed plenum rated cable.

Mounting: In any position on duct. Optional mounting to electrical junction boxes outlined in NEMA Standards Publication OS 1-1984.

Probe Dimensions: 3-5/8" long x 5/16" dia. (92 mm x 7.9 mm)



PRE-INSTALLATION

Inspection

Visually inspect the carton for damage. If damaged, notify the appropriate carrier immediately. If undamaged, open the carton and visually inspect the device for obvious defects. Return damaged or defective products.

Required Installation Items

- Wiring diagrams
- Tools (not provided):
 - DVM (digital volt-ohm meter)
 - Appropriate screwdriver for mounting screws
 - Appropriate drill and drill bit for mounting screws
- 1/4" mounting screws (not provided)

INSTALLATION

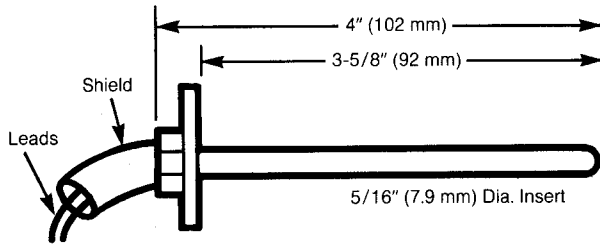
Caution:

1. Installer must be a qualified, experienced technician.
 2. Make all connections in accordance with the wiring diagram, and in accordance with national and local electrical codes. *Use Copper conductors only.*
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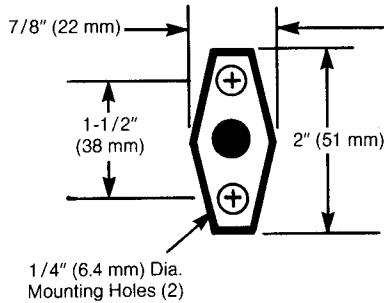
DUCT MOUNTING

Caution: Avoid locations where excessive vibration, moisture, corrosive fumes or vapors are present.

1. Determine the sensor mounting location on the duct. The sensing element is located within 1" (25 mm) of the end of the sensing probe, and it should be located in the air stream typical of the temperature requiring sensing.
2. Use the mounting plate supplied as a template (or refer to Figure 1 for duct mounting dimensions) for mounting hole location.
3. Mount the sensor to the duct using (2) #10 x 3/4" sheet metal screws.



Side View



Front View

Figure-1 TS-8281 Mounting Dimensions.

Wiring

Two conductor twisted wires (six turns per foot), shielded and jacketed, low voltage (Class 2), are suitable for the sensor leads except as stated below.

Restrict element lead to shortest length practical (see Table 1).

Table-1 SENSOR WIRING LENGTHS.

Wire Gauge	Length of Run in ft. (m)	
	Sensor to Controller (except TP-8101)	Sensor to TP-810X
22	150 (46)	124 (38)
18	1000 (305)	300 (91)
16	2250 (686)	—
14	4000 (1219)	—

1. Connect sensor leads to IS+ and IS- terminals of CVV-8X10X Microflo controller or other controller as appropriate.
2. Ground shield to earth ground of CVV-8X10X Microflo controller only. Do not ground at sensor end.

MAINTENANCE

Regular maintenance of the total system is needed to assure sustained optimum performance. Sensors should be periodically inspected for dirt or blockage of air over the elements.

FIELD REPAIR

These sensors are not field repairable. Replace the sensor with a functional unit.

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Schneider Electric
 1354 Clifford Avenue
 P.O. Box 2940
 Loves Park, IL 61132-2940

www.schneider-electric.com/buildings

