



Electronic Room Temperature Sensors General Instructions

APPLICATION

Electronic sensing of room temperature at wall locations.

SPECIFICATIONS

Temperature Sensing Element: Platinum RTD.

Resistance, 1000 ohm \pm 0.12% at 32°F (0°C).

Maximum Error over 100°F (55.6°C) Span, \pm 1.08°F (\pm 0.6°C).

Resistance Change, 2.14 ohm per °F (3.85 ohm per °C).

See Table 1.

Control Dial Range: Non-adjustable.

Environment:

Ambient Temperature Limits,

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

Operating 40 to 140°F (4 to 60°C).

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

Locations, NEMA Type 1 indoor only.

Connections: Coded screw terminals.

Cover: Beige plastic.

Cover Configuration: Blank.

Mounting: Wall.

Dimensions: 4-3/8" high x 2-3/4" wide x 1-5/8" deep
(111 mm x 70 mm x 43 mm).

OPTIONS

Add "dash-number" (-XXX) suffix to base part number for desired option.



5/64" Allen screw
used to secure cover.

-403 °F Thermometer (50-90°F)
-413 °C Thermometer (10-30°C)

ACCESSORIES

AT-101	Lock cover kit
AT-136	Title plates (day, night, heat, cool)
AT-504	Plaster hole cover kit (small)
AT-505	Surface mounting base
AT-546	Auxiliary mounting plate
AT-1103	Wire guard
AT-1104	Cast aluminium guard
AT-1105	Plastic guard
AT-1155	Plastic guard
AT-1165	Plastic guard

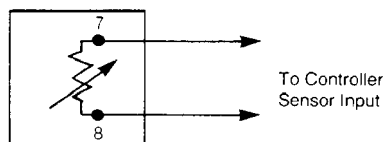
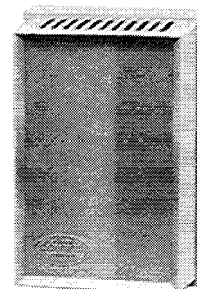


Figure-1 TS-5811 Wiring



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 and terminal connections
- Appropriate accessories
- Mounting screws, two (2) provided for securing to a 2 x 4 conduit box

Table-1 TEMPERATURE VS. RESISTANCE.

Temperature °F (°C)	Nominal Resistance Values (in Ohms)
40 (4)	1017
50 (10)	1039
68 (20)	1077.9
77 (25)	1097.3
86 (30)	1116.7
104 (40)	1155.4
122 (50)	1194
140 (60)	1232.4

INSTALLATION

Caution:

- Installer must be a qualified, experienced technician.
- Make all connections in accordance with the wiring diagram, and in accordance with national and local electrical codes.
Use copper conductors only.
- Do not exceed ratings of the device.

Mounting

LOCATION

Locate the sensor on a wall where it will be exposed to unrestricted air circulation, at a minimum of 15 ft./min., which represents the average temperature of the sensed space. Normally, the sensor is located 5-1/2 to 6-1/2 ft. (1.7 to 2.0 m) from floor level.

Caution: Do not locate the sensor near sources of heat or cold, such as lamps, motors, sunlight or concealed ducts or pipes. Avoid location where excessive vibration, moisture, corrosive fumes or vapors are present.

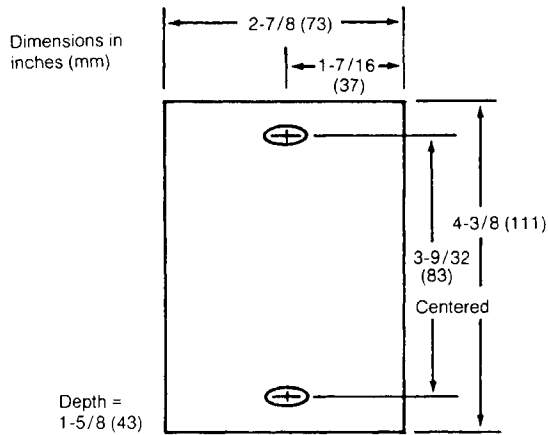


Figure-2 Mounting Dimensions.

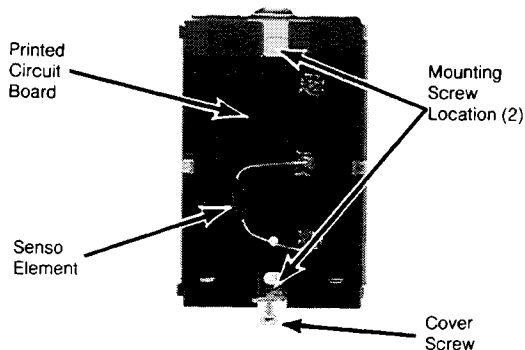


Figure-3 TS-5811 Mounting (Cover Removed) and Part Identification.

Wiring

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

Caution: Shielded cable must be used when it is necessary to install the sensor lead in the same conduit with power wiring, or when it is known that high RFI/EMI generating devices are near. System ground the shield at the controller only on the COM (-) terminal or Blue (-) lead. Do not use an earth ground.

If sensor is used in an energy management system, the sensor wiring must be placed in a separate conduit.

Do not use inside of the cover as a junction box for other control circuits.

Restrict element lead to shortest length practical (see Table 2).

Table-2 MAXIMUM SENSOR WIRING RUN.

Wire Gauge	Length of Run in ft. (m)
	TS-5811 Sensor to Energy Management System
22	150 (46)
18	1000 (305)
16	2250 (686)
14	4000 (1219)

CHECKOUT

Measure the resistance between terminals 7 and 8 (see Figure 1). 1000 ohms $\pm 0.12\%$ at 32°F (0°C); changes 2.14 ohms per °F (3.85 ohms per °C) (see Table 1).

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 a defective sensor with a functional unit.

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