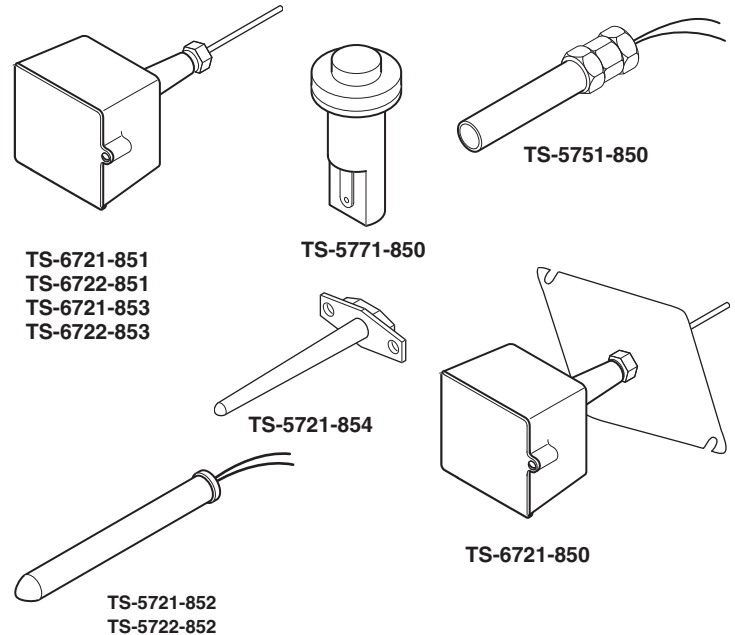


APPLICATION

Electronic thermistor sensing of temperature at remote room locations, ducts, liquid lines, tanks, outdoor air, and similar applications. For use with Schneider Electric NETWORK 8000 energy management systems only.



SPECIFICATIONS

Sensing Element: Thermistor resistance, 10,000 ohms or 30,000 ohms (TS-6722-85X series only) at 77°F (25°C) shunted with an 11K ohms 0.1% resistor.

32 to 158°F (0 to 70°C),

Error ±0.36 F° (0.2 C°) maximum

Drift/Year 0.045 F° (0.025 C°) maximum

Over Operating Temperature Limits,

Error ±0.76 F° (0.42 C°) maximum except

±0.36 F° (0.2 C°) maximum for TS-5771-850

Drift/Year 0.09 F° (0.05 C°) maximum

Nominal Resistance Values, See Table-3.

See Tables 1 through 3 for additional specifications.

ACCESSORIES

AT-211	Sun shield.
AT-215	Stainless steel bulb well for TS-6721-850.
AT-225	Stainless steel bulb well for TS-6721-851 and TS-6722-851.
AT-226	High pressure brass well.
M-500	Temperature conductive grease.

Table-1 SPECIFICATIONS.

Part Number	Description	Mounting Connection	Dimensions in. (mm)		Wiring Connections
			Element	Wiring Enclosure	
TS-6721-850	Duct/ Immersion ^a	Mounting Flange, 1/4" NPT ^a	1/4 (6) dia. x 8 (203) lg.	2-7/8 H x 2-3/8 W x 1-1/2 D (73 x 60 x 38) with 2-1/2 (64) Extension to Element. 1/2" Knockout (top).	12" (305 mm) Brown Pigtail Leads
TS-6721-851 TS-6722-851	Immersion ^b	1/4" NPT Nut ^b	1/4 (6) dia. x 4 (102) lg.		
TS-6721-853 TS-6722-853	Immersion	1/4" NPT Nut ^c	1/4 (6) dia. x 4 (102) lg.		
TS-5721-852 TS-5722-852	Strap-On	Nylon Wire Tie ^d	1/4 (6) dia. x 2-1/4 (57) lg.	None	
TS-5721-854	Duct	Flange	5/16 (8) dia. x 7-3/4 (197) lg.	None (can be mounted in a NEMA Standard 5-16-1984 handy box)	1/4" Spade Connections (2 female connectors provided)
TS-5751-850	Outdoor	1/2" Conduit.	1-1/8 (29) dia. x 5 (127) lg	None	3' (.9 m) Brown Pigtail Leads
TS-5771-850	Unitary ^e	17/32" (13.5 mm) dia. Mtg. Hole ^e	3/4 (19) dia. x 1-1/4 (32) lg.	None	1/4" Spade Connections (2 female connectors provided)

^a Immersion requires AT-215 or AT-226 bulb well.

^b Immersion requires AT-225 bulb well.

^c AT-225 bulb well included.

^d Factory supplied 2-1/2 x 2 in. (64 x 51 mm) foam insulation tape and 30 in. (762 mm) nylon wire for 1-1/2 thru 8 in. (38 thru 203 mm) dia. pipes.

^e For mounting through fan coil of unit ventilator cabinet or similar application. Ambient humidity limits, 5 to 95% RH, non-condensing.

Table-2 AMBIENT TEMPERATURE LIMITS °F (°C).

Part Number	Shipping & Storage	Operating (Sensing Probe)
TS-6721-850 TS-6721-851 TS-5721-852 TS-6721-853	-40 to 160 (-40 to 71)	-40 to 250 (-40 to 121)
TS-5721-854	-40 to 160 (-40 to 71)	-40 to 140 (-40 to 60)
TS-6722-850 TS-6722-851 TS-5722-852 TS-6722-853	-40 to 160 (-40 to 71)	85 to 250 (29 to 121)
TS-5751-850	-40 to 160 (-40 to 71)	-40 to 140 (-40 to 60)
TS-5771-850	-40 to 160 (-40 to 71)	40 to 140 (4 to 60)

Table-3 TEMPERATURE VS. RESISTANCE.

Temperature °F (°C)	Nominal Resistance Values (in 1000 Ohms)	
	TS-6721-850 TS-6721-851 TS-5721-854 TS-5721-852 TS-6721-853 TS-5751-850 TS-5771-850	TS-6722-851 TS-5722-852 TS-6722-853
-40 (-40)	10.517	-
-22 (-30)	10.172	-
- 4 (-20)	9.654	-
14 (-10)	8.933	-
32 (0)	8.044	-
50 (10)	6.938	-
68 (20)	5.798	-
77 (25)	5.238	8.049
86 (30)	4.696	7.599
104 (40)	3.707	6.644
122 (50)	2.875	5.665
140 (60)	2.206	4.724
158 (70)	1.685	3.870
176 (80)	1.287	3.180
194 (90)	0.986	2.510
212 (100)	0.760	2.002
230 (110)	0.590	1.598
248 (120)	0.462	1.278

INSTALLATION

Inspection

Visually inspect the carton for damage. If damaged, notify the appropriate carrier immediately. 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 drill and drill bit for mounting screws
- Appropriate accessories
- Mounting screws (2) #10 x 3/4" sheet metal, provided with TS-6721-850 and TS-5721-854

▼ 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.

Mounting

▼ CAUTION

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

**TS-6721-850
Duct/Immersion
Sensors**

Duct

Note: Hand tighten only - do not overtighten.

1. Determine the sensor mounting location on the duct (predetermine the knockout hole location for routing of conduit). The sensing element is located within 1 inch of the end of the sensing probe, and it should be in the air stream at a location that is typical of the temperature requiring sensing. Approximately 3" of length adjustment is available.
2. Use the mounting flange 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 the two #10 x 3/4" sheet metal screws provided.

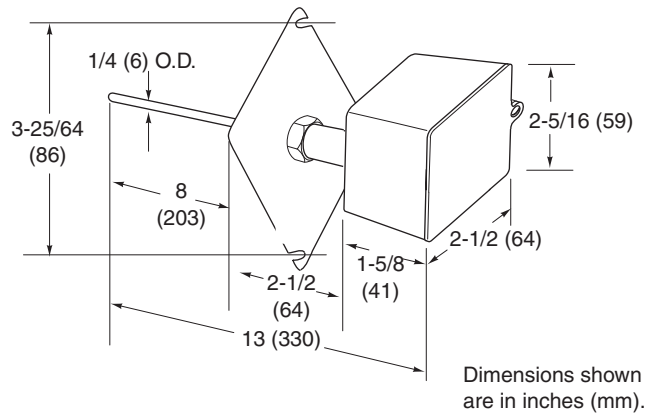


Figure-1 TS-6721-850 Mounting Dimensions.

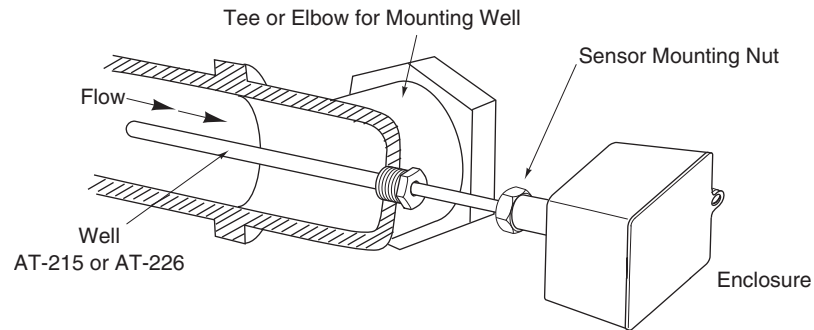


Figure-2 TS-6721-850 Immersion Mounting.

Immersion (Requires AT-215 Bulb Well)

1. Thread the sensor into AT-215 bulb well that has been installed in a liquid line or tank (Figure-2).

Note: The AT-215 bulb well should be filled with a temperature conductive grease prior to element insertion, for optimum medium temperature sensing.

**TS-5721-854 Duct
Sensors**

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 flange 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 two #10 x 3/4" sheet metal screws provided.

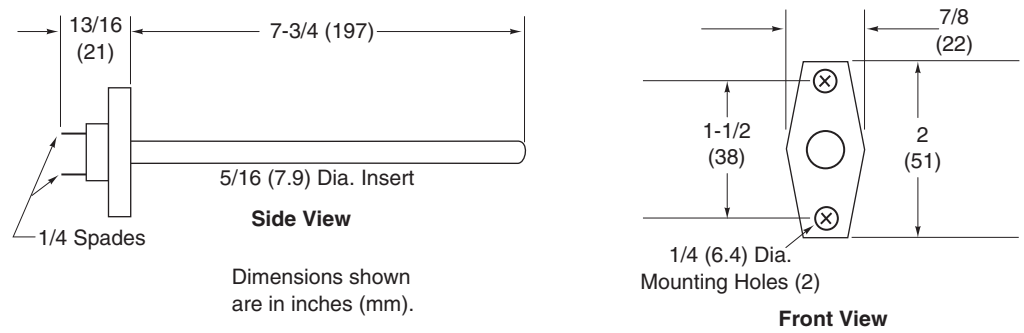


Figure-3 TS-5721-854 Mounting Dimensions.

TS-672x-851 and TS-672x-853 Immersion Sensors

TS-672x-851 requires AT-225 bulb well to be purchased separately (Figure-4). Thread the sensor into AT 225 bulb well that has been installed in a liquid line or tank.

Note: The AT-225 bulb well should be filled with a temperature conductive grease prior to element insertion, for optimum medium temperature sensing.

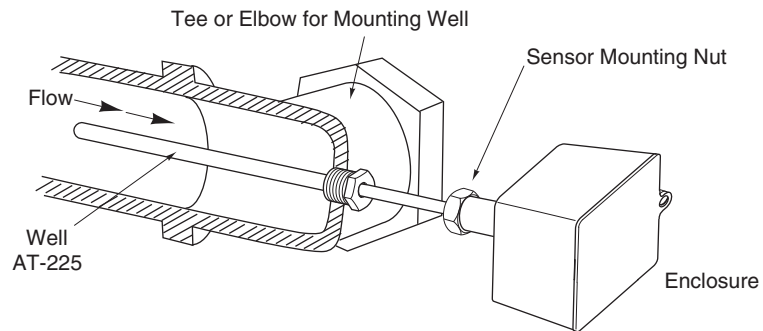


Figure-4 TS-672x-851 and TS-672x-853 Immersion Mounting.

TS-5721-852 and TS-5722-852 Strap-On Sensors

Foam insulation tape should be taped over the sensor (Figure-5). Extend insulation beyond the ends of the sensor.

Secure sensor and foam insulation tape to pipe with wire tie (factory supplied) or metal hose clamp (not included).

▼ CAUTION

Do not tighten clamp or wire tie to the point of distorting the sensor. Overtightening fasteners will cause a shift in sensed temperature.

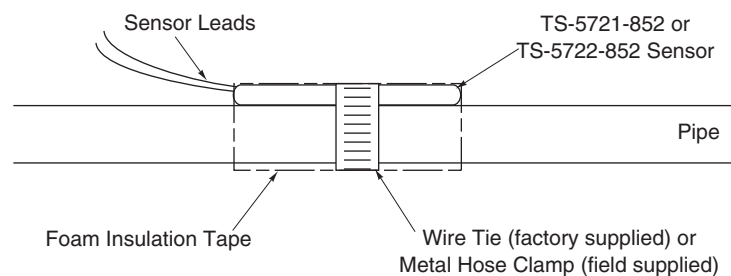


Figure-5 Typical TS-5721-852 or TS-5722-852 Strap-On Sensor Installation.

TS-5751-850 Outdoor Air Sensor

Mount sensor to waterproof conduit box using the 1/2" conduct connection (see Figure-6 and Figure-7).

Use sun shield if required by application (see Figure-8).

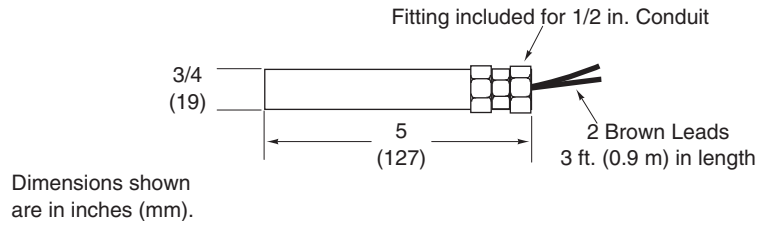


Figure-6 TS-5751-850 Mounting Dimensions.

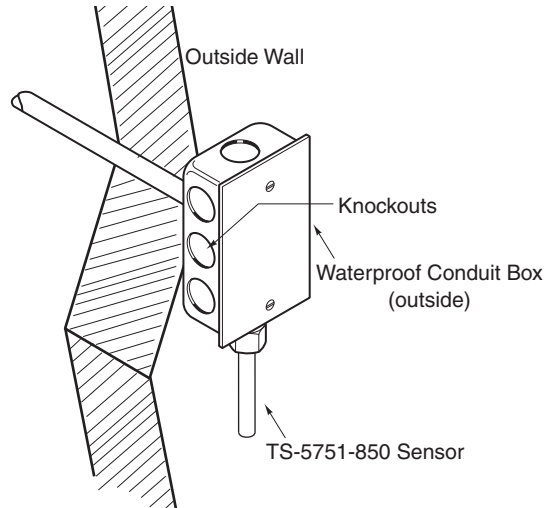


Figure-7 TS-5751-850 Typical Mounting.

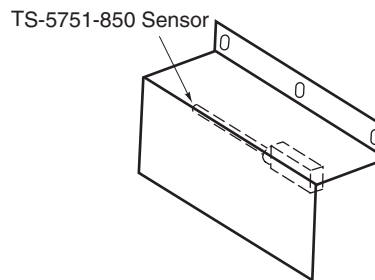
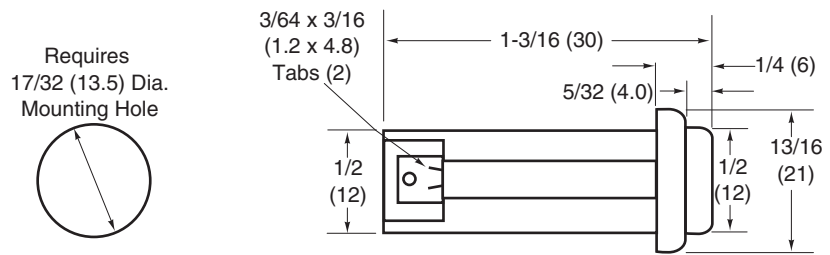


Figure-8 TS-5751-850 Mounted with Shield.

TS-5771-850 Unitary Sensor

1. Determine the sensor mounting location (Figure-9).
2. Drill 17/32" (13.5 mm) diameter mounting hole.
3. Insert gasket to base of sensor "button".
4. Insert sensor with gasket into mounting hole.
5. Secure sensor to mounting flange by inserting Tinnerman nut over back of sensor.
6. Two crimp wire receptacles are provided for spade terminal connection to field wiring.



Dimensions shown are in inches (mm).

Figure-9 TS-5771-850 Mounting Dimensions.

Mounting Duct Sensor Using Existing Mounting Plate

Table-4 APPLICABLE MODELS.

New Part Number	Old Part Number
TS-6721-850	TS-5721-850
TS-6721-851	TS-5721-851
TS-6721-853	TS-5721-853
TS-6722-851	TS-5722-851
TS-6722-853	TS-5722-853

When a duct sensor is being replaced at a location where an existing mounting hole size exceeds the coverage of the adaptor flange, use the existing mounting plate as follows:

1. Remove the existing unit from the duct. Note location of the unit's conduit hole.
2. Remove (and set aside for later use) the conduit nut securing the mounting plate to the sensor.
3. Remove the mounting plate from the old sensor.
4. Place the mounting plate on the new sensor and secure with the conduit nut removed from the old sensor. Do not include the plastic adaptor flange.
5. When mounting the sensor to the duct, be sure the conduit hole is located appropriately.

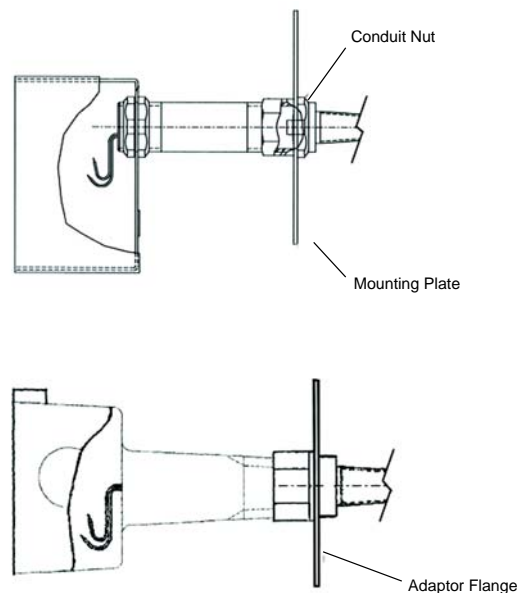


Figure-10 Mounting Duct Sensor Using Existing Mounting Plate.

WIRING

Two conductor twisted 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 per Schneider Electric NETWORK 8000 specifications. Do not use a sensor enclosure as a junction box for other control circuits.

It is generally advisable to use flexible conduit to connect enclosure to rigid conduit.

Restrict element lead to shortest length practical (see Table-5).

Table-5 SENSOR WIRING LENGTHS.

Wire Gauge	Length of Run - ft. (m)
	Sensor to Schneider Electric NETWORK 8000 Energy Management System
22	150 (46)
18	1000 (305)
16	2250 (686)
14	4000 (1219)

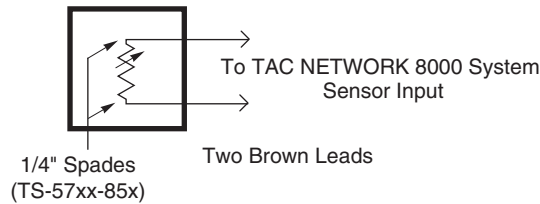


Figure-11 Sensor Connections.

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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