SIEMENS

Installation Instructions
Document No. 540-148
August 15, 2012

TALON® Analog Room Temperature Sensor, 10K Ω Thermistor

Product Description

These sensors work with Siemens controllers. The sensors use a 10K ohm thermistor to detect temperature. The effective sensing range is 55°F to 95°F (13°C to 35°C).

NOTE: Any of these sensors can be mounted on electrical boxes, stud-type mounting brackets, or drywall. Obtain the necessary mounting hardware and follow the appropriate mounting procedures for the type of installation required.

Product Numbers

Product Numbers		Description
TALON Logo**	No Logo	
587-614B	540-661B	Sensing only
587-618B	540-671B	Override and setpoint
587-620CB	--	Override, setpoint and temperature display, Celsius
587-620FB	--	Override, setpoint and temperature display, Fahrenheit

Expected Installation Time

20 minutes

Caution Notation

CAUTION:	⚠	Equipment damage or loss of data may occur if you do not follow the procedures as specified.

Required Tools

- Phillips size 1 or 2 screwdriver
- 1/16-inch Allen wrench, (Part Number 192-632, package of 5)
- Small and medium flat-blade screwdrivers
- Medium-duty electric drill
- 3/16-inch drill bit
- 1-inch hole saw
- Hammer
- Utility knife
- Wire cutters
- Small level
- Tape measure
- Marker or pencil

If using non-preterminated cables (or if cables are damaged), you also need:

- Room sensor connector tool (RJ-11 crimping tool)
- Room sensor connector kit

Prerequisites

- Appropriate field wiring (standard six-conductor room sensor cables, plenum) within the maximum wiring run length for the individual field panel or equipment controller must be installed. The maximum recommended length is 100-feet (30.5 m).
- See Table 2 for cable product numbers.
- All wiring must comply with National Electric Code (NEC) and local regulations.

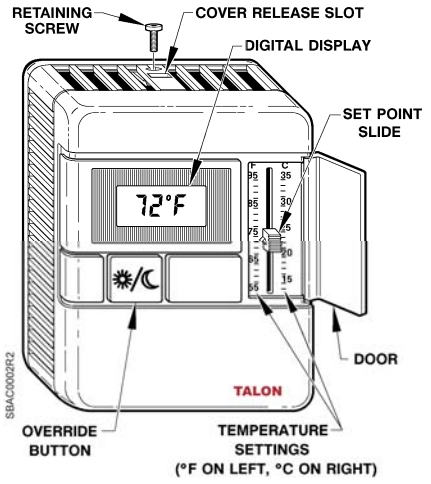


Figure 1. Room Temperature Sensor (Shows All Options).

Item Number 540-148, Rev. CA

Mounting Information

Locate the sensor:

- According to design specifications and local regulations.
- Where the air circulates around it freely (not in recessed areas or behind doors).
- Allowing a minimum of 4 inches (102 mm) free space above and below for proper airflow, the front cover removal tool, and the computer communication cable.
- Away from drafts caused by doors, windows, outside walls, air registers, pipes, return air plenums, etc.
- Away from heat sources such as strong lights, fireplaces, direct sunlight, etc.
- On an inside wall (preferably), about 5 feet (1.5 m) above the finished floor.

NOTE: While not recommended, if you must mount the sensor on exterior brick or cement-type walls. See Table 5 for Accessories.

Drywall Mounting (No Rough-in), Typical

1. Using the sensor base plate as a template, mark the center (cable) hole (use a pencil to press through the rubber insulator) and the mounting hole locations. See Figure 2.

CAUTION:

For drywall mounting, only use the top and bottom holes.

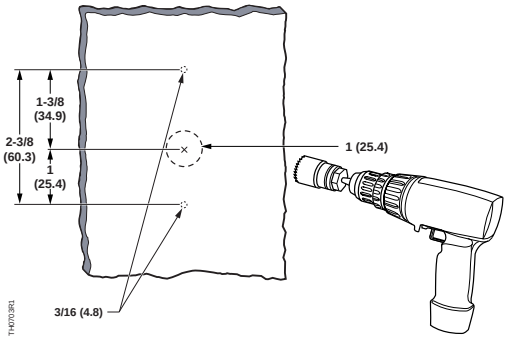


Figure 2. Mounting and Center Hole Locations Dimensions in Inches (Millimeters).

2. Drill two 3/16-inch (4.8 mm) mounting holes.
3. Cut a 1-inch (25.4 mm) center hole with a hole saw. See Figure 2.
4. If using screws to attach the sensor, insert two plastic wall anchors.
5. If necessary, use a utility knife to cut a slit through the rubber insulator in the center hole of the sensor base plate. Pull about 3 inches (75 mm) of the cable through the mounting hardware in the order shown. See Figure 3.

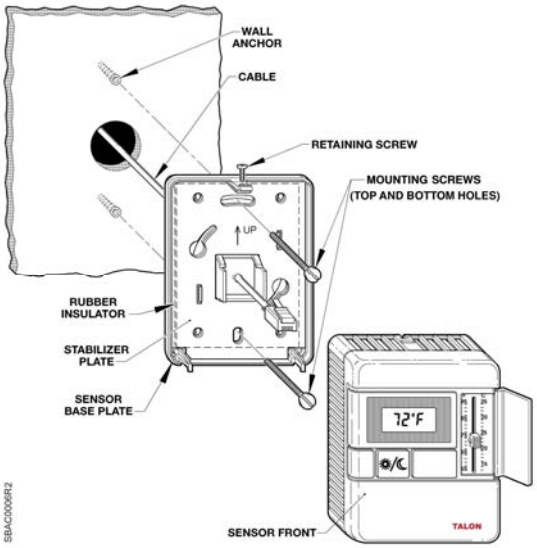


Figure 3. Drywall Mounting (No Rough-in), Typical.

6. Mount the sensor base plate on the wall, noting the UP arrow on the stabilizer plate:
   a. Install the two mounting screws provided, the drive rivets provided, or spring clips, but do not tighten.

CAUTION:

Pounding too hard or over-tightening may cause the sensor base plate to crack or bend.

   b. Level the sensor base plate for appearance.
   c. Tighten the two mounting screws to the sensor base plate.
7. If the cable is terminated, inspect the RJ-11 connector for damage.
8. If the cable is non-terminated or if the RJ-11 was damaged, cut the cable, leaving about 3 inches (75 mm) on the sensor side of the drywall, and attach an RJ-11 connector with an RJ-11 crimping tool. On the RJ-11 connectors, ensure that pin Number 1 connects to the same wire at each end of the cable. See Figure 4.

CAUTION:

For retrofits: Before cutting the cable, make sure it is disconnected from the Room Temperature Sensor (RTS) port on the controller cable end.

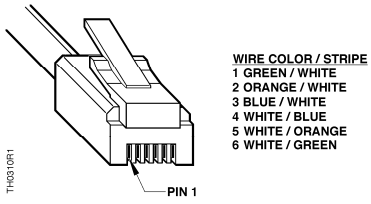
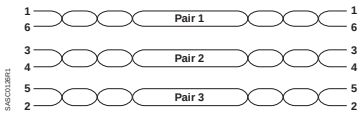


Figure 4. Terminating the RJ-11 Connector.

Table 1. BACnet TEC or ATEC Controller Wiring Diagram.

Pin	Wire	
1 Not Used	Twisted Pair	
6 TX/RX		
3 Room Temp/ Setpoint, Override		
4 Common		
5 TX/RX		
2 GND		

9. Plug the terminated cable into the RJ-11 port on the back of the printed circuit board (PCB).
10. Feed the extra cable back through the hole in the rubber insulator.
11. Snap the sensor front to the sensor base plate:
    a. Hook the sensor front to the bottom latches.
    b. Push the top of the sensor front into place until it latches.
12. Tighten the sensor retaining screw with an Allen wrench. See Figure 3.
13. Connect the sensor to the RTS port on the controller.

The installation is now complete.

Electrical Box and Rough-in Mounting, Typical

1. If a locator is attached to the rough-in device, remove the locator by removing the two screws and lightly rocking the locator to pull it free.
2. Untie the twist tie and pull about three inches (75 mm) of the sensor cable into the space.
3. If you have a single-sensor electrical box, install the electrical box adapter plate. See Figure 5.

   If you have a double-sensor electrical box, install the required mounting plate(s).

   If you use a universal adapter kit for a retrofit job, install the multi-slotted plate in place of the electrical box adapter plate. See Figure 5.

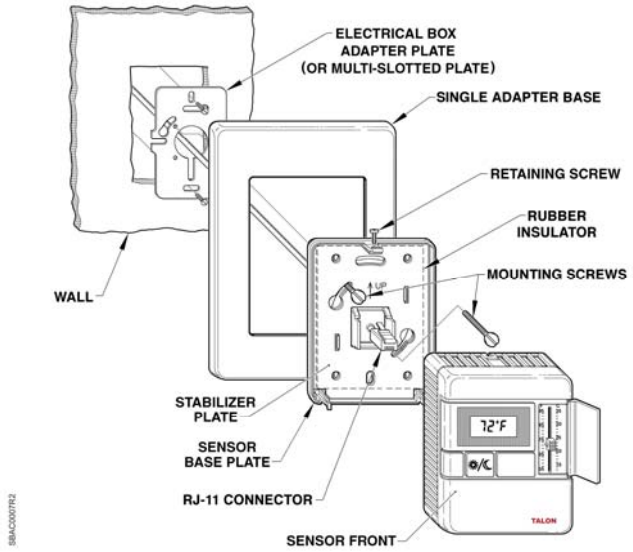


Figure 5. Electrical Box and Rough-in Mounting (Typical).

4. Pull the cable from the wall, through the required mounting hardware in the order shown.
5. Install the two sensor mounting screws provided but do not tighten.
6. Mount the sensor base plate on the wall, noting the UP arrow on the stabilizer plate:
   a. Level the sensor base plate for appearance only.
   b. Tighten the two mounting screws to the sensor base plate.

   CAUTION:

   Over-tightening may cause the sensor base plate to crack or bend.

7. Continue with *Drywall Mounting (No Rough-in, Typical)*, Steps 7 through 13.

The installation is now complete.

Accessories

Table 2. Room Sensor Pre-terminated Cables.

Controller Product Number	Description
Plenum	
540-135 or 588-100A	25-foot (7.6 m) cable with connections
540-136 or 588-100B	50-foot (15.2 m) cable with connections
540-137 or 588-100C	100-foot (30.5 m) cable with connections

For retrofit installations, normally follow the method used by the pre-existing device. You may need to replace existing mounting hardware. Always mount the sensor vertically.

Review Table 3 to verify that you have the appropriate mounting hardware.

Table 3. Mounting Accessories.

P/N	Description	Used For	Reference
182-621E	Gym Guard Kit, satin chrome	gyms and similar environments requiring a guard. (Incompatible with adapter bases and the extender ring.)	155-222P25 (TB 193)
182-683	Metal (and Wood) Stud Mounting Bracket (pkg. 5)	Single-sensor rough-in installations. Kit includes locator.	129-057
182-685	Spring Clips: Finished Drywall Mounting Kit (10 pack)	Drywall mounting.	129-073
192-506	Electrical Box Adapter Plate Assembly Kit (pkg. 5)	Electrical boxes mounted flush with the wall and for gyms and similar environments requiring a guard. (Also see Part Number *544-782*.)	Figure 5
192-860	Finish Plate Kit 1 Gang 1 Sensor; stainless steel	Single-sensor, low-cost mounting. Plate is 3.7 × 5.1 inches (9.5 × 12.9 cm).	155-252P25 (TB 238)
536-666	Mounting Strap	Standard light switch plate (field-supplied) to mount sensor on 2 × 4 electrical box.	540-040; 540-237
544-782B	Single Adapter Base Mounting Kit, white	2 × 4 boxes, all single sensor installations on walls with oversized holes, paint lines, etc., that need to be covered, and on exterior brick/cement-type walls. Kit includes Electrical Box Adapter Plate Assembly (Part Number 192-495. Adapter base is 3-1/2 × 5 inches (8.8 × 12.7 cm).	Figure 5
544-783B	Double Adapter Base Mounting Kit, white	4 × 6 boxes and all double sensor installations on walls with oversized holes, paint lines, etc., that need to be covered, and on exterior brick/cement-type walls. Kit includes two mounting plates (Part Number 192-720). Adapter base is 5 × 7 inches (12.7 × 18 cm).	Figure 5
544-784	Non-conduit Rough-in Kit, Double	Double-sensor non-conduit rough-in installations. Kit includes locator.	540-784
544-785B	Extender Ring Kit	Exterior brick or cement-type walls; fits to back of sensor base plate.	—
544-800	Universal Adapter Kit	Retrofitting a previous horizontal installation to a vertical one, or when the screw spacing does not fit the electrical box adapter plate. Kit includes multi-slotted adapter plate.	Figure 5
981-344	Electrical Box Cover Plate Kit	2 × 4 box rough-ins. Kit includes locator and connector.	—

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