SIEMENS

Technical Bulletin
Document No. 155-210P25
TB 145
April 1, 2005

Powers™ Controls

Installation of Terminal Kits and Mounting of Room Transmitters, Hygrostats and TH 832 “D” Thermostats

Purpose

This Technical Bulletin covers installation instructions for all terminal kits and mounting of room transmitters, hygrostats and the TH 832 “D” Thermostats.

The terminal kits in Table 1 cover all types of wall material found in modern construction.

Mounting Instructions

Transmitters and hygrostats are rectangular and may be mounted either horizontally or vertically. The desired position does not have to be determined at the rough-in stage. The position is determined by placement of the unit on the terminal, not the position of the terminal itself. Therefore, any change from horizontal to vertical or vice versa is possible after the wall surface is finished.

The TH 832 "D" Thermostat must be mounted vertically.

Table 1. Terminal Kits.

Kit Number	Description	Used For	Figure
192-478	Wall Box Kit* 8-foot (2.4m) Copper Tubing	Plaster Wall, Block Wall Concrete Form	1, 2, 4, 14
192-480	Wall Box Kit* 8-foot (2.4m) Polyethylene Tubing	Plaster Wall, Block Wall	1, 2, 14
180-896	Polyethylene Tubing Terminal Kit*	Hollow Walls	5, 8, 15
192-479	Copper Tubing Kit 8-foot (2.4m)	Exposed Installation	6, 17
180-443	Wall Plate Kit	Furnished with each Transmitter and Hygrostat	16
192-482	Bracket Mounting Kit* with 8-foot (2.4m) Copper Tubing	Drywall (rough-in before wall is up)	10, 11
182-683	Bracket Mounting Kit* No tubing (5/Kit)	Drywall (rough-in before wall is up)	10, 11
182-685	Spring Clip Mounting Kit* (10 sets/Kit)	Finished Drywall	12

*These kits include all necessary parts to rough-in.

Installation in New Construction

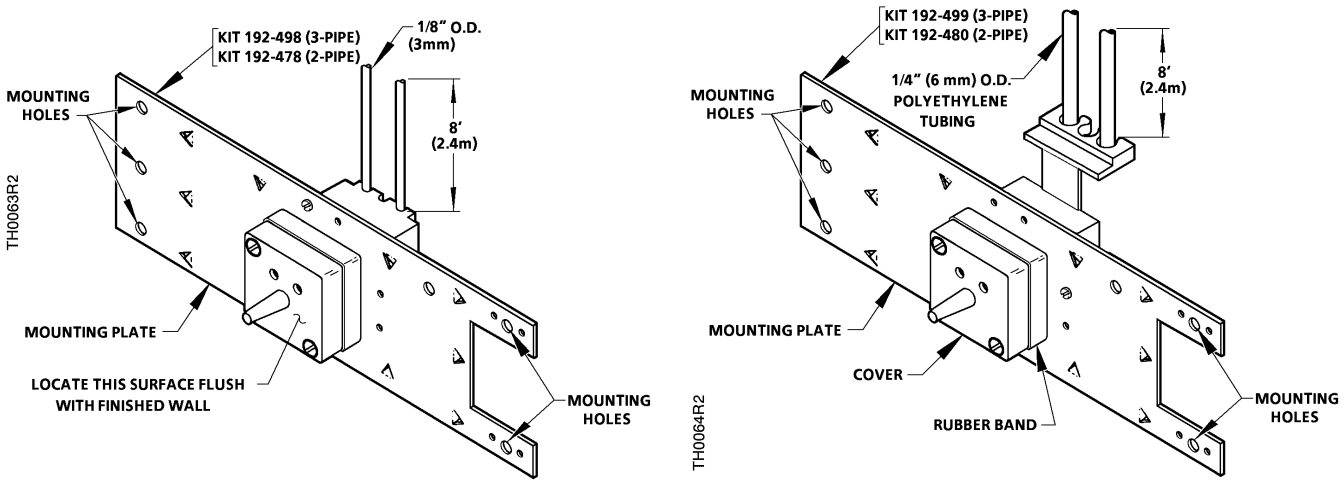

Figure 1. In Plaster Walls Use Wall Box Kit 192-478 or 192-480 as Shown.

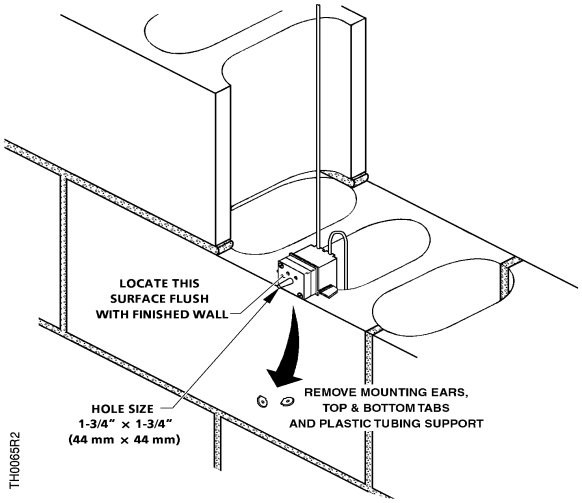

Figure 2. In Block Walls Use Wall Box Kit 192-478 or 192-480.

Remove the mounting plate.

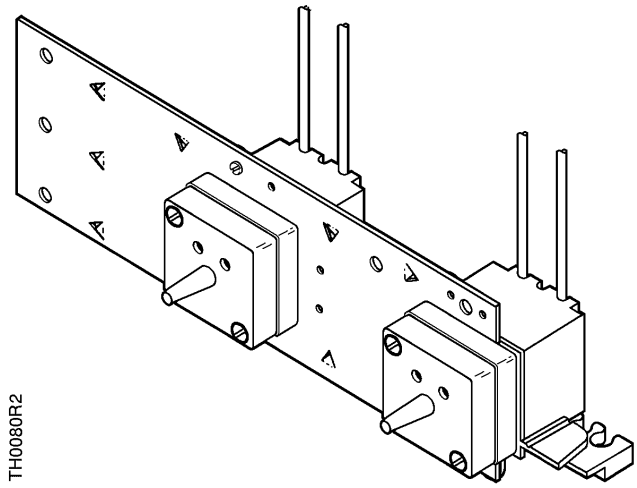

Figure 3. Terminal for Two Vertical Room Transmitters or Hygrostats.

Two wall boxes can be mounted on one plaster plate for vertically installed room transmitters or hygrostats. To facilitate cover installation and removal, vertically installed units must be mounted side-by-side.

Installation in New Construction, Continued

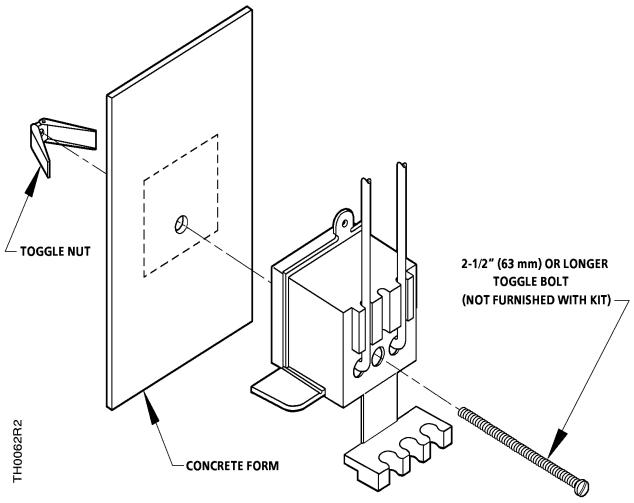

Figure 4. In a Concrete Form Use Wall Box Kit 192-478.

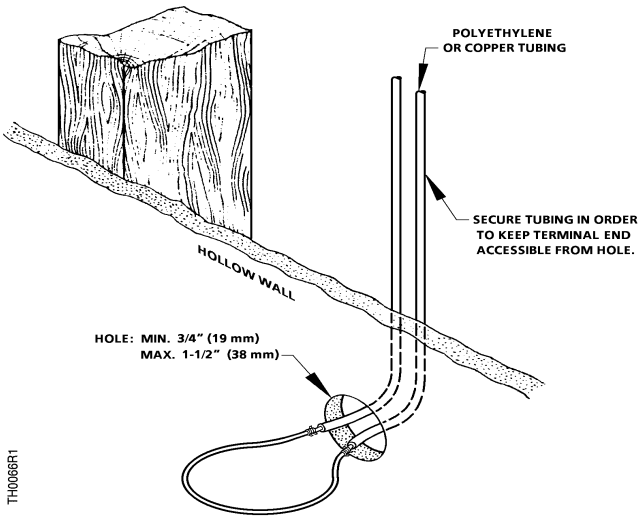

Figure 5. In Hollow Walls Use Tubing Kit 180-896.

After the concrete has set, remove the concrete form and break off the toggle bolt near the back of the wall box.

By removing the connector *(item 5, Figure 14)* this kit can be used with copper tubing.

Installation in Existing Construction

Concealed Piping

There are many types of existing construction, and various methods of installing terminals in existing construction.

Solid or semi-solid walls - If the wall in which the room transmitter or hygrostat is to be located is solid, or the terminal leads cannot be "snaked" through the wall, a portion of the wall must be removed to accept the terminal and tubing. Generally, Wall Box Kits 192-480 or 192-478 are more suitable for this type of installation.

Hollow walls - Many types of wall construction are sufficiently hollow so that the room transmitter or hygrostat terminal can be installed without damaging the finished surface. Generally, the Tubing Kit 180-896 is best suited for this installation. See *Figure 5*.

Installation in Existing Construction, Continued

Exposed Piping

For exposed piping installations, use Kit 192-479 (See *Figure 17*) and Adapter Kit 192-483. See *Figure 6.*

A typical installation procedure consists of the following steps:

1. Install the tubing of Kit 192-479.
2. From Kit 192-483, obtain the multi-slotted metal plate, the mounting screws, and the adapter base.
3. Attach the multi-slotted metal plate to the wall using the screws and slots. See *Figure 6*.
4. Notch the adapter base where necessary to fit over the exposed tubing.
5. Obtain the wall plate and screws from the transmitter or hygrostat box.
6. Loosely screw the adapter base to the multi-slotted plate.
7. Draw the plastic tubing of Kit 194-479 through the multi-slotted plate and the adapter base.
8. Discard the air link and the two plug-in adapters.
9. Attach the plastic tubing to the wall plate securing it with tube retainers. The supply line will be underneath the return line on a vertical room transmitter or hygrostats.

NOTE: Transmitters have only one pneumatic connection. The supply line is always used. The return line is not required.

10. Using the key slotted holes, place the wall plate onto the adapter base. Fasten the mounting screws to secure the wall plate and the adapter base to the wall.
11. Moisten the quad rings on the wall plate. Plug the room transmitter or hygrostat into the wall plate.
12. Attach the instrument to the wall plate with the screws furnished.
13. Install the cover.

The installation is now complete.

Installation in Existing Construction, Continued

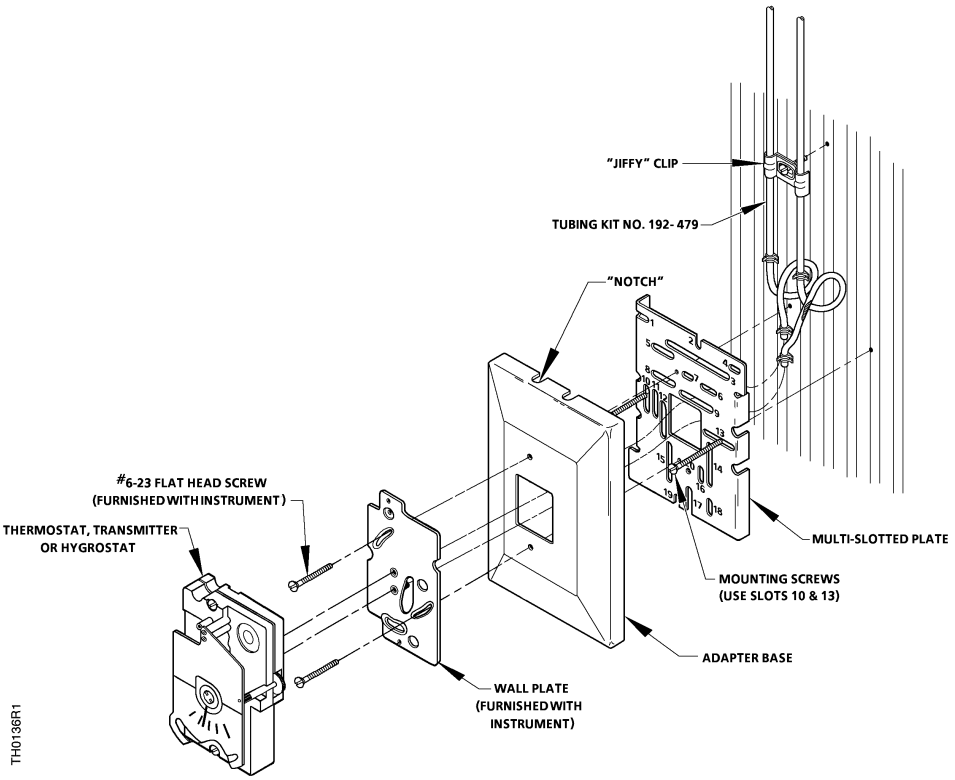

Figure 6. Exposed Piping Installation.

Installation of Room Transmitters or Hygrostats

The room transmitter or hygrostat can be mounted to the wall box using either Kit 192-480 or 192-478. See *Figure 7*.

A typical installation procedure consists of the following steps:

Mounting to a Wall Box

1. Remove the wall box cover. If the wall box has been installed in a plaster wall, remove only a minimum amount of plaster from the wall box when removing the wall box cover.
2. Pull out the plastic tubing connected to the supply and return lines and discard the air link and the plug-in adapters.
3. Use tube retainers to secure the supply lines and return lines to the wall plate. The supply line will be underneath the return line on a vertical room transmitter or hygrostat.

NOTE: Transmitters have only one pneumatic connection. The supply line is always used. The return line is not required.

4. Mount the wall plate to the wall box, using the screws furnished.
5. Carefully plug in the room transmitter or hygrostat to the wall plate.

NOTE: Wet or moisten the room transmitter or hygrostat supply and return ports. This will lubricate and allow the room transmitter or hygrostat to slip through the quad rings more easily.

6. Attach the room transmitter or hygrostat to the wall plate with the screws furnished.
7. Install the cover.

The installation is now complete.

Installation of Room Transmitters or Hygrostats, Continued

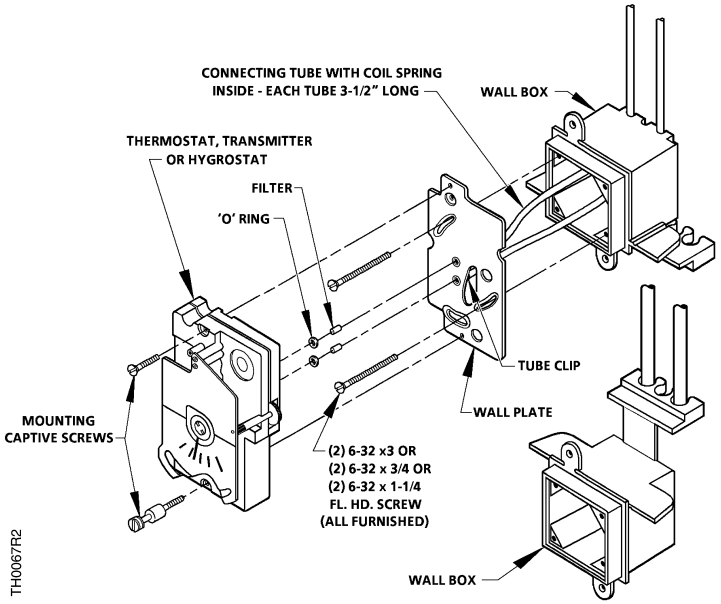

Figure 7. Mounting Wall Plate and Room Transmitter or Hygrostat with Wall Box Kit No. 192-478 or 192-480.

Mounting to the Wall

The room transmitter or hygrostat can be mounted to the wall using the Tubing Terminal Kit 180-896. See *Figure 8*.

A typical installation procedure consists of the following steps:

1. Using the wall plate as a template, drill holes for toggle bolts above and below the hole cut in the wall. Pull the piping through the wall.
2. Attach the ends of the terminal tubing kit to the supply and return lines. If attaching the kit to copper tubing, remove the connections first.
3. Cut the plastic tubing in half and attach to the supply and return ports of the wall plate.
4. Use tube retainers to secure the supply lines and return lines to the wall plate. The supply line will be underneath the return line on a vertical room transmitter or hygrostat.

NOTE: Transmitters have only one pneumatic connection. The supply line is always used. The return line is not required.

5. Mount the wall plate on the wall with No. 6 screws or No. 6 toggle bolts. (Anchors and screws are not furnished with the kit.)
6. Carefully plug in the room transmitter or hygrostat to the wall plate.

NOTE: Wet or moisten the room transmitter or hygrostat supply and return ports. This will lubricate and allow the room transmitter or hygrostat to slip through the quad rings more easily.

7. Attach the room transmitter or hygrostat to the wall plate with the screws furnished.
8. Install the cover.

The installation is now complete.

Installation of Room Transmitters or Hygrostats, Continued

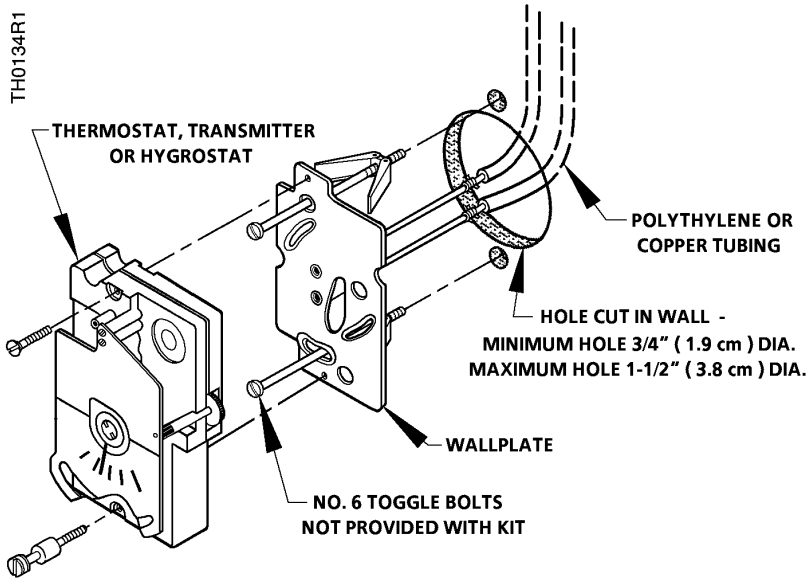

Figure 8. Mounting Wall Plate and Room Transmitter or Hygrostat with Tubing Kit 180-896.

Installation of TH 832 "D" Thermostats

(See *Figure 9)*

The TH 832 "D" Thermostat can be mounted to the wall box in Kits 192-478 or 192-480. To install the TH 832 Thermostat, proceed as follows:

1. Remove the wall box cover.

NOTE: Important: If the wall box has been installed in a plaster wall, remove only a minimum amount of plaster from the wall box when removing the cover.

2. Mount the base against the wall using one of the holes in the lower corner of the wall box to secure the base. A second hole is required to keep the base stationary. (Use anchors, screws, toggle bolts, etc.)

3. Pull out the plastic hose connecting the supply and return lines and cut in half.

4. Connect the supply line to the barb on the left (as you face the wall) and the return line on the right. Use the tube retainers to secure the plastic hose over the terminal head barbs.

5. Mount the finish plate with the thermostat attached to the base.

6. Set the thermostat and install the cover.

The installation is now complete.

Installation of TH 832 "D" Thermostats, Continued

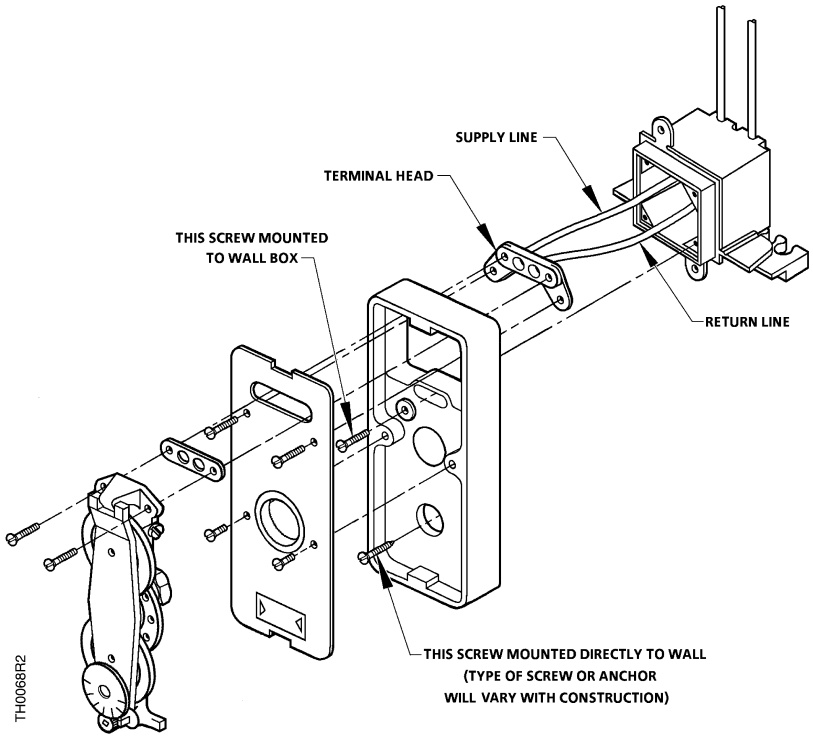

Figure 9. Installation of the TH 832 "D" Thermostat to Wall Box Kit 192-478.

Drywall Installation

Roughing-in procedure depends on whether or not drywall is up at installation time.

Rough-in Before Drywall is Installed

The drywall kit for installations where roughing-in can be done before drywall is up consists of:

Kit 192-482 (See *Figure 10*)

A No. 6–32 x 1-inch flat head steel screw (2)

B No. 10 x ¾-inch type "A" hex head screw

C Connecting tube - 4 inches long

D Drywall mounting bracket

E Locator

F Tube Retainer (2)

G Coil

H Copper tubing - 8 feet

J Wire tie (Twist-ems)

Rough-in Before Drywall is Installed, Continued

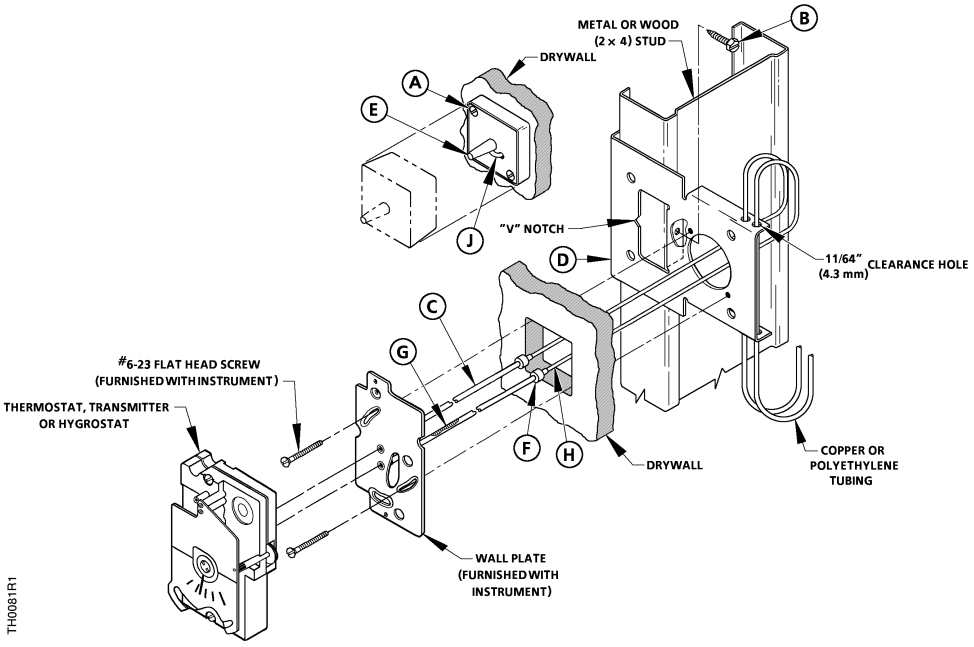

Figure 10. Mounting Wall Plate and Instrument with Bracket Mounting Kit.

This kit was designed to be used on metal studs (metal 2 x 4s), but it can also be used on conventional wooden 2 x 4s. The quick mounting bracket (D), provided with this kit permits it to be fastened securely to the stud with a single, self-tapping sheet metal screw. As shown in *Figure 11*, the bracket can be mounted on either side of the stud. Ideally, the self-tapping screw should always be driven through the appropriate flange on the bracket so that the screw point bears against or pierces the solid (as opposed to open) side of the stud. However, if the situation requires it, the screw could be driven through the opposite flange and into the lip on the open side of the stud.

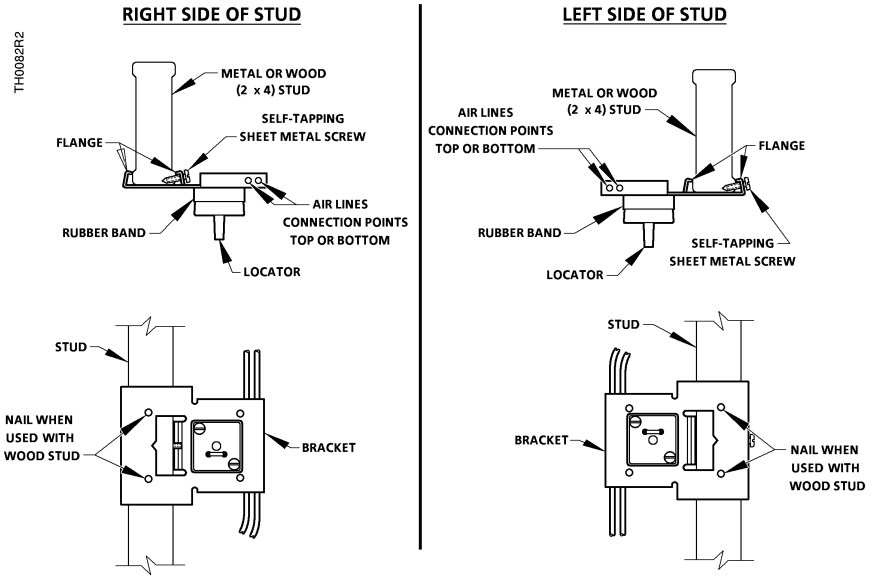

Figure 11. Drywall Mounting Bracket Positions.

Rough-in Before Drywall is Installed, Continued

A typical installation procedure consists of the following steps:

1. Attach the drywall mounting bracket (D) to the stud, per position selected at the desired location. The "V" notch on the bracket indicates the centerline of the transmitter or hygrostat to be mounted.

2. Make all air line connections to the bracket. For installations with 1/4-inch O.D. polyethylene tubing, it is necessary to use tubing Terminal Kit 180-896 to adapt to the connections at the wall plate. In this case after the tubing terminal kit is attached to the 1/4-inch tubing, it must be tied to the locator (E) using wire tie (J) provided. Leave at least 4 to 6 inches of slack in the terminal tubing since it must be pulled into the room at a later stage to attach it to the wallplate.

3. Notify the drywall installer to make a square hole (1–5/8" x 1–5/8") in the drywall so the locator (E) can project through the wall into the room.

4. After the drywall is finished, remove the locator (E) using a screwdriver to remove two screws (A) and lightly rocking the locator while pulling to free it from the plaster.

5. Removing the locator will pull out the terminal tubing. Cut this tubing in half and attach it securely to the wall plate assembly (furnished with the room transmitter or hygrostat). Use the terminal retainers to secure the connections.

6. Fasten the wall plate to the bracket (D) using the screws furnished with the instrument.

NOTE: The wall plate may be leveled by means of the slotted hole.

The installation is now ready to accept a room transmitter or hygrostat.

Rough-in After Drywall is Installed

Kit 182-685
(See *Figure 12*)

The spring clip mounting kit for finished drywall consists of:

A No. 6 x 1–1/4 inch type "AB" flat head steel screws (2)

B Spring Clip (2)

C Spacer (2)

D Template

This kit was designed specifically for 5/8-inch thick drywall, but it can be used on 1/2-inch thick drywall in which case the stick-on spacers provided with the kit fill in the gap between the drywall and clip to provide more holding power. It can also be used on plywood, paneling, or other types of wall sheathing material.

A typical installation procedure consists of the following steps:

1. Place the template (D) on the wall at the desired location. The template has adhesive on the back, protected by paper. Remove the paper backing and make sure the template is level before it sticks to the wall surface.

2. Drill two 5/32-inch diameter holes for #6 wall plate mounting screws.

3. Use a 1-1/4 inch diameter hole saw to drill an access hole in the drywall where indicated on the template.

Rough-in After Drywall is Installed, Continued

4. For drywall 5/8-inch thick, insert the clips (B) with the long leg going through the 1–1/4 inch access hole and resting flat against the back surface of the drywall. The wall is held between the two legs of the spring clips. Align screw holes in the clips (B) with holes on wall.

   For drywall 1/2–inch thick, apply stick-on spacers (C), to the inner surface of the long leg of clips. Then insert the clips as previously mentioned.

5. Fish the air lines through the 1–1/4 inch access hole and attach them securely to the wall plate assembly (Tubing Kit 180-896 may be necessary). Use tube retainers to secure connections.

6. Fasten the wall plate to the drywall using two screws (A). Note that the wall plate may be leveled by means of the slotted hole.

The installation is now ready to accept a room transmitter or hygrostat.

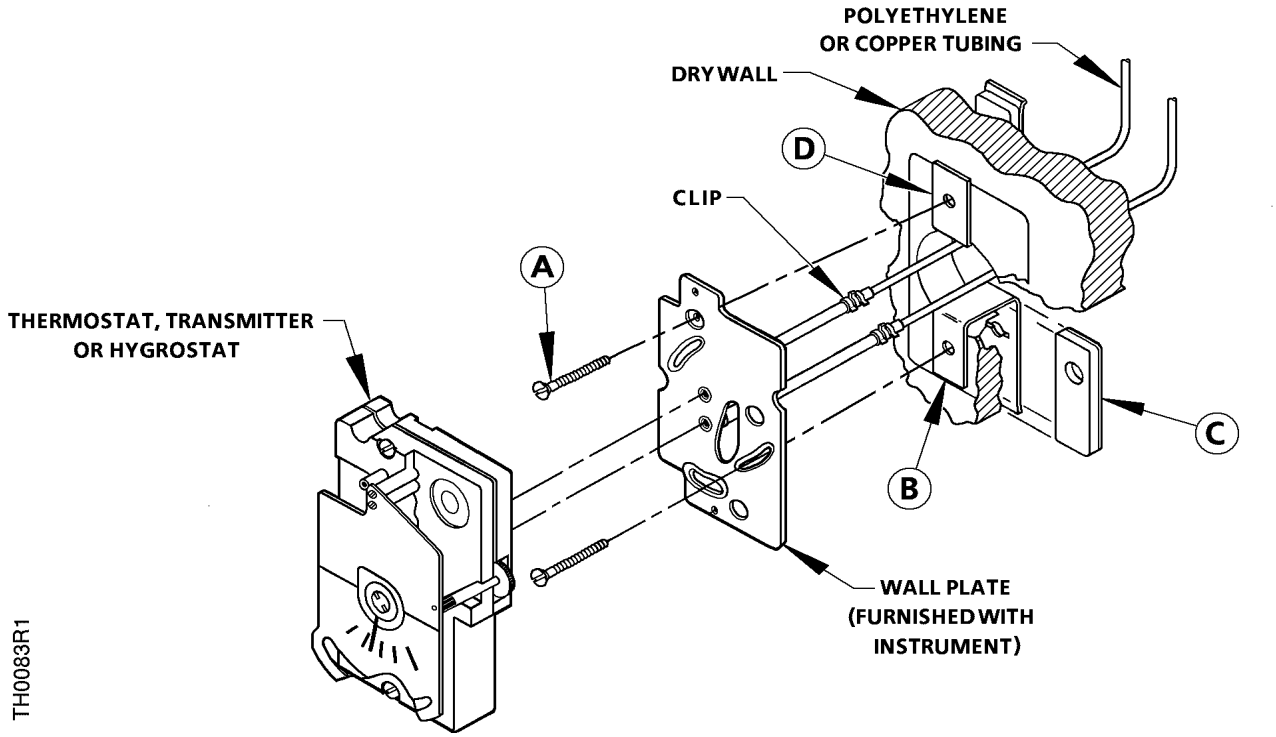

Figure 12. Mounting Wall Plate and Instrument with Spring Clip Mounting Kit.

Maintenance

The wall plate contains several items which occasionally may become damaged or need replacement for other reasons. See *Figure 13*.

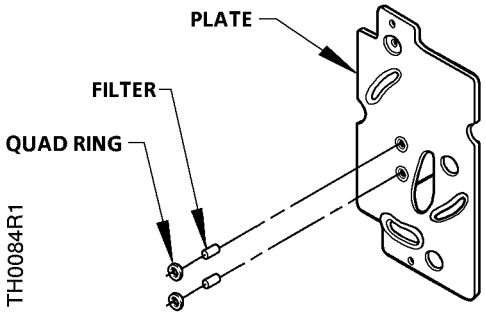

Figure 13. Wall Plate Kit No. 180-443 Showing Filters and Quad Rings.

Replacing Quad Rings

If leaks are detected around the quad rings, new rings should be installed. To install, insert a pencil in the quad ring, pry out and replace with a new ring. It is not necessary to remove the wall plate.

NOTE: To facilitate installation, wet or moisten the new ring when installing. This wetting acts as a lubricant, allowing the ring to slide in more easily.

Filter Replacement

If filters become dirty and need replacement, the entire wall plate should be replaced. Because of their location, it is very difficult to remove the filters. Replacing the entire wall plate is usually more practical.

Construction

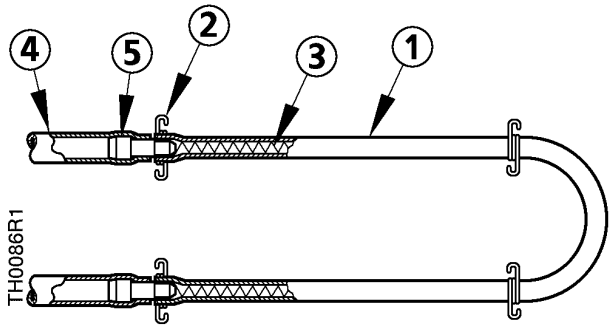

Figure 14. Tubing Kit No. 180-896.

Item No.	Product Number	Description
1	163-131	Connecting Tube, 8 inches long
2	141-387	Tube Retainer (4 Required.) Kit No. 141-388 (Package of 100)
3	182-121	Coil
4	-	Polyethylene Tubing (not furnished)
5	141-246	Connector to 1/4-inch Polyethylene Tubing (2 Required)

Construction, Continued

Item No.	Product Number	Description
1	–	No. 4-40 x 3/16 Lg. Pan Hd. St. Screw (2 Required)
2	–	No. 6-32 x 1 Lg. Fl. Hd. St. Screw (2 Required)
3	163-463	Connecting Tube
4	–	Tube Retainer (4 Required) Kit No. 141-388 (Package of 100)
5	192-835	Wall Box
6	182-687	Locator
7	182-119	Plaster Plate
8	192-513	Coil
9	182-122	Rubber Band
10	854-066A	Copper Tubing - 8 feet long. (2 Req'd.) (Kit No. 192-478 only)
	–	Polyethylene Tubing - 8 feet long (2 Req'd.) (Kit No. 192-480 only)
11	182-258	Connector to 1/4-inch Polyethylene Tubing (2 Req'd.) (Kit No. 192-480 only)
12	–	Air Link - Kit No. 192-501 (Package of 20)
13	–	Plug-in Adapter (Blue) - Kit No. 192-485 (Package of 20)
14	–	Plug-in Adapter (White) - Kit No. 192-486 (Package of 20)

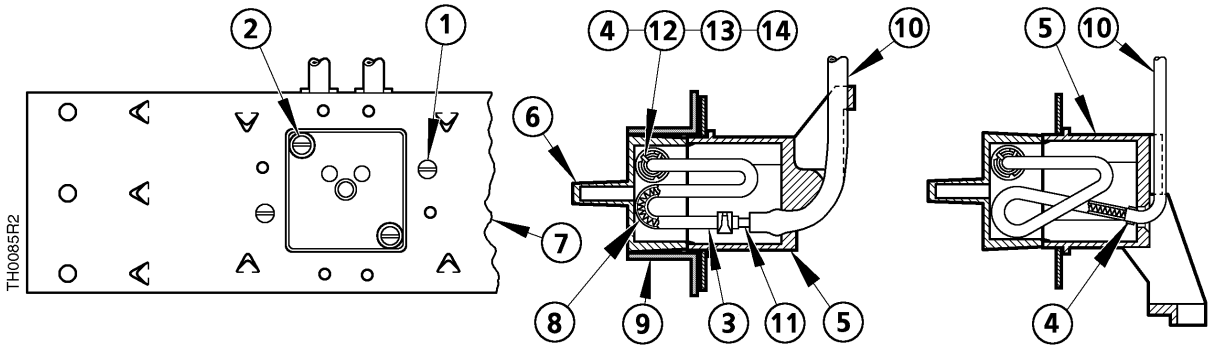

Figure 15. Terminal Kit No. 192-478 and 192-480.

Construction, Continued

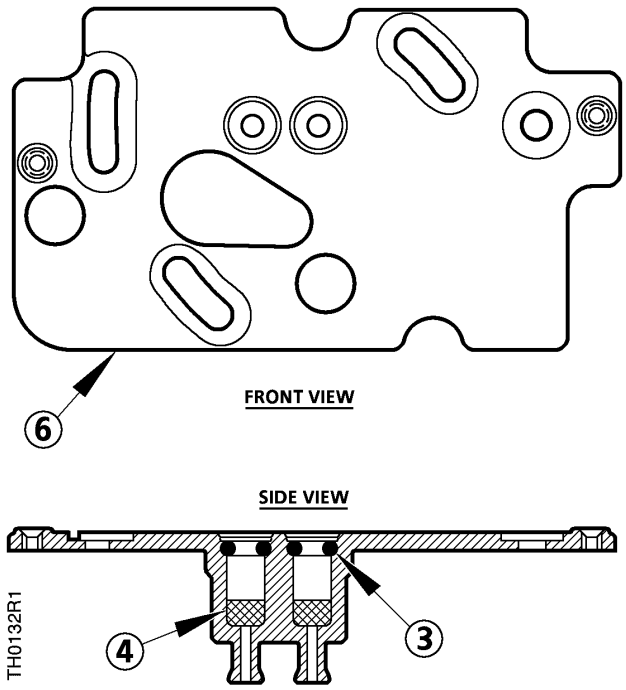

Figure 16. Wall Plate Kit 180-443.

Item No.	Product Number	Description
1*	-	No. 6-32 x 3/4 Lg. Flat Head St. Screw (2 Required)
2*	-	No. 6-32 x 1-1/4 Lg. Flat Head St. Screw (2 Required)
3	-	1/8 x 1/4 x 1/16 Quad Ring (2 Required)
4	-	Filter (2 Required)
5*	141-387	Tube Retainer (2 Required) Kit No. 141-388 (Package of 100)
6	-	Wall Plate Assembly
7*	182-689	Wall Plate Template

*Not shown in figure.

Construction, Continued

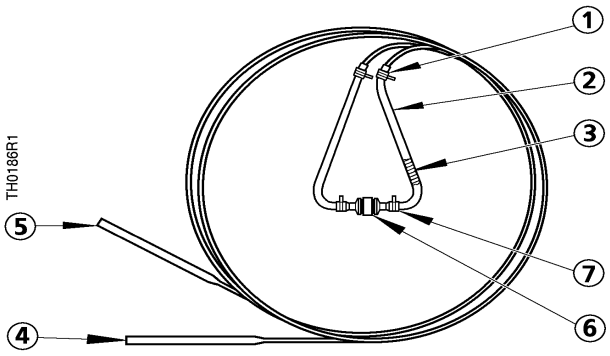

Figure 17. Copper Tubing Kit No. 192-479.

Item No.	Kit Number	Description
1	—	Tube Retainer (4 required) Kit No. 141-388 (Package of 100)
2	163-463	Connecting Tube 4 inches long (2 Required)
3	192-513	Coil
4	854-066A	Copper Tubing 8 feet long
5	854-066B	Copper Tubing 8 feet long
6	—	Air Link Kit No. 192-501
7	—	Plug in Adapter (Blue) Kit No 192-485 (Package of 20)
	—	Plug in Adapter (White) Kit No 192-486 (Package of 20)