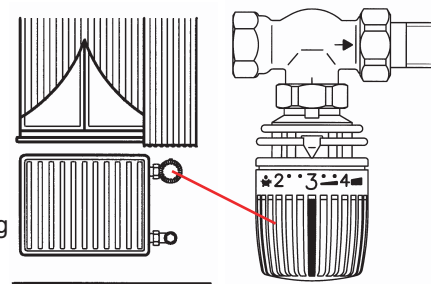# OT1100, OT2100 and OT5100
Thermostatic Actuator Installation Instructions

The OT100, OT2100 and OT5100 are self acting thermostatic actuators designed for the control of hot and chilled water and low pressure steam. The sensor contains a liquid with a expansionary coefficient. When the external temperature rises, the volume in the sensor expands, and closes the valve. When the external temperature lowers, the volume in the sensor decreases, and opens the valve.

OT1100 Installation

The OT1100 should be used where air can circulate freely around it. This actuator can be mounted vertically or horizontally, it can not be mounted upside down.
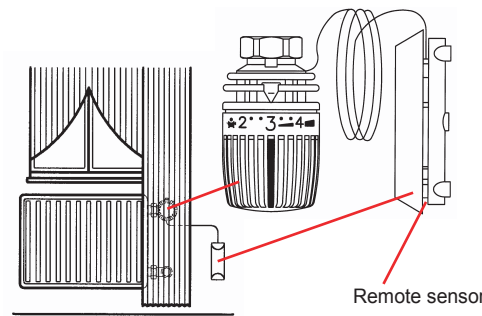1 - Turn the handwheel of the thermostatic control head to position 5
2 - Mount the thermostatic control head on the valve so the setting arrow is pointed up or sideways
3 - Screw the collar nut tightly, using only your hand, using tools may result in over-tightning

OT2100 Installation

The OT2100 should be used where air can circulate freely around the remote sensor. This actuator can be mounted vertically or horizontally, it can not be mounted upside down. The capillary tube must not be kinked and should be placed so that it can not be damaged.
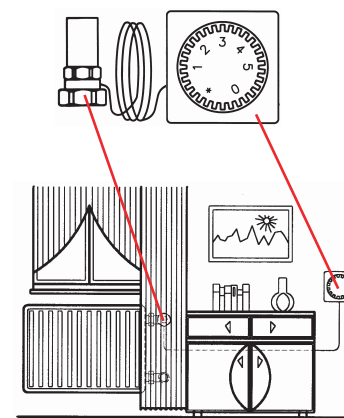
1 - Turn the handwheel of the thermostatic control head to position 5
2 - Mount the thermostatic control head on the valve so the setting arrow is pointed up or sideways
3 - Twist the collar nut tightly, using only your hand, using tools may result in over-tightning
4 - Use the included grey capillary holders to secure the capillary to the wall
5 - Mount the wall holder to the wall using the included hardware.
6 - Place the sensor in the the wall holder and click the top cover in place

Remote sensor

OT5100 Installation

The OT5100 should be used when there is an obstruction in front of the control head, the wall mounted sensor must be placed in an area where air can circulate freely around it. The wall mounted sensor allows for the user to control the head without having to squeeze into a tight space. The OT5100 consists of two parts which are connected by a 6.5' capillary. The capillary tube must not be kinked and should be placed so that it can not be damaged.

1 - Mount the themostatic control head on the valve, twist the collar nut tightly, using only your hand, using tools may result in over-tightning
2 - Use the included grey capillary holders to secure the capillary to the wall
3 - Mount the wall dial to the wall using the included hardware.

The Spartan thermostatic actuators let you utilize a variety of settings. They are described below and on the opposite page.

Frost Protection
With Spartans thermostatic actuators you can protect your valves from freezing by using our frost protection setting. Turn the head of the thermostat to the frost protection position ❄ This position will keep your room at approx. 42ºF (6ºC)
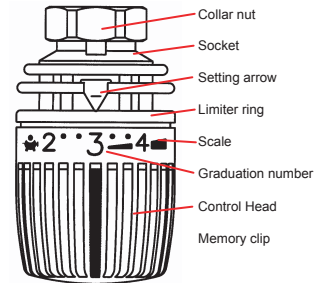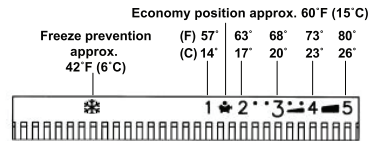
Energy Savings
Full heating of your space is not always needed, therefore you can use the energy savings setting. Turn the head of the thermostat to the economy position ☾ This position will keep your room temperature at approx. 60ºF (15ºC)

OT1100, OT2100 and OT5100
Thermostatic Actuator Installation Instructions

Collar nut
Socket
Setting arrow
Limiter ring
Scale
Graduation number
Control Head
Memory clip

Memory Clip (OT1100 and OT2100 only)

When you have a favorite setting, you can mark this position on the actuator with the memory clip. The factory position is 3, but you can change it by pushing the black clip out and repositioning it in your desired location.

Economy position approx. 60˚F (15˚C)

Freeze prevention approx. 42˚F (6˚C)

| (F) | 57˚ | 63˚ | 68˚ | 73˚ | 80˚ |
| (C) | 14˚ | 17˚ | 20˚ | 23˚ | 26˚ |

Temperature Limits (OT1100 and OT2100 only)

The factory setting for temperature limits is set to frost protection. You can limit the setting to a maximum, a minimum and a constant.

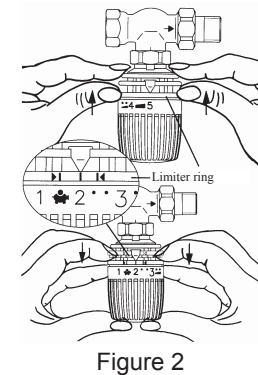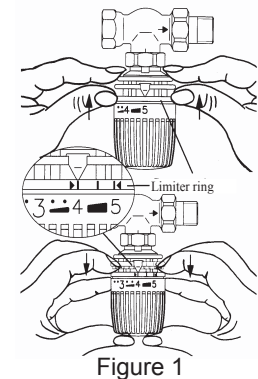**Maximum Temperature** (example: you do not want the temperature setting to go past 4) Figure 1
1 - Turn the actuator head to 4
2 - Pull the limiter ring down
3 - Position the right notch on the limiter ring just after the number 4
4 - Push the limiter ring back into position, your actuator should not turn past 4

Minimum Temperature (example: you do not want the temperature setting to go below 2)
1 - Turn the actuator head to 2
2 - Pull the limiter ring down
3 - Position the left notch on the limiter ring just before the number 2
4 - Push the limiter ring back into position, your actuator should not turn below 2

Constant Temperature (example: you want the temperature setting to stay constant at 2) Figure 2
1 - Turn the actuator head to 2
2 - Pull the limiter ring down
3 - Position the notches on the limiter ring just on either side of the number 2
4 - Push the limiter ring back into position, your actuator should not turn

Limiter ring

Figure 1

Limiter ring

Figure 2

Theft Protection (OT1100 and OT2100 only)

You can secure the actuator to the valve by using the OM1200 theft protection cover. There is a special screw that comes with this part, you will need to order the OM1200T tool to fit this screw.
1 - Install the actuator to the valve
2 - Align one half of the OM1200 with the setting arrow so that you can see the graduation number in the window.
3 - Snap the second half of the OM1200 to the first half
4 - Using the included hardware and your OM1200T tool (not included) screw the two pieces together in the pre drilled hole

TroubleShooting

Problem	Solution
Radiator does not become hot	- check if the radiator is vented - check if the heating system is in working order
Room temperature is significantly below the desired temperature	- check if the thermostatic sensor is placed correctly, not behind the radiator cover, in the cabinet, behind curtains, etc. - check if the radiator is large enough for the room - check if the water temperature is high enough - check the pump performance
Radiator remains warm when the valve is closed	- check if the thermostatic head is adjusted and assembled in order - check for dirt particles in the valve seat
Noises in the valve	- check if supply and return lines are reversed - check if the pump pressure is too high
Leaks in the valve	- replace the packing