Outdoor Sensor - PSSENS01

Fig. 1: Sensor Enclosure and Components

Mounting the Outdoor Sensor

1. Remove the front cover and mounting screws / anchors from the sensor enclosure.

2. When mounting the enclosure, the exterior wall selected should represent the heat load of the building. Typically a northern or northeastern wall will suit most buildings. A southern facing wall for those buildings, which may have large glass walls or windows on the southern face.

3. Ensure the sensor enclosure is shielded from direct sunlight or the effects of heat or cold from other sources (exhaust fans, appliance vents...) to prevent false temperature sensing.

4. Mount the sensor enclosure at an elevation on the exterior wall to prevent accidental damage or tampering.

5. Avoid mounting the enclosure in areas subjected to excessive moisture.

6. Once an area on the exterior wall has been determined, to affix the enclosure use the enclosure as a template to mark the location of the mounting screws.

7. Using a 3/16" drill bit, drill 2 pilot holes on the marked locations.

8. Tap the enclosed plastic anchors into the pilot holes. Use care not to damage the anchors.

9. Mount the sensor enclosure using the screws provided.

Wiring the Sensor

1. Remove the sealing nut and sealing gasket from the sensor enclosure.

2. Route 18 AWG 2-wire cable or similar wire cable through the sealing nut and gasket. Connect the wire ends to the sensor terminals 1 and 2.

2a. Cut a small slit in the seal gasket and route 18 AWG 2-wire cable or similar wire cable through the seal gasket into the enclosure.

3. Re-insert the sealing gasket and tighten the sealing nut to the sensor enclosure.

4. Route the sensor cable back to the appliance, ensuring the cable is not route parallel to telephone or power cables.

> **NOTICE**
>
> **If the sensor cable is located in an area with sources of potential electromagnetic interference (EMI) the sensor cable should be shielded or the wires should be routed in a grounded metal conduit. If using shielded cable the shield wire should be connected to the common ground of the unit.**

5. Connect the sensor cable to the outdoor sensor terminals on the 24V terminal strip located inside the appliance enclosure (see appliance wiring diagram).

NOTICE

The following section applies to PRESTIGE using the Honeywell Type 5 MCBA Control. This Control is identified as Honeywell MCBA 54201.

Summer / Winter Switch

If required the CH (Central Heating) system can be turned off at the appliance, similar to manual summer / winter switch by press/hold the "+" button while in the "*5ŁbY*" mode, the display will show "*cOFF*". Press/hold the "+" button to turn the CH system back on, the display will show "c" followed by CH set point temperature (Parameter 4) or CH target temperature.

Adjusting Outdoor Reset Curve

Parameters 4, 10, 11, & 12 define the settings of the outdoor reset curve. See Graph 1 and Table 1, page 5 for an example of modifying the outdoor reset curve.

CH Maximum Operating Setpoint
(Parameter 4)

Factory Setting	Minimum Setting	Maximum Setting
186°F	86°F	194°F

If an outdoor temperature sensor is not connected to the appliance, the appliance setpoint for a heating call will be set to the CH Maximum Operating Setpoint. If an outdoor temperature sensor is connected, the CH Maximum Operating Setpoint becomes the appliance setpoint on the CH Reset Curve Coldest Day. The outdoor temperature can be monitored on the appliance display via item 4 of the INFO menu.

CH Minimum Operating Setpoint
(Parameter 10)

Factory Setting	Minimum Setting	Maximum Setting
86°F	60°F	140°F

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Minimum Operating Setpoint becomes the appliance setpoint on the CH Reset Curve Warmest Day.

CH Reset Curve Coldest Day
(Parameter 11)

Factory Setting	Minimum Setting	Maximum Setting
00°F	(-)22°F	50°F

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Reset Curve Coldest Day is the coldest design temperature of the heating system.

CH Reset Curve Warmest Day
(Parameter 12)

Factory Setting	Minimum Setting	Maximum Setting
64°F	60°F	78°F

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Reset Curve Warmest Day is the warmest design temperature of the heating system.

Entering MCBA Access Code

The installer must enter the MCBA Access Code to adjust the advanced parameter settings of the MCBA. The Access Code can be entered as follows:

1. Press the MODE button until the display shows *STbY*.

2. Press and hold the MODE and STEP buttons together for 2 to 3 seconds until the display shows *CODE*.

3. Press the STEP button once and the display will show *C_XX* where **XX** represents a random number.

4. Press the "+" or "–" buttons to change the number displayed to read *C_54*.. Press and hold the "+" or "–" button to rapidly change the number.

5. When the display reads *C_54*, press the STORE button to save the Access Code. The display should flash to indicate that the Access Code was saved.

After the Access Code has been entered, the advanced parameters can be accessed by pressing the MODE button until the display shows *PARA*. Once the display shows *PARA*, press the STEP button to reach the appropriate parameter. The display should follow the following sequence:

Press STEP once- *1140*

Press STEP x2 - *2_01*

Press STEP x3 - *3_01*

Press STEP x4 - *4186*

Press STEP x5 - *P_10*

Press STEP x6 - *P_11*   Etc......

After Parameter 4, the display will show P followed by the parameter number. Once a particular parameter is reached, the display will change to show the current setting of that parameter.

NOTICE

The actual parameter values displayed on the display may vary depending on the application, but the sequence will always occur in the order shown.

Changing a Parameter Setting

1. Use the "+" or "–" button to change the parameter setting.

2. Press the STORE button to save the change. The display should flash to indicate that the change was saved.

3. Press the RESET button to leave the Access Code mode.

NOTICE

Parameter 4 is adjustable from 86ºF to 194ºF. The factory setting is 186ºF. Adjusting this parameter may affect the performance of the appliance.

- Once Parameter 4 is displayed, use the + or - button to modify the parameter setting.

- Once the desired parameter setting is reached press STORE to save the value. The display will flash once to confirm the data has been saved.

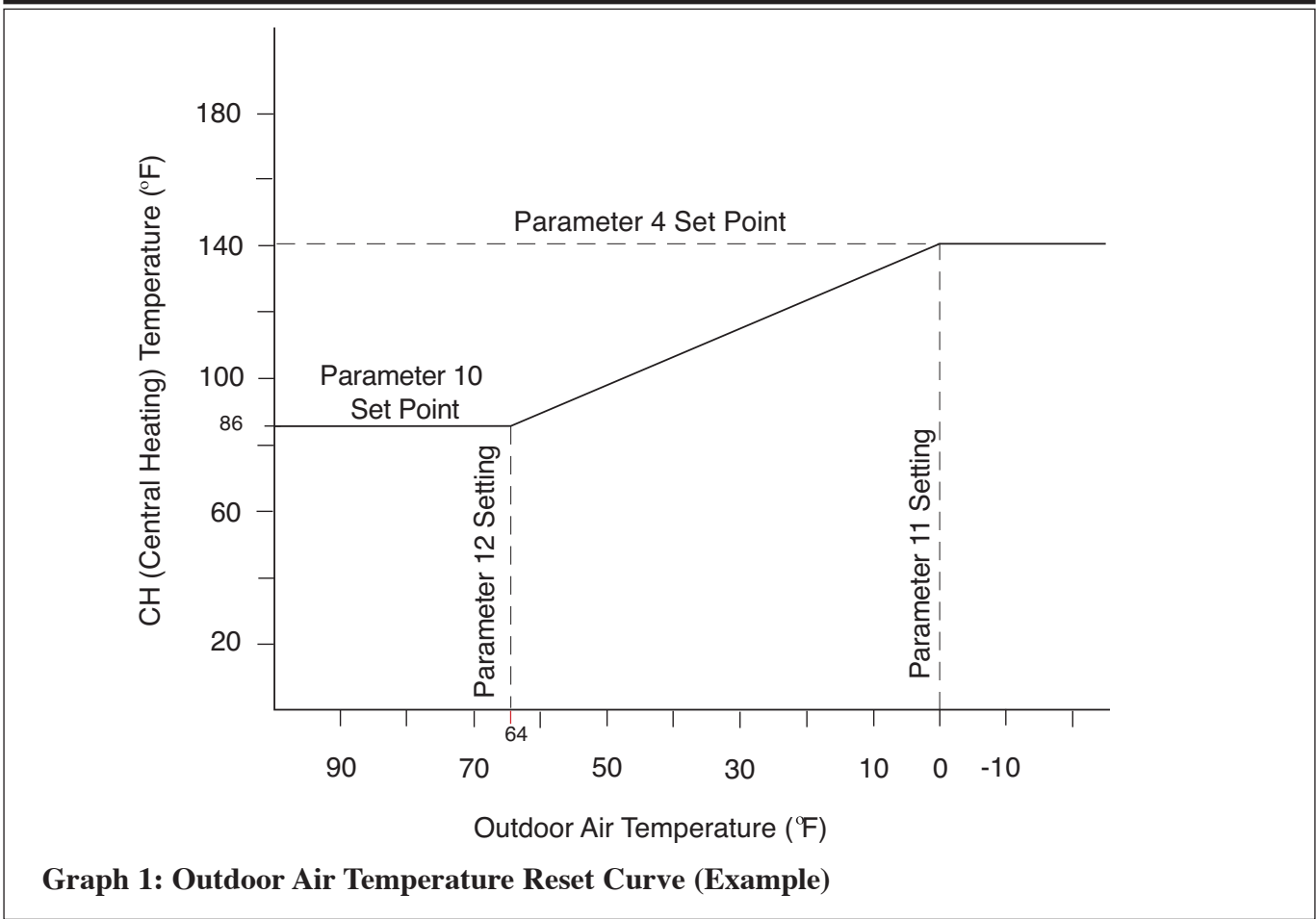- To activate the stored parameter value, press MODE twice to return to the STBY mode.

Graph 1: Outdoor Air Temperature Reset Curve (Example)

Table 1: Outdoor Air Temperature Reset (Example)

Outdoor Temperature	CH Target Temp. Based on Outdoor Temp.
0°F or Lower	140°F
23°F	122°F
40°F	108°F
68°F or Higher	86°F

Graph 1 illustrates Parameter 4 adjusted to 140ºF target temperature at 0ºF outdoor air temperature.

Note: Factory setting of Parameter 4 is 186ºF.

NOTICE

The following section applies to the CHALLENGER condensing boiler and It's internal control module.

Adjusting Outdoor Reset Curve

The appliance CH set point along with Parameters 5, 6 & 7 define the settings of the outdoor reset

CH (Maximum Operating Temperature)

Factory Setting	Minimum Setting	Maximum Setting
186ºF	86ºF	194ºF

If an outdoor temperature sensor is not connected to the appliance, the appliance setpoint for a heating call will be set to the CH Setpoint. If an outdoor temperature sensor is connected, the CH Maximum Appliance Operating Setpoint becomes the appliance setpoint on the CH Reset Curve Coldest Day.

CH Minimum Boiler Operating Setpoint (Parameter 5)

	Minimum Setting	Maximum Setting
86ºF	60ºF	140ºF

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Minimum Appliance Operating Setpoint becomes the appliance setpoint on the CH Reset Curve Warmest Day.

CH Reset Curve Coldest Day (Parameter 6)

	Minimum Setting	Maximum Setting
00ºF	-22ºF	50ºF

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Reset Curve Coldest Day is the coldest design temperature of the heating system.

CH Reset Curve Warmest Day (Parameter 7)

	Minimum Setting	Maximum Setting
64ºF	60ºF	78ºF

This parameter is not applicable if an outdoor sensor is not connected to the appliance. When an outdoor temperature sensor is connected, the CH Reset Curve Warmest Day is the warmest design temperature of the heating system.

Changing Outdoor Reset Parameters

1. Press the ⚒ service button until the appropriate parameter number ⑤ or ⑥ or ⑦ appears in the operating display.

2. Press the **+** or **−** buttons to set the desired parameter value on the main display.

3. Once the desired parameter value has been entered press ⮉ reset until a P appears on the operating display.

The appliance control module has now been reprogrammed with the desired parameter values.

> **NOTICE**
>
> **Pressing the ⓘ ON/OFF button will exit the parameter setting mode without stroing the parameter changes.**
>
> **Pressing the ⚒ service button for a period exceeding 5 seconds will reset the parameter settings to the factory default. The main and service display will show F̄-SET when this occurs.**
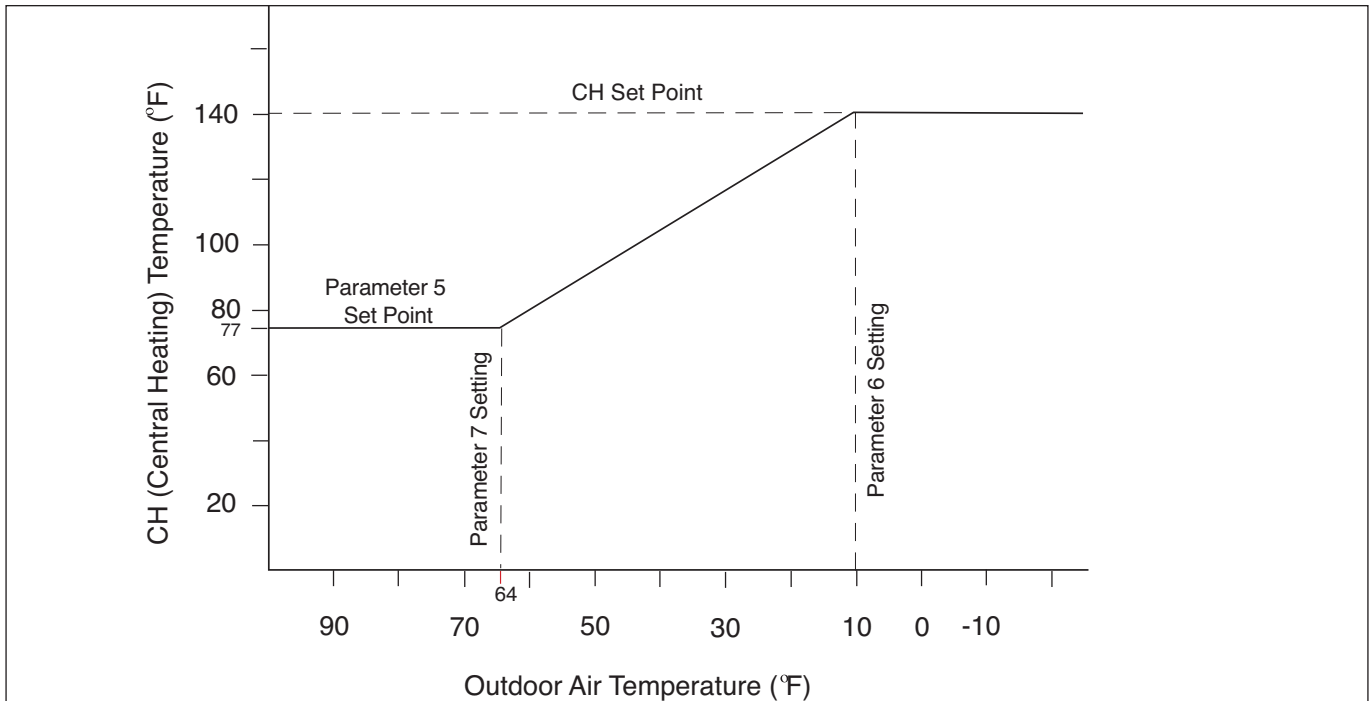
Graph 2: Outdoor Air Temperature Reset Curve (Example)

Table 2: Outdoor Air Temperature Reset (Example)

Outdoor	CH target Temp.
10ºF or Lower	140ºF
30ºF	117ºF
50ºF	93ºF
64ºF or Higher	77ºF

Graph 2 illustrates CH Setpoint adjusted to 140ºF target temperature at 0ºF outdoor air temperature.

Note: Factory setting of CH set point is 186ºF