Controller for Hvac 12V Cooling Unit

Included in Package:

1- Control Assembly
1- Parts Bag containing:
    a. 2 – red female wire connectors
    b. 2 – red male wire connectors
    c. 2 – silver/blue female wire connectors

This controller eliminates all of your existing Norcold or Dometic controls. So that means that your front display panel, your interior light, and your rear control board will no longer work. This new controller has its own temp control device and thermostat, as well as a light bulb that is motion activated. To mount this new control assembly, you will need to remove the existing interior fin fan and all wiring associated with the fin fan that is clipped to the fins inside the fridge. Then mount the new controls in the exact spot that the fin fan was at. There are two switches on the control assembly. The switch on the front is what you will use to turn on/off the fridge. The switch should be in the up position to turn the fridge on and down position to turn the fridge off. The other switch is located on the back side of the control assembly. (See page 11) If this switch is in the down position, the light bulb will turn on and off with the motion sensor. If this switch is in the up position, the light will remain on constantly. The only time this switch should be in the up (constantly on) position, is if you are using the fridge in cold weather and the freezer isn't getting quite cold enough. Leaving the light on will give off a little bit of heat into the fridge section and cause the cooling unit to run a little longer. Which will cause the freezer temp to get colder.

Installation

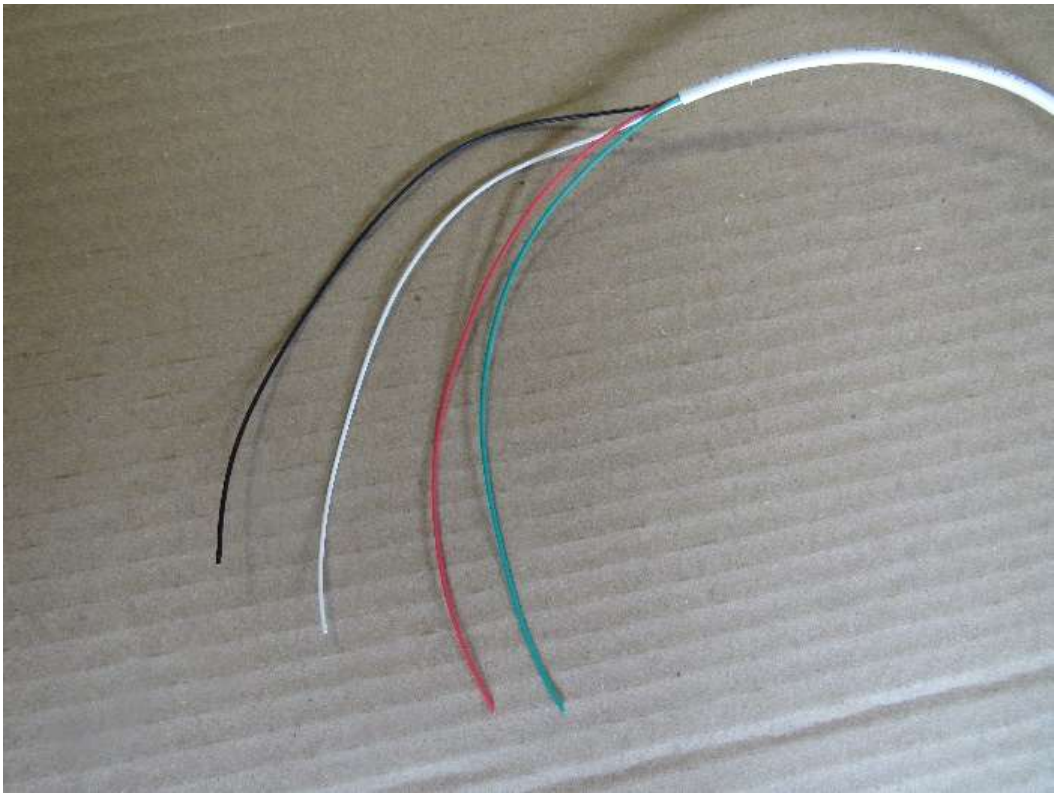
Make sure that the switch on the controller is set to "Off" before starting the install. You will also need to remove all wiring plugged into the control board on the back of the fridge and then remove the control board itself.

Step 1: Remove the existing fin fan assembly inside the fridge. Also remove any wiring associated with this fan.

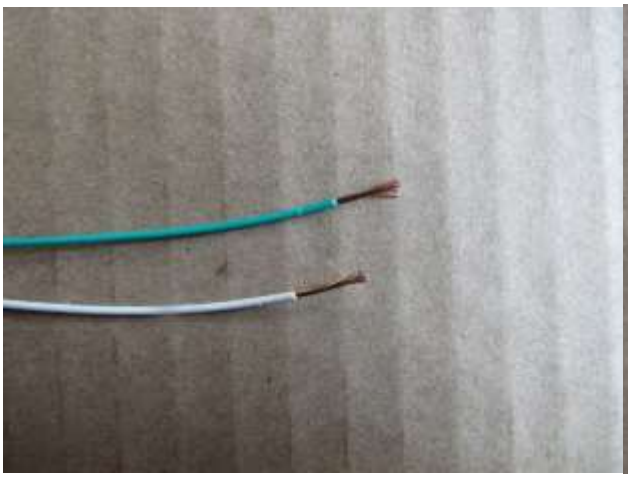
Step 2: Mount the new control assembly onto the fins in the same spot that the fin fan was mounted.

Step 3: Clip the zip tie holding the wire together for the new controls. Feed the new wire through the drain hose to the back side of the fridge. You want to leave a couple inches of extra wire inside the fridge, just in case you need to move or adjust the control assembly for some reason.

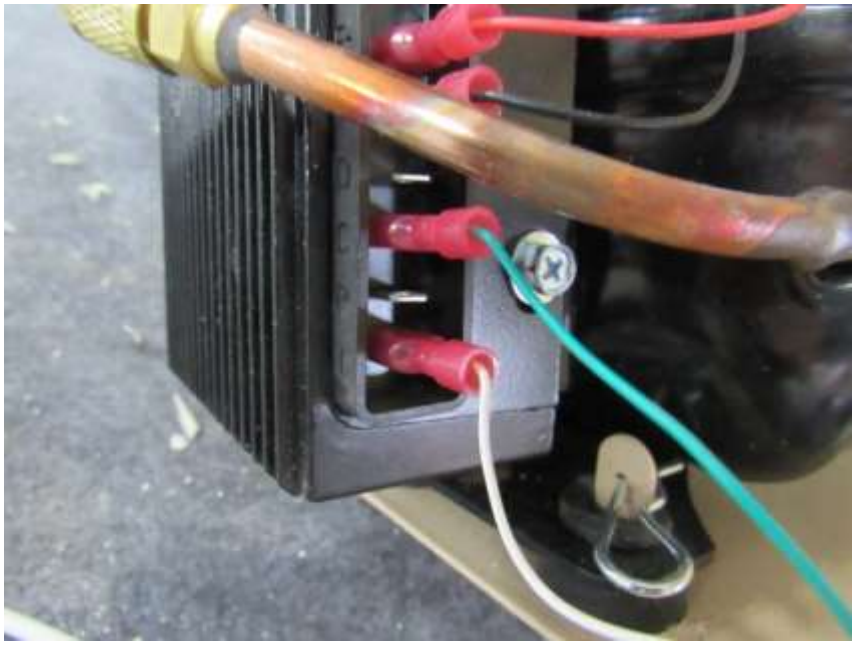
Step 4: Once you have the wire through the drain hose, strip about 6 inches of the white coating off of the end of the wire. Inside there will be 4 smaller wires, red, black, green and white.



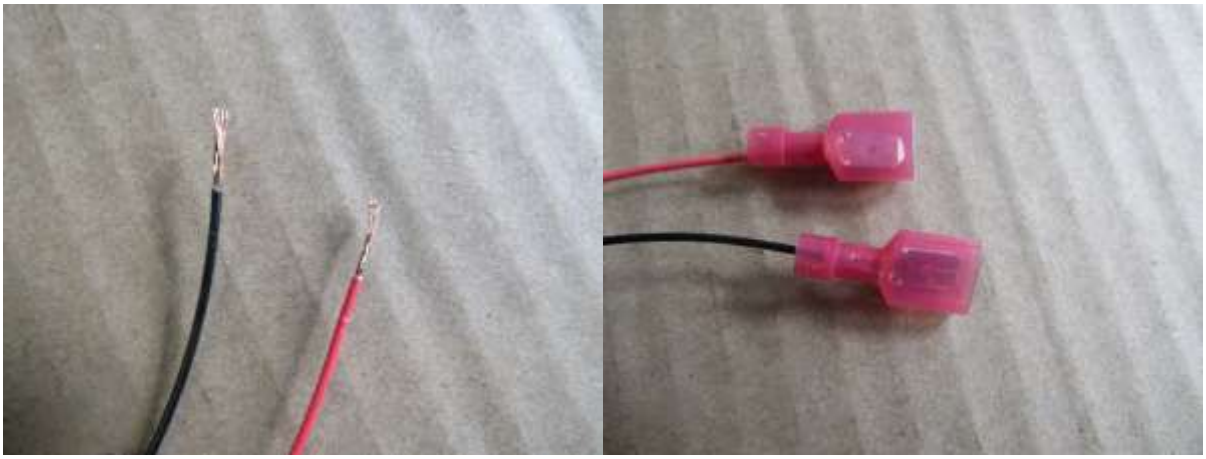
Step 5: Take the green wire and strip about ¼ inch off the end of the wire. Then take one of the red female wire connectors and crimp it onto the end of the green wire. Repeat this process with the white wire.



Step 6: Take the white wire and plug it into the bottom spade on the side of the control box of the compressor. Take the green wire and plug it into the third spade from the bottom up on the control box on the side of the compressor. (Note: You will either have a jumper wire or red/black wires plugged in to these two spades. These will need to be removed in order to plug in the green wire and the white wire.)



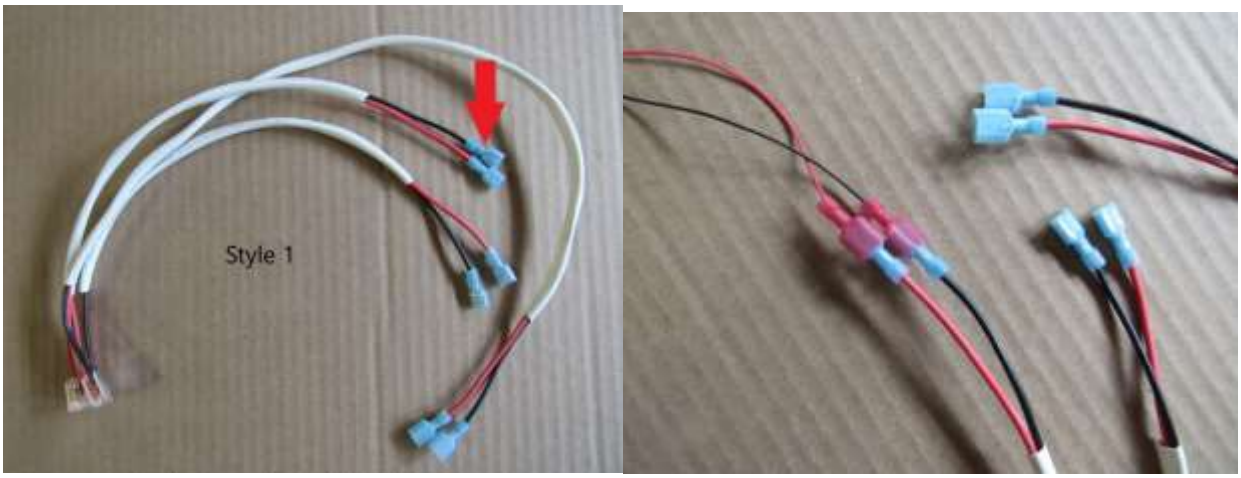
Step 7: Take the red wire and strip about ¼ inch off the end and crimp a red male wire connector onto the end. Repeat this process for the black wire.



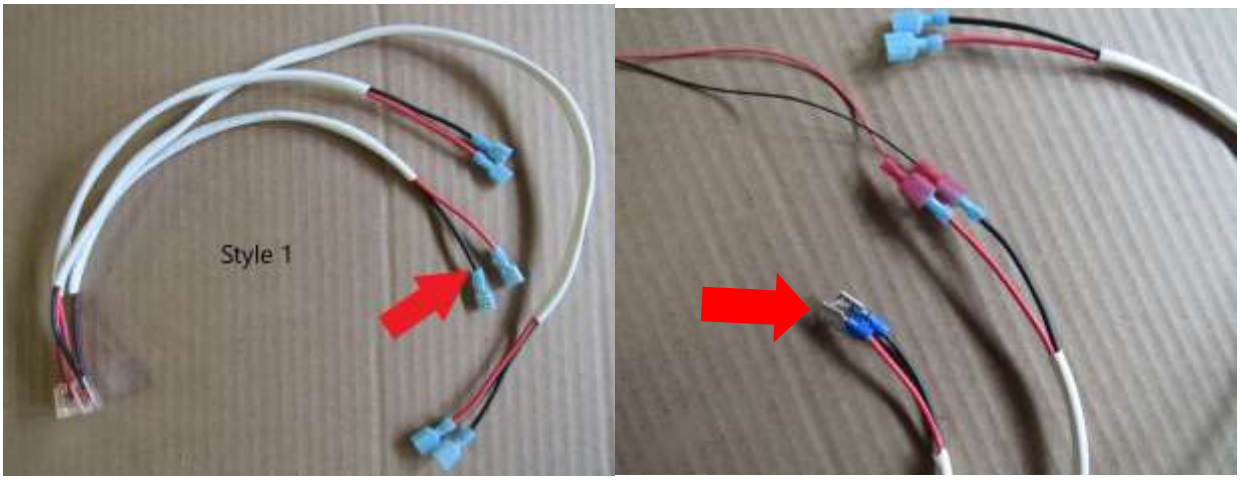
Step 8: If you haven't done so already, unplug all the existing wiring on the back of the fridge from the Norcold or Dometic control board and remove the control board. You will need to keep the 3-way splitter harness. There are two different styles of 3-way splitters. See pictures below to determine which style you have.

<u>Step 9:</u> (If you have Style 1): **Skip to page 8 if you have Style 2.**

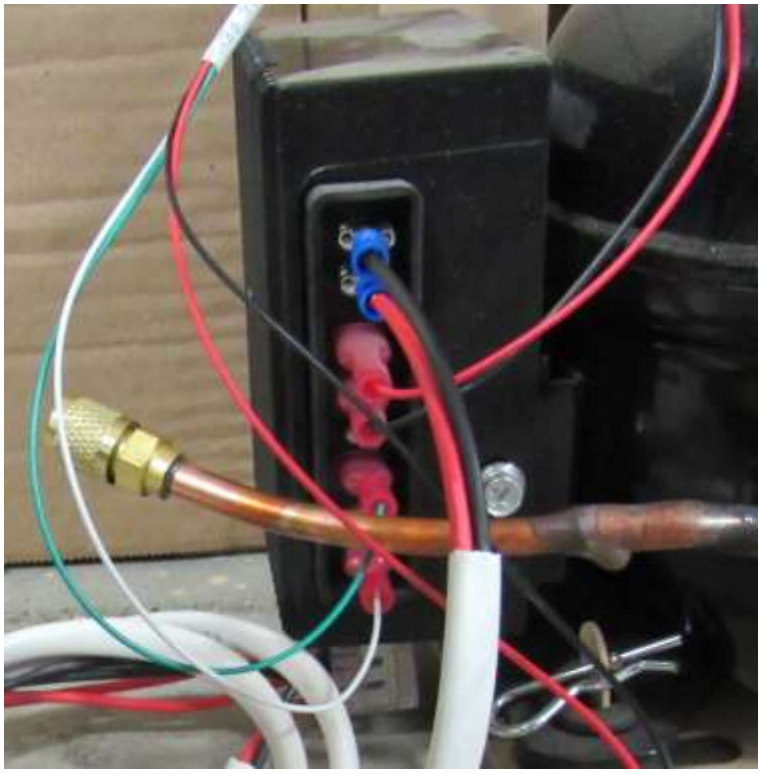
<u>Step 9-A:</u> Take one set of red/black wires with blue female wire connectors from the 3-way splitter. Now plug the red wire from the new controls, with a red male wire connector, into the red wire from the 3-way splitter. Repeat this process with the black wire, with red male wire connector, from the new controls.



<u>Step 9-B:</u> Take the other set of red/black wires from the 3-way splitter with blue female wire connectors. Cut the blue female connectors off the ends of the red and the black wire. Strip about ¼ inch of the ends of both wires and crimp the new silver/blue connectors (supplied) onto the ends of these wires.



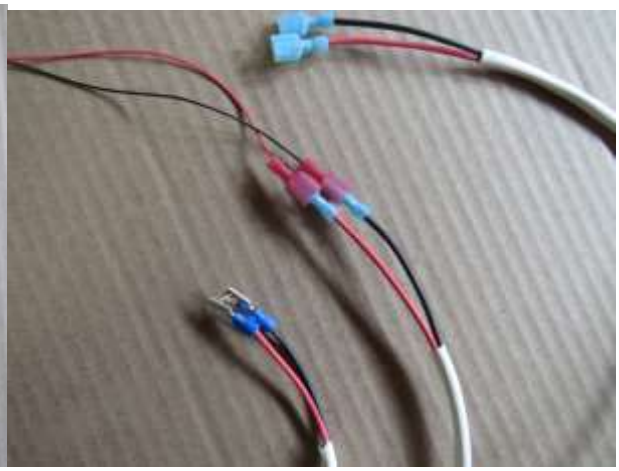
Step 9-C: Then plug the red wire, with silver/blue connector, into the second spade, from the top down, of the control box on the side of the compressor. Plug the black wire into the top spade of the control box on the side of the compressor. (Note: If there are existing red/black wires plugged in to these two spades, they will need to be removed.)



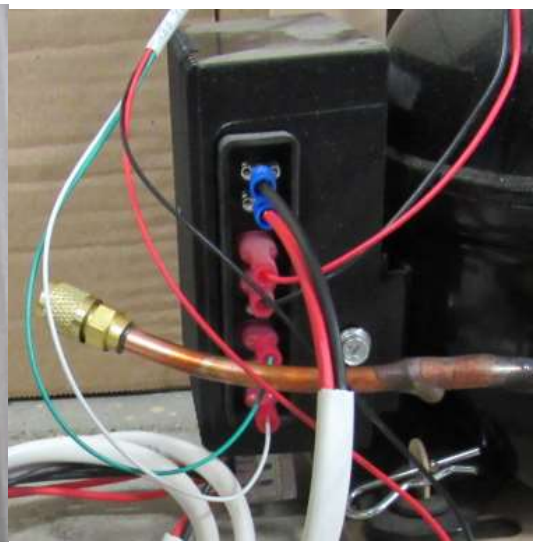
Step 9-D: The third leg of the 3-way splitter will have blue male wire connectors. On Norcold fridges, these wires will be plugged into the 12V wires coming from your coach batteries. The 12V wires for most Dometics will wire into a terminal block behind the fridge. If this is the case, you can cut the blue male connectors off the ends of the wires and strip about ¼ inch off the ends of both wires. Then insert them into the terminal block. Make sure that the red wire goes to the 12V + side of the terminal block and the black wire goes to the 12V – side of the terminal block.

Step 9: (If you have style 2):

Step 9-A: Take the set of red/black wires with blue female wire connectors on the ends. Now plug the red wire, with red male connector, from the new controller and plug it into the red wire, with blue female connector, from the 3-way splitter. Also, plug the black wire from the new controller into the black wire from the 3-way splitter.



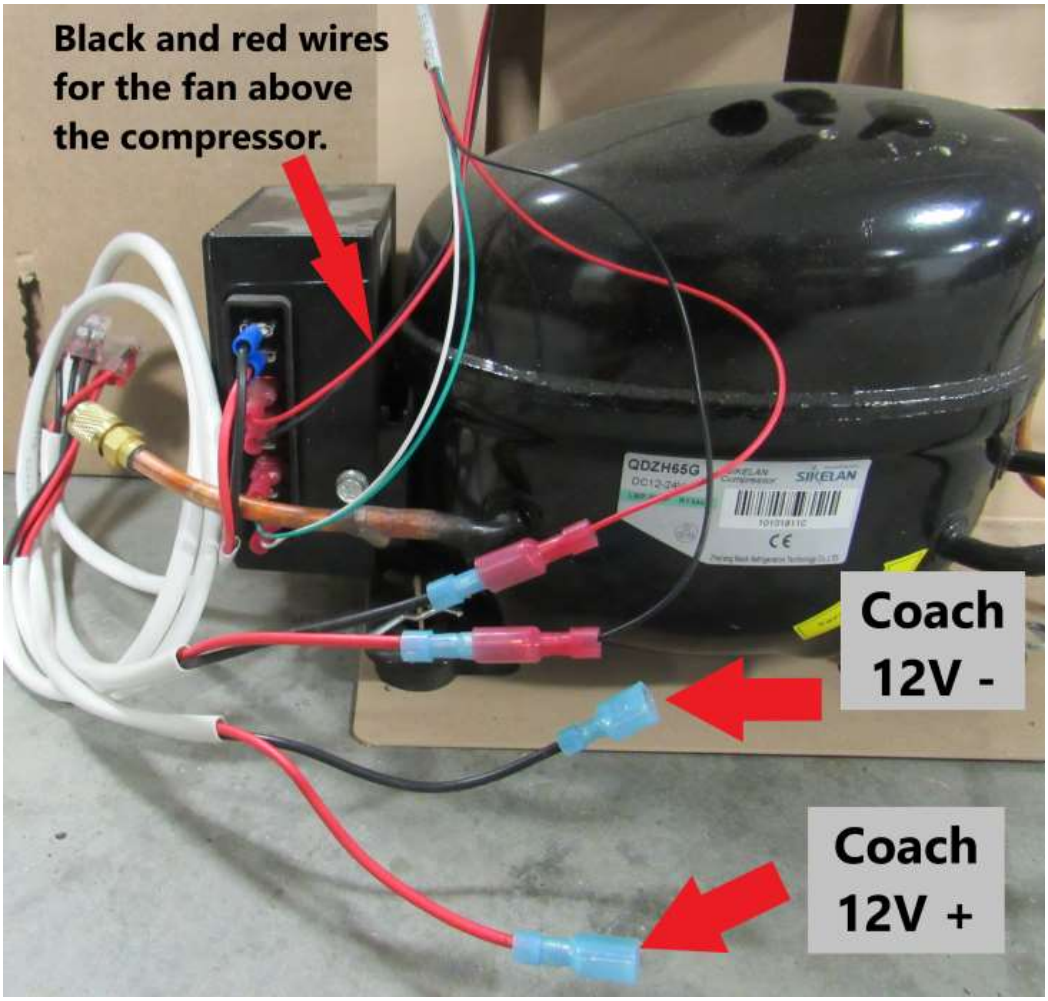
Step 9-B: The other set of red/black wires from the 3-way splitter have silver/blue connectors crimped onto the end. If these are plugged in to the control box on the side of the compressor already, leave them as is. If they were unplugged, the black wire goes to the top spade of the control box on the side of the compressor. The red wire goes to the second spade, from the top down, of the control box on the side of the compressor.



<u>Step 9-C:</u> The third set of red/black wires from the 3-way splitter have blue male spades crimped onto the ends. On Norcold models, these wires get plugged into the 12V wires coming from the coach batteries. Make sure the red wire from the 3-way splitter gets plugged into the 12V + wire from the batteries and the black wire from the 3-way splitter gets plugged into the 12V – wire from the batteries. The 12V wires for most Dometics will wire into a terminal block behind the fridge. If this is the case, you can cut the blue male connectors off the ends of the wires and strip about ¼ inch off the ends of both wires. Then insert them into the terminal block. Make sure that the red wire goes to the 12V + side of the terminal block and the black wire goes to the 12V – side of the terminal block.

Below is a picture of how your wiring should look at the end.

The red wire from the fan above the compressor is plugged into the third spade down and the black wire for the fan is plugged into the fourth spade down.

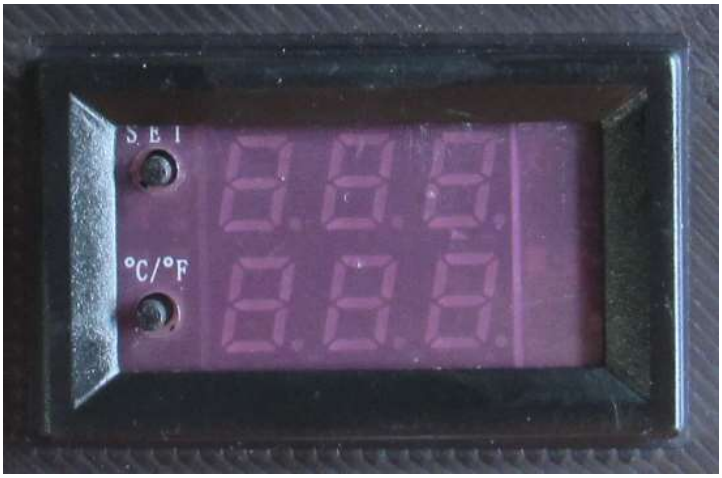


Operating the Controller:

The switch on the front is to turn your fridge on or off. Once you flip the switch to the on position to turn on the fridge, the temp controller will light up, the fans will turn on and the light will turn on as the motion sensor will detect your movement. (After 30 seconds of no movement, the motion sensor will shut the light off.) The blue number (bottom) on the temp controller is what the temp is set to and the red number (top) is the actual temp inside the fridge. The temp is preset to 36 degrees but you can adjust it up or down using the directions on the next page. After you have the temp controller set to your desired settings, there is nothing more you need to do as this controller will tell the compressor when to turn on or off.

Low Ambient Heat Lamp:

On the back side of the control assembly there is a little switch. By flipping this switch to the up position, it bypasses the motion sensor and keeps the light bulb turned on constantly. If you are using your fridge in cold weather (Usually 40 F or lower), your compressor doesn't have to run very long in order to cool the fridge box down and this will cause the freezer to only stay around 25-30 degrees. Turning the light bulb on constantly will give off a little bit of heat into the fridge box which will cause the compressor to run longer and bring your freezer temp down to 0 to 10 degrees. Once the weather warms up or you move to a warmer climate, flip this switch back to the down position so that the light bulb is motion activated again. If this switch is in the up position while you are in warm/hot weather, you will cause the compressor to run longer and work harder than it needs to.



Set Temp

Press “SET” (top button) briefly, bottom blue number starts flashing. While it is flashing you can adjust temp up using top (SET) button or down using bottom (*C/*F) button.

Enter Diagnostic and Mode settings:

Press and hold top (SET) button for approx. 4 seconds. P0 will flash first. You can then scroll through code settings to the desired one needed. Once the desired code is reached, hold both buttons in for 3 secs or until bottom blue letter or number will start to flash. Then use top or bottom button to adjust up or down in order to achieve desired setting. Once reaching desired setting, let sit for approx. 3 seconds and number will stop flashing and the setting will be saved.

Code meaning:

P0 = Lets you switch between heating (H) or cooling (C). You want to make sure it is set to cooling (C)

P1 = This setting determines how far above the set temp the actual temp in the fridge can rise to before the compressor turns on, preset for 2.5

P2= Not needed or used

P3 = Not needed or used

P4 = If actual temp inside the fridge box does not match the top number on the thermostat, this setting can be used to calibrate up or down to make the thermostat temp match your actual box temp. This setting rarely needs adjusting.

P5 = This setting can be used to set a delay for turning on the compressor. This setting should not need to be adjusted.

P6 = This setting can be used to set a high temp alarm.

P7 = This setting is used to switch between Celsius (CH) or Fahrenheit (FH). It is preset to Fahrenheit.

P8 = This setting can be used to reset the controller to factory settings. Not recommended to use this setting.