



Whether you're a contractor, architect, builder or homeowner, creating the perfect indoor environment has always been a challenge. ThermaRay, the world's #1 name in thermal comfort systems introduces you to the ultimate heating solutions. Please take the time to read this installation guide carefully before you begin. Remember, accurate measurements are the key to success for a proper installation

**Standard Package Includes:**

- 1) ThermaRay Controller
- 2) 6 screws (2 painted white)
- 3) 4 washers
- 4) 1 Box Ring
- 5) 240/120 volt power module with built in Ground Fault Circuit Interrupter (GFCI)
- 6) Extended double gang box (Canada Only)

**Not Included:**

- 4 Wire Nuts
- For US applications please use a double gang masonry box.

**COMFORT CONTROLLER  
Line Voltage Installation Guide**

**FOR USE ON:**

- Heating only 240/120 Double Pole Applications with Power Module.
- All ThermaRay Radiant Heating products that will be connected to 120 or 240 volt power source. Contact factory if connecting to other voltage heaters for instructions.

**ELECTRIC RATING:**

- 16 Amp at 240/120 VAC
- 3840 Watts at 240 VAC (Non-Inductive)
- 1920 Watts at 120 VAC (Non-Inductive)

**TEMPERATURE DIFFERENTIAL**

- Adjustable Range

**SENSORS:** By the time you are ready to connect your controller, the sensors (if applicable) should already have been in-stalled. Review the installation instructions for your particular ThermaRay Radiant Heating System for more information re-garding the sensors.

**INSTALLATION**

**WARNING**



- This controller, when used with the power module is a line voltage (240/120) control. Do not install it unless you are completely familiar with house wiring. If improperly handled, there can be a risk of electric shock hazard which may cause serious injury or death.
- The ThermaRay Comfort Controller is rated for normal full load current on a dual residential 20 Amp circuit breaker or fuse block. Do not use on circuits protected by higher-rated over-current protection devises. Some sustained fault conditions can cause product failure.
- Do not connect to voltage different from device rating.

**CAUTION**

- Disconnect power supply before making wire connections to prevent electric shock or equipment damage.
- All wiring must comply with applicable codes and ordinances.
- Maximum load for this thermostat **MUST NOT EXCEED** specified rating otherwise potential fire hazard exists.

**NOTE:** The power module has it's own built in Ground Fault Circuit Interrupter (GFCI). Therefore, do not install a GFCI breaker on the circuit as this will cause the Controller to trip, thereby preventing your heating system from operating.

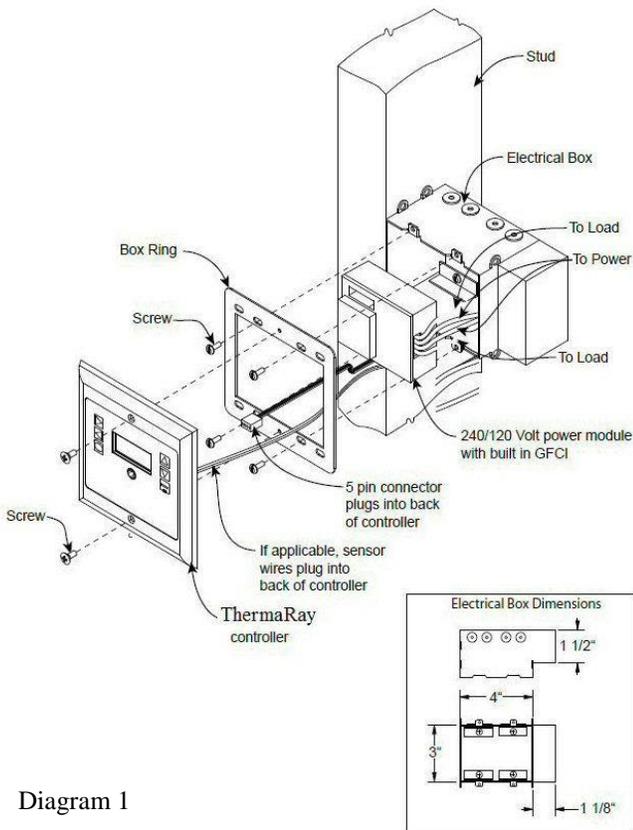
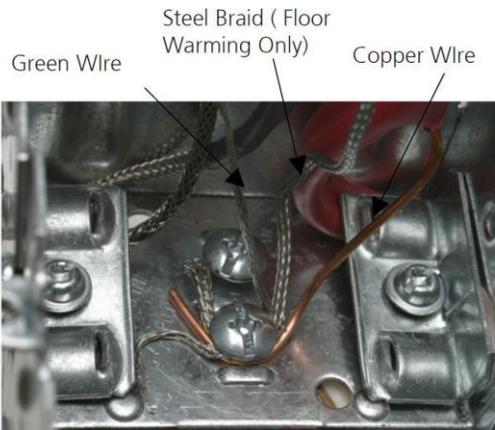
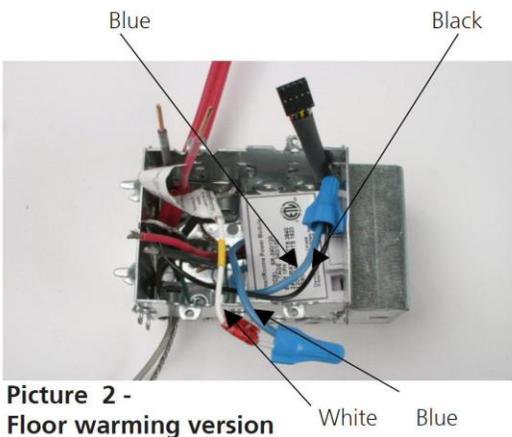


Diagram 1

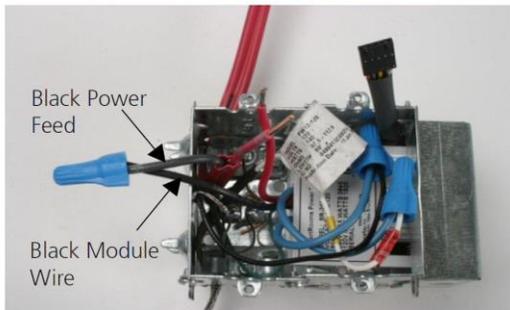
## CAUTION: MAKE SURE ALL POWER IS OFF



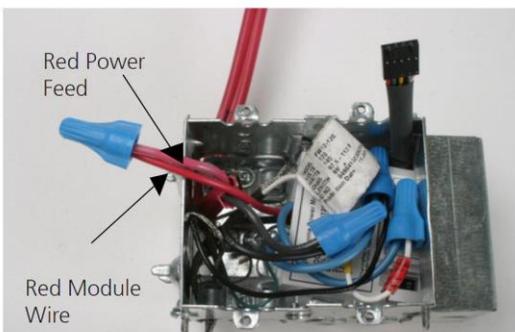
Picture 1 - Floor warming version



Picture 2 - Floor warming version



Picture 3.



Picture 4

The power module has 2 blue wires that will be connected to the load. (In a floor warming installation the load is the two floor warming lead wires.) The small green wire is a ground wire and will be connected to a screw in the electrical box. The red and black wires will be connected to the two power (line) voltage wires (usually red and black in colour for 240 volt and white and black for 120 volt).

**Check the voltage switch to ensure it is in the correct position (120 or 240 volt) based on the voltage it is connected to. The controller is factory set to 240 volt. To set the controller for 120 volt, move the switch to the 120V position. Connecting the controller to a higher voltage will void the warranty.**

**Step 1-** Strip all the wires needed to expose enough bare wire to make good connections.

**Step 2 -** Take the green wire from the power module, (if applicable the two steel braids from the floor warming lead wires), and the ground wire from the power feed and connect them all to one or more of the screws in the electrical box. It is not necessary to connect all of the wires to the same screw. As long as all of the wires are connected to a screw in the box, the system will be grounded. (See picture 1)

### Floor Warming

**Step 3 -** Take one blue wire from the power module and connect it to the white lead wire from the floor warming system using a wire nut. Make sure the two (2) wires are securely connected. (Do not use electrical tape in place of a wire nut.) (See picture 2)

**Step 4 -** Repeat step 3 except connect the other blue wire to the black floor warming lead wire. (See picture 2)

**Step 5 -** Take the black wire from the power module and connect it to the black 240 or 120 volt power conductor. Use a wire nut to connect the two (2) wires. (See picture 3)

**Step 6 -** Repeat step 5 except connect the red power module wire to the last remaining power conductor. (Red to red for 240 volt, red to white for 120 volt) (See picture 4)

All wires should now be connected. All the ground wires should be attached to a ground screw.

### Ceiling or ETS Installation

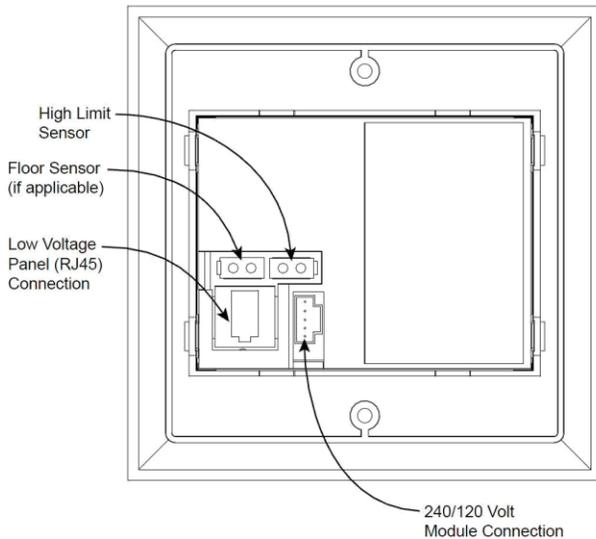
**Step 3 -** Take one blue wire from the power module and connect it to the red ceiling (load) wire using a wire nut. Make sure the two (2) wires are securely connected. (Do not use electrical tape in place of a wire nut.) (See picture 2)

**Step 4 -** Repeat step 3 except connect the other blue wire from the power module to the black ceiling (load) wire.

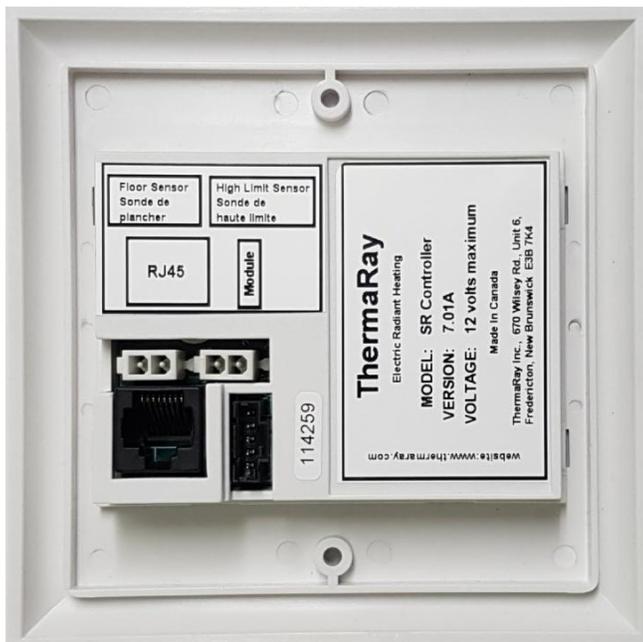
**Step 5 -** Take the black wire from the power module and connect it to the black line power conductor. Use a wire nut to connect the two (2) wires. (See picture 3)

**Step 6 -** Repeat step 5 except connect the red power module wire to the last remaining conductor. (Red to red for 240 volt and red to white for 120 volt) (See picture 4)

All wires should now be connected.



Back view of Face Plate



LR 1023

**Petra Building Solutions Inc.**  
**Exclusive Distributor**  
 Toll free: +1 (888) 992-2889  
 Montreal: +1 (438) 388-7700  
 Toronto: +1 (647) 849-5629  
 Ottawa: +1 (613) 869-7425  
 E-Mail: info@petrabuildingsolutions.com  
 Web: www.petrabuildingsolutions.com

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**Step 7** - Slide the box ring into place and secure it to the electrical box using the 4 long screws and washers supplied. (See Diagram 1 on the front page.)

**Step 8** - The power module simply snaps into the back of the controller face plate with the 5 pin black connector.

**Step 9** - Insert the sensor (s) (if applicable) in the back of the ThermaRay Controller. (See Diagram 2 as to the correct sensor placement).

**Step 10** - Attach the controller to the box ring using the two (2) white-painted screws supplied. The controller should be flush to the wall.

**Step 11** - Turn on the power at your service entrance panel.

**WARNING:**

To avoid the risk of fire, all connections to aluminium conductors must be made using approved CO/ALR solderless wire connectors.

**WARRANTY**

ThermaRay Inc. One (1) Year Limited Warranty

ThermaRay Inc warrants the controller is free of defects in material and workmanship after proper installation for a one (1) year period from the date of installation. During this period, ThermaRay Inc. will replace or repair the controller without charge if it has been used under normal conditions. This warranty does not cover delivery or installation costs. The warranty does not apply if poorly installed or damaged after installation. ThermaRay Inc. will not compensate for consequential damage, direct or indirect resulting from the failure of the controller. All other representations, warranties and conditions, whether oral or written, express or implied, statutory or otherwise are expressly excluded. The defective controller must be returned to the place of purchase or sent prepaid to ThermaRay Inc.



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