

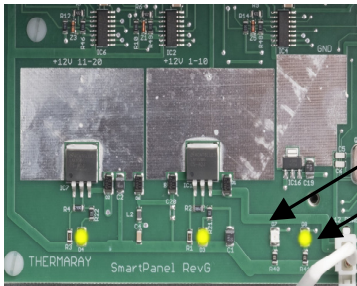
## ThermaRay DISTRIBUTION PANEL PROGRAMMING INSTRUCTIONS

Ensure there is 120 volt power to your ThermaRay Distribution Panel (SRDP). This should not be a shared breaker. There is power to the SRDP when the LED next to the transformer is on. It is very important that the circuits are labeled so you can easily program the SRDP.

### Setup

1. Make sure no thermostats are connected to the SmartRooms Distribution Panel (SRDP) until ALL programming is done.
2. Find the Test Plugs supplied with the SRDP. One is labeled "P" for PRIMARY, one is labeled "S" for SECONDARY, and two green plugs for Time-of-Use and Dual Fuel programming.

At the top of the panel where the RJ45 jacks are, is the communication panel. You will see 3 green lights. One green light should be flashing. This indicates the panel is in normal operating mode. This is known as the "Run light".



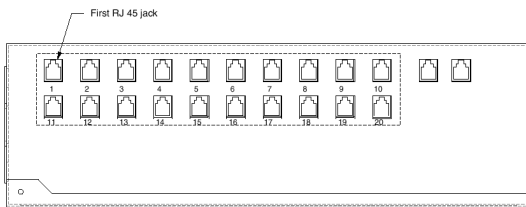
TEACH  
LIGHT

RUN  
LIGHT

The SRDP is shipped from the plant with all the relays having been cleared. In effect none of the relays should be programmed. However, to be sure, we suggest that you clear all the relays in the panel before programming the relays.

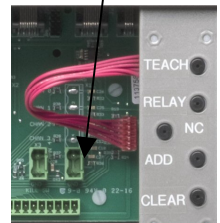
### Starting with a New Panel - Clearing all relays.

3. Insert the "P" test plug into the first RJ45 jack.



4. Press and hold the TEACH and CLEAR buttons simultaneously. The green flashing light R41 (also known as the Run light) will briefly go solid and then go out and the light next to it (R40) will come on and be solid. This light is the Teach light. You should now have 3 solid green lights. Once you have 3 solid green lights, release the two (2) buttons.

TIME OF USE  
RECEPTACLE



KILL RECEPTACLE

**NOTE: TO DISCONNECT POWER TO SRDP SWITCH OFF AT 120 VOLT BREAKER**

5. To clear all relays,
  - a. Press and hold the CLEAR button first, (do not release) then
  - b. Press the ADD button and hold for 5 seconds. The Teach light will flash briefly.
6. Release the buttons. The Teach light will stay on briefly then it will flash and then jump to the Run light. The Run light will stay flashing indicating that you have cleared all relays. Remove the "P" test plug.

## **Teach Mode**

7. Insert the "P" test plug into the jack for the room you wish to program. For example, if the kitchen is being controlled by the 3<sup>rd</sup> RJ45 jack and this is the room you want to program the relay for, you insert the "P" test plug into the third (3<sup>rd</sup>) jack.. CAUTION: Use only one test plug at a time and do not plug in any thermostats until all programming has been done..
 

Hint –

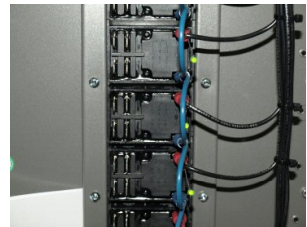
  - a) The "P" test plug is always used.
  - b) The "S" test plug is used only when you have one thermostat controlling two systems independently.
    - Floor & Ceiling ("P" is for floor, "S" is for ceiling)
    - ETS (Earth Thermal Storage) & Ceiling ("P" is for ETS, "S" is for ceiling)
    - ETS & DHW (Domestic Hot Water) ("P" is for ETS, "S" is for DHW)
8. Ensure both green test plugs are not plugged in..

## **Enter Teach Mode**

9. Press and hold the TEACH and CLEAR buttons for 3 seconds. The Run light will stop flashing and the Teach light next to it will become solid. The Run light is now off. All green lights should be solid indicating you are in TEACH MODE.
10. Release the buttons.

## **Programming a Relay**

Each relay has a green LED light next to it. During programming, the LED light will turn on so that you know which relay you have chosen.



11. While in TEACH MODE, press the RELAY button. An LED light will turn green next to a relay. Pressing the RELAY button again will cycle to the next non-programmed relay.
12. When you light the LED for the relay you want to program, press the ADD button. Then press the TEACH button. That relay is now programmed.
13. You can add multiple relays to a thermostat (RJ45 jack). For each relay you want:
  - a. Press the RELAY button until the desired relay is lit, then press the ADD button. Repeat this step until all desired relays are programmed for this RJ45 jack.
  - b. Once you have added all the desired relays for this jack, press the TEACH button.
14. This will return you to RUN mode.
15. Move the "P" test plug to the next desired RJ45 jack and repeat the above programming steps 7-14 until all relays are programmed.

Note: Only relays that are not programmed can be selected. During programming, should you encounter a previously programmed relay, the software will automatically skip/bypass this particular relay. You will not be able to program it unless you clear the relay. See how to clear your relays in the **Clearing a Relay** section.

Note: If the Teach LED light goes out and the Run LED light starts flashing, you may have not inserted the Test plug correctly. There must be only one RJ45 test plug inserted in order to enter Teach Mode.

### **Completing Teach Mode**

16. Press the TEACH button when you are done adding all of the relays for that RJ45 jack. This will result in the green Run light flashing once again.
17. While the "P" test plug is in the jack all the relays selected for a specific thermostat (RJ45 jack) will turn on one at a time.
18. Now remove the test plug. The LED lights on the relays selected will turn off.

#### **HINT!!**

Now would be a good time to record the rooms that are mapped to a specific relay. There is a form on the panel door for that purpose.

### **One (1) Thermostat for Two (2) Heating Systems**

19. If you have one (1) thermostat controlling two (2) heating systems, you must first exit Teach Mode by following steps 16-18 in the **Completing the Teach Mode** section. Then,
  1. Remove "P" test plug.
  2. Insert "S" test plug (into the same RJ45 jack).
  3. Repeat steps 7-18..

### **Clearing a Relay**

If a relay is already programmed and you want to use this one, you have to clear the program before you re-program it. NOTE Make sure no thermostats are plugged in.

20. Insert the "P" test plug into the RJ45 jack that you wish to clear. For example, if the kitchen relay is being controlled by the 3rd RJ45 jack and this is the room you want to re-program the relay for, you insert the "P" test plug into the third (3<sup>rd</sup>) jack.
21. Enter Teach Mode (Steps 9-10).
22. The relay(s) programmed for this jack should light up.
23. Press the CLEAR button and then TEACH. This will clear the relay(s).
24. Re-start at the section **Teach Mode** Step #7 and follow the steps on how to Program a Relay.

### **Advanced Option**

This option is used for a remote shutdown of the Panel using the green test plugs and the utility connecting a switch This is often the case where a power utility offers off-peak (time of use) or Dual Fuel with reduced electric rates as part of their program, they shut down the power to the heating system. Before you can program the green receptacles, you will need to know how the utility has set their switch. "Normally Open" (the utility closes their switch closes when the relays need to be turned off) or "Normally Closed (the utility opens their switch when relays need to be turned off.).

### **Teaching the Time-of-Use Receptacle**

ADD ONLY THE RELAYS THAT CONTROL THE EARTH THERMAL STORAGE SYSTEMS

25. Make sure there are no thermostats or test plugs plugged into the SRDP
26. Insert a jumper wire on the terminals on one green test plug. A jumper wire is any small bare wire readily available on the job site.
27. Insert the green test plug into the Time-of-Use receptacle. The green test plug acts just like the "P" and "S" test plugs so do not insert any tests plugs or thermostats into the SRDP until you are finished.
28. Follow steps 9-13 adding only the relays for Earth Thermal Storage circuits.
29. Once you have added all your relays for Time-of-Use receptacle you must decide on whether the receptacle is normally open (the utility closes their switch when the relays need to be deactivated) or normally closed (the utility opens their switch when relays need to be deactivated).
30. If the receptacle is to be normally open (the default), press TEACH to complete your programming.
31. If the receptacle is to be normally closed, press and hold the N.C. button and then press the TEACH button.
32. Release the buttons to finish and return to Run Mode.
33. Remove the green test plug from the receptacle and then remove the jumper wire. Connect the green test plug to the utility's switch and then insert the wired plug into the Time-of-Use receptacle.

**Teaching the KILL SWITCH INPUT (REMOTE CONTROL FOR DUAL FUEL USE) Dual Fuel is a program some utilities offer to divert your electricity when needed. You must have a secondary non electric heating system for this to apply.**

34. Make sure there are no thermostats or test plugs plugged into the SRDP.
35. Insert a jumper wire on the terminals on the second green test plug.
36. Insert the green test plug into the Green Kill Receptacle (see picture on page 1). Do not insert any plug in the time of use receptacle. Follow steps 28-32 adding all relays.
37. Remove the green test plug from the receptacle and then remove the jumper wire. Connect the green test plug to the utility's switch and then insert the wired plug into the Kill Receptacle..

Power Failure:  
Your SRDP's programming memory is designed to outlast a 10 year long power failure.



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