This is a description of what the "TestingCode" Arduino sketch will do for the Portlet.

When you plug the Portlet into the wall, you'll see:

Begin Testing!
Press S1

Press S1 to advance to the next step

Next is a series of screens to make sure each button is working correctly. As you push each of the buttons S1, S2, S3, and S4 the screen confirms that the button works and asks that you press the next button in the sequence.

S3

S2 works!
Press S3

S4

S3 works!
Press S4

The final screen of the button testing sequence confirms that S4 worked and asks that you press S1 to move on to the next sequence

The next sequence tests that the two outlets are working correctly.

The screen will display:

To test outlet 1
press S4

Go ahead and press S4 to continue

Both outlets are controlled by mechanical relays. Thus when they are activated (turned on) there is an audible "click" sound. Likewise when the relay is deactivated, there is another audible click as the mechanical components go back to their original position.

Outlet 1 is on the left as you look at the device. The actual relay is located in the upper left hand corner of the device. If you want to confirm that the outlet is indeed turning on and off during this stage, you can plug a simple light or other device into Outlet 1 and verify that it turns on or off.

To check that things are correctly wired it is enough to confirm that there is a clicking sound when you press S1 and another click when you release S1.
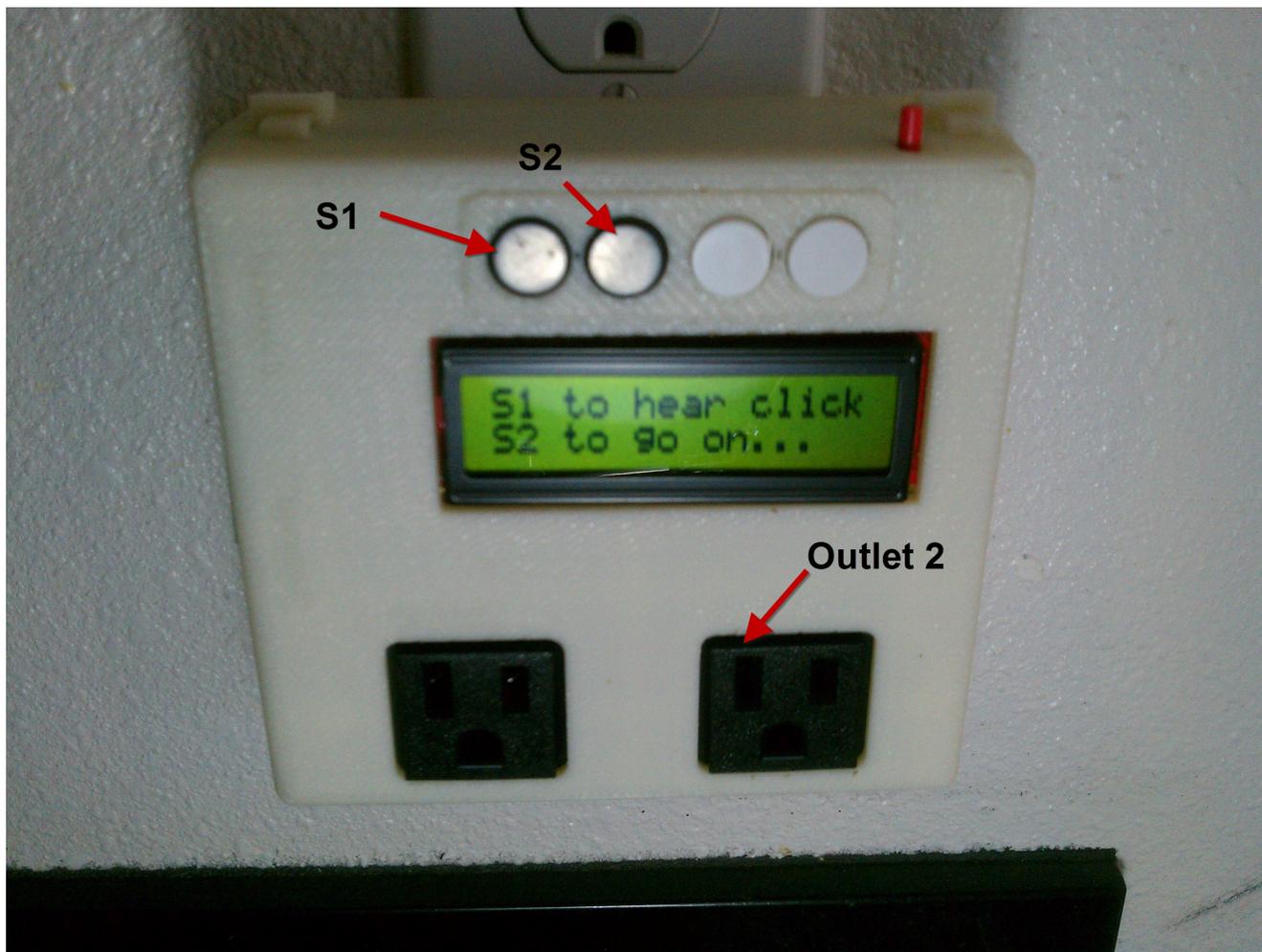
When you are ready to move on to testing Outlet 2, press S2

To confirm that you are ready to move on and test Outlet 2 press S4

Use S1 to toggle the relay for Outlet 2 and confirm that there is a clicking sound. When you are ready to move on press S2

The next functionality that gets tested is the backlight. The backlight can be controlled by the software so that it can be used as an added visual indicator for the user.

Confirm that you are ready to move on by pressing S4

With everything working correctly, the backlight will turn on while S1 is pressed and then will turn off when S1 is released. Once satisfied that it is working, press S2 to continue.

Next will be to test the Thermocouples. Plug a thermocouple into the "Thermo 1" socket and then press S4 to continue

Note: You're welcome to plug the thermocouple in on the next step. It won't hurt the circuitry, just will give you strange readings when there is no thermocouple plugged in.

Wait for the temperature reading to settle. If you've just plugged the thermocouple in this could take a few seconds. Now is the time to verify that the number is within the realm of reason. The testing software is setup to give an approximate Farenheit scale reading.

But it will be up to you to fine tune this reading! Fine tuning is done by adjusting the software. This is to make sure that no one tries to fiddle with the hardware on a device that is plugged into the wall.

Checking the temperature reading with the thermocouple dangling in air will let you compare the reading against your thermostat. And then using a boiling cup of water (which should be around 200°F) will give you a second data point to help fine tune the software settings.

When satisfied press S1 and then go directly to testing Thermo 2.

Plug the thermocouple into Thermo 2 and wait for the number to settle. Then again satisfy yourself that Thermo 2 is working approximately correctly.

Once satisfied, press S1 to wrap things up.
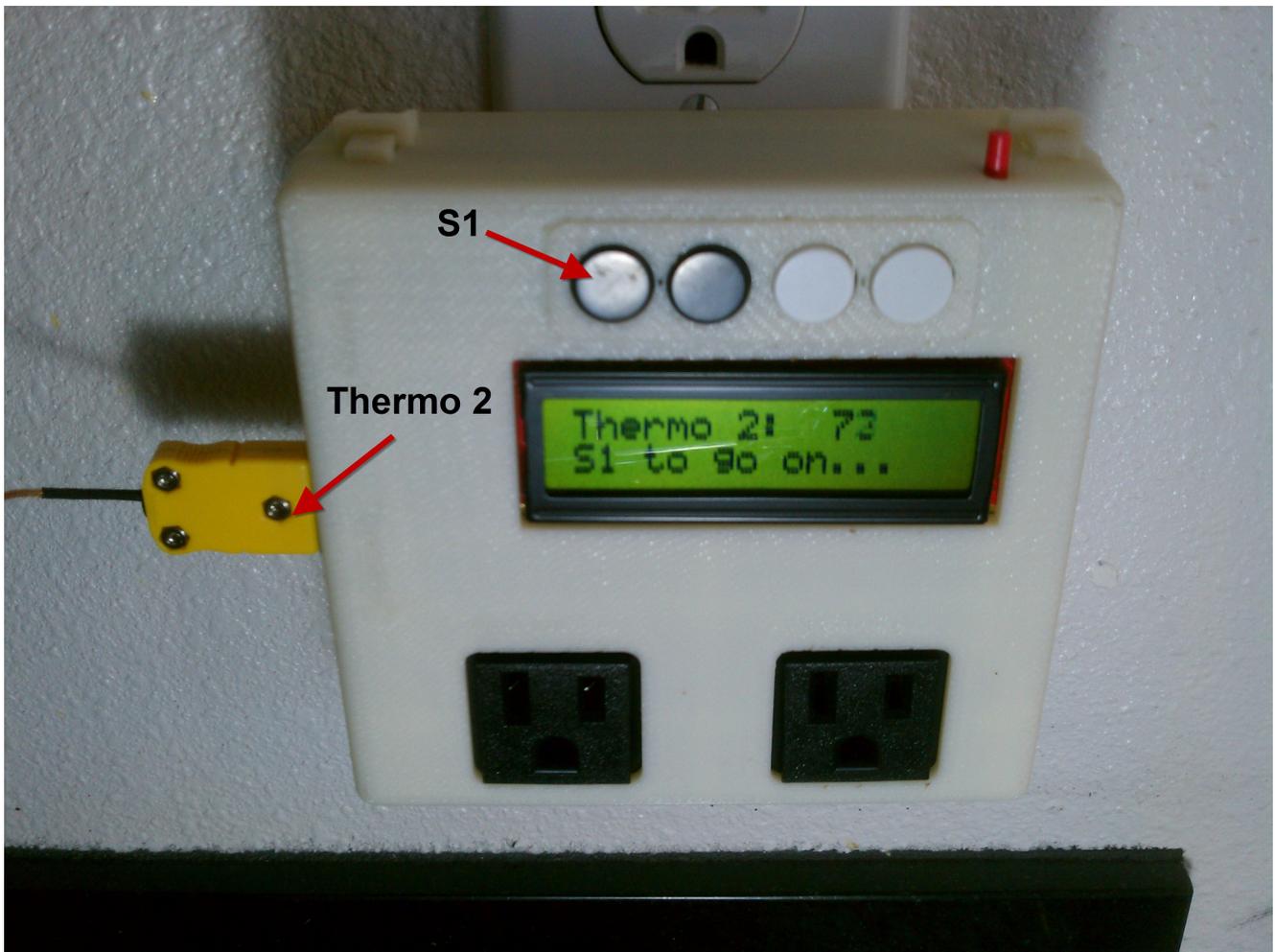
The last thing to test is the Reset button! Pushing the Reset button will start the whole program over again