ENSE 481 – Winter 2025
Matthew Ross 200265265
Test Plan

Test Methods:

-Test for overshoot of the target temperature by using a reference temperature sensor as well as the thermocouple reading.
-Test for proper operation of the buttons and the correct display. This can be done by normally operating the buttons and visual inspection.
-Test the thermocouple with a reference temperature sensor to make sure it is correct.
-Test the relay for proper operation and that it fails safe. Test by disconnecting or shorting the control wires.
-Testing code to eliminate undefined or unintended operation scenarios.

Test Equipment:

-"Kill-a-watt" device to see the realtime power usage of the hotplate in watts.
-ADALM2000 for oscilloscope.
-Multimeter for basic testing.
-CubeIDE for software.

Test Conditions:

Multiple test conditions such as cold start, hot start, warm start, and disturbance for the primary functionality. The overall system, the buttons and display will be tested in a normal indoor environment. The system will be designed and tested for 120V operation only but the system will have the hardware capability to work with 240V as well.