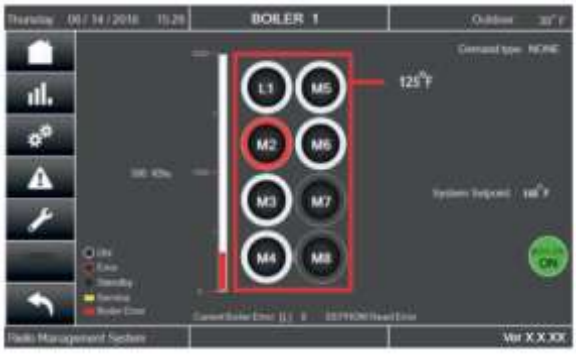
Array Pre-start up Check List:

1. Check gas pressure
    a. Set static boiler supply pressure to 8-9” w.c. for Natural Gas
    b. 2 PSI gas pressure should have roughly 10 feet of pipe before boiler
    c. Are gas pressure gauges installed before and after regulators
2. Boiler pumps may be stuck after sitting dry for a few months.
    a. Isolate boiler module. Drain using both the hose spigot and the small black drain valve underneath the module near pump.
    b. Pull pumps apart to spin impeller before filling with water, or
    c. Knock base during pump operation to break free.
    d. Pump fuses may blow or motor overheat if left stuck too long.
3. Check required power voltages
    a. Neutral wires must we ran
    b. Make sure the 3 phases are balanced
    c. 208-480 = L1 to common, L2 to common, L3 to common. Meter set on AC voltes
4. Check wall wiring connections on the front of each heat exchanger
5. Fill boiler full of water per fill instructions
    a. Air can be trapped inside the boiler if not properly evacuated.
6. Verify system pressure is minimum 12 PSI
7. System supply sensor must be installed and wired to boiler
8. Verify venting inside the boiler cabinet is all attached and put together
9. Check Venting and Intake Piping. Take a picture of the terminations.
    a. Exhaust should be CPVC or Stainless Steel
    b. Intake can be PVC
    c. Is the weight of the vent supported off of the boiler.
        i. Make sure internal common flue was not pulled up
    d. Make sure all internal flue pieces are tight and secure

Starting the Boiler:

1. Shut all gas valves
2. Power on main disconnect
3. On the touch screen, shut off the boiler



3. Turn Boiler Off Here.

This will take away boiler demand, keeping boiler from operating

Starting the Boiler:

1. Go to & push MODULE TEST
2. Open Gas Valve to Module
3. Bleed Gas Lines
4. Push IGNITION POWER
5. Verify pump GPM is around 25 GPM
6. After boiler ignites,
    a. Push HIGH POWER
7. Let boiler operate for 3 minutes
    a. Adjust to 5% O2
8. Push to LOW POWER
    a. Adjust to 5% O2
    b. Record readings
9. Verify HIGH POWER
    a. Record readings
10. Verify flue check valves are installed and working correctly.
11. STOP TEST
12. Go to next Module
13. Once completed, verify LWCO AND HIGH LIMIT for each module.
14. Compete Start-up Report and CSD-1 for <u>Each Module</u>

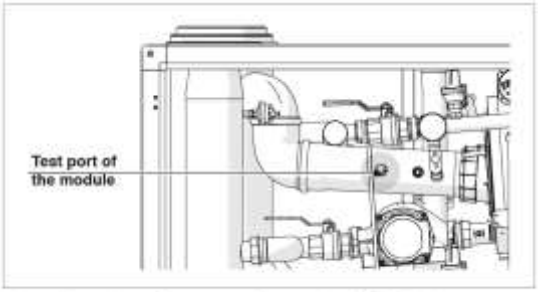
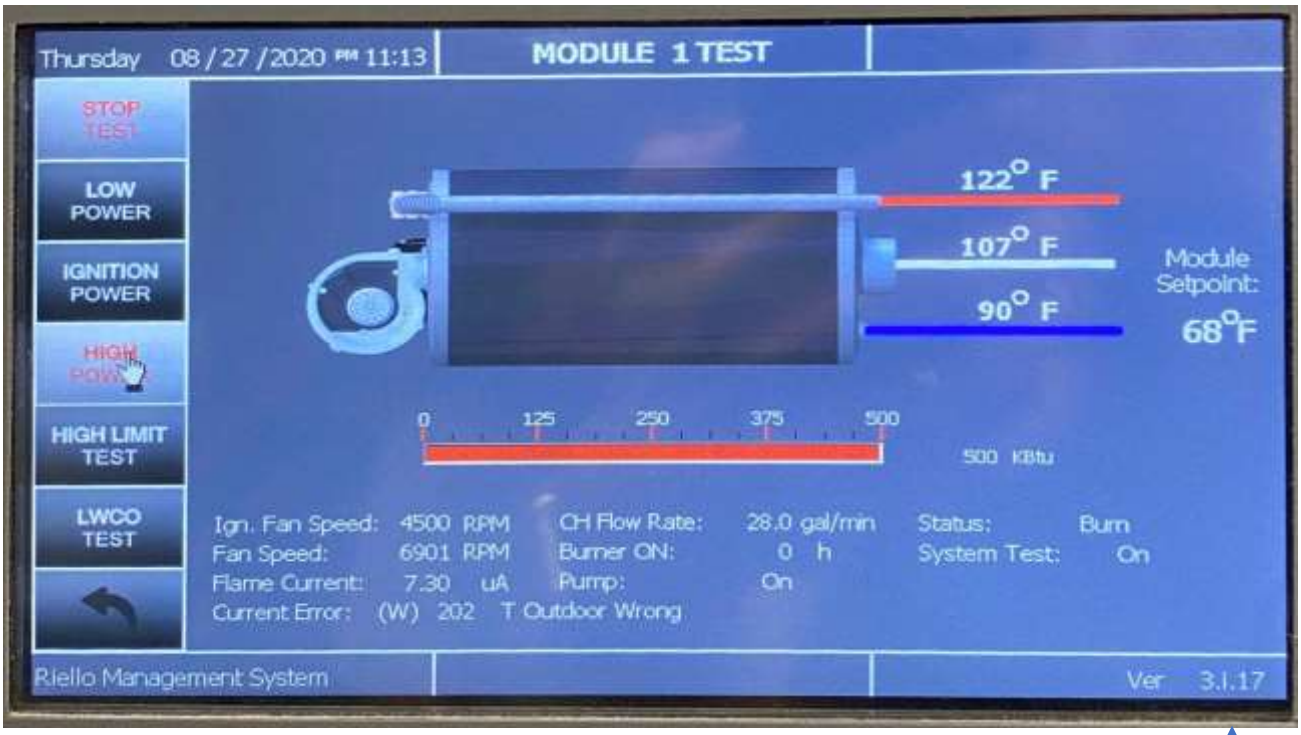
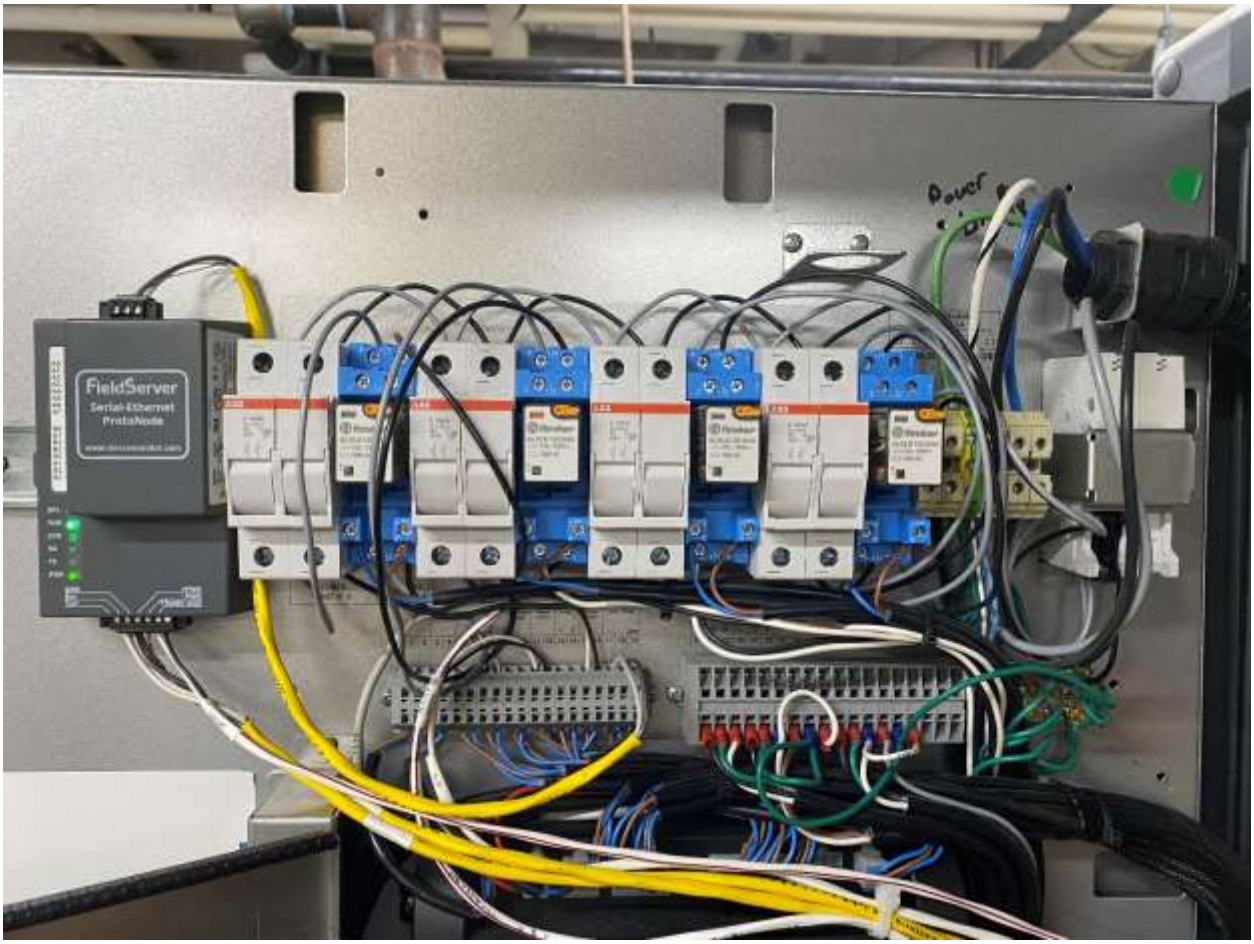


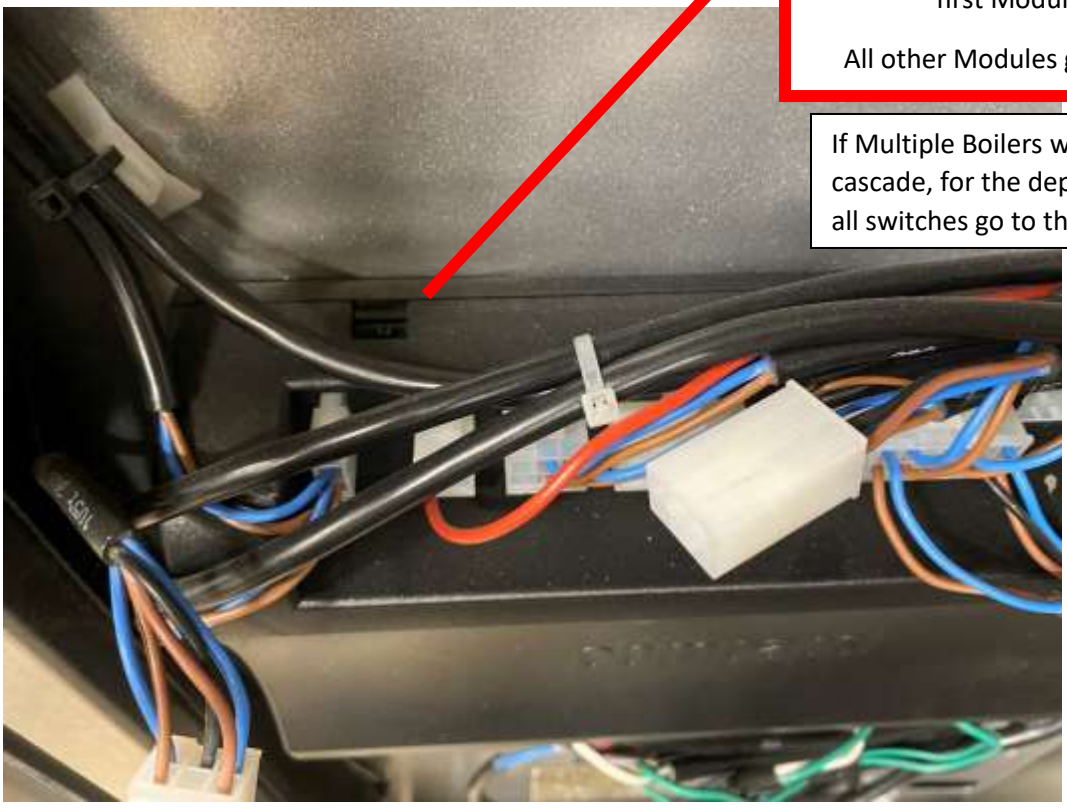
Fig. 19 *Test Port for Combustion Analysis (available on each individual heat exchanger)*



Verify that the touchscreen shows Ver 3.i.17. for Version 2 Boilers. If not, this must be updated.


FieldServer
Serial-Ethernet
ProtoNode

Module Dip Switches



This switch goes to the Left for the first Module only.

All other Modules go to the Right

If Multiple Boilers wired in cascade, for the dependent boilers, all switches go to the right.