

# Quick Startup Guide

for use by a licensed professional heating contractor



## ⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause severe personal injury, death, or substantial property damage. For assistance or additional information, consult a qualified installer or service agency. Read Installation, Operating and Service Instructions carefully before installing.

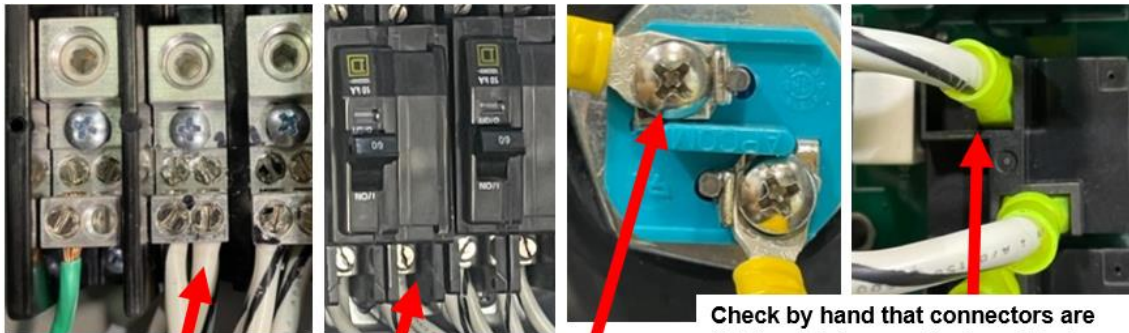
**Product is entirely electric and does not require venting or combustion adjustments.**

### Applicable Codes

1. Use adequate code compliant power wiring (See 4 below).
2. Boiler "Power Block" is UL and CSA listed for copper and aluminum wire in U.S.
3. Canadian codes do not allow aluminum wire.
4. Provided flow sensing switch is UL 353 listed. Flow switch is important to protect the boiler. **Do Not Bypass Flow Switch.** Boiler is shipped with LWCO connection jumped.
  - UL 834 Standard for Heating, Water Supply and Power Boilers—Electric allows a flow switch in lieu of a LWCO for this type of boiler.
  - ASME BPVC IV and ASME CSD-1 also allow a flow switch in lieu of a LWCO for this type of boiler.
5. Electrical wiring should be in accordance with requirements of authority having jurisdiction. Refer to:
  - Canada-Canadian Electric Code, CSA C22.1 Part 1, Safety Standards for Electrical Installations.
  - USA-National Electric Code, ANSI/NFPA 70.

### Pre-Commissioning Check

1. Confirm building service panel has adequate capacity to operate electric boiler.
2. Check system pressure is 15-25 PSIG.
3. Do not reverse pump flow or use pump rated greater than 5 amps.
4. Check for leaks. Repair if necessary. Purge all air from system.
5. Do not exceed maximum 40% glycol mixture.
6. Do not apply external power source to thermostat, R(T), W(T) and C terminals.
7. Check all high current wiring connections to ensure they are tight. See Figure 1.
8. Torque spec for block and breaker wires is 40 lb.-in.



Check all high current connections for tightness.

Check by hand that connectors are tight on high current relays. Moving the connectors should move the relay.

Figure 1: High Current Connections

Commissioning

Test mode is intended for installers to check boiler operating limit circuits. To familiarize yourself with boiler interface, refer to Figure 2.

1. Turn breakers “ON”.
2. To enter test mode, unit must be energized and in OFF mode. Press and hold Up button for 4 seconds. Firmware version is displayed for 3 seconds.
3. Press MODE/POWER button. Display will illuminate all segments 8.8.8 along with demand LED.
4. Press MODE/POWER button again “tSt” is displayed. Control checks low water cutoff sensor, high limit, load management, and water temperature circuits. The display will indicate an error code (FLO, CLO, HL, tSO, tSS), and an audible alarm will sound if any circuit is open.
5. Press MODE/POWER button again to check the heating elements. If the element does not have power, error is displayed (“r1”, “r2”, “r3”, and “r4”), and an audible alarm will sound.
6. When test is completed, “dOn” is displayed. Press Up arrow button to exit test mode and turn to OFF mode.
7. Refer to “Troubleshooting” section of I,O &S instructions for more details.

Figure 2 - Legend	
1	Turns the boiler ON and OFF, selects mode and configuration.
2	Energized when there is a call for space heating or domestic hot water.
3	Energized with corresponding heating element.
4	Energized with boiler pump relay.
5	Indicates water temperature, set point, mode, and error codes.
6	Used to select temperature set point for space heating, domestic hot water and configuration selections.

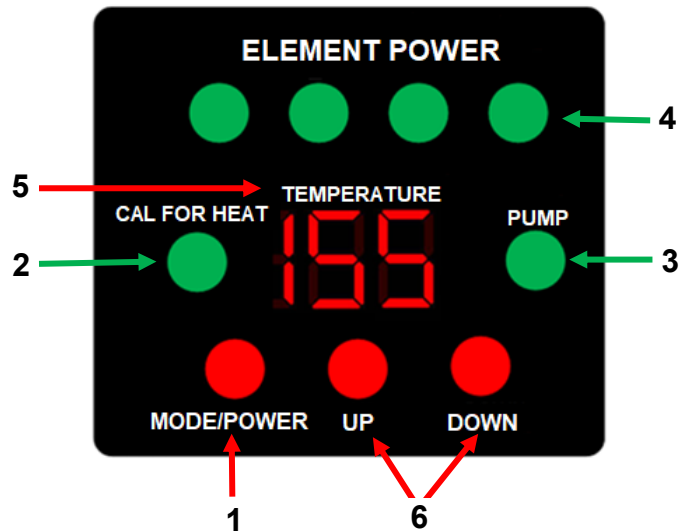


Figure 2: Boiler Interface/Display

Initial Startup

1. Turn breakers “ON”.
2. Check TT stat is connected and there is a call for heat.
3. All safety inputs must be jumped, including Load Management Control (LMC) before boiler turns On.
4. At startup, boiler will initiate “Dry Fire Test”, which can take 5 to 10 minutes. Display will flash “dFT”.

**NOTICE**

Setting for CHS cannot exceed setting for DHW.

5. Press MODE/POWER button to select Space Heating (CHS) or Domestic Hot Water (dHS) operation mode.
6. Press Up and Down buttons to adjust temperature settings.

Temperature Setting		
Space Heating	CHS	90-180 F
Domestic Hot Water	dHS	90-180 F
Differential Temperature	dFS	4-20 F