

ELECTRICAL POWER GUIDE — INTERNATIONAL EDITION —



**Natural Gas Modulating,
Condensing Hot Water
Boiler Models:**

- **INN800**
- **INN1060**
- **INN1350**

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INNOVATION Gas-Fired Hot Water Boilers



Latest Revision: 02/23/2017



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1 GENERAL

Innovation (INN) Gas Fired Hot Water Boilers are fully factory wired and packaged units which require simple power wiring as part of the installation. This technical guide is intended to help designers provide electrical power wiring (line voltage) to Innovation units. Control wiring details are provided in other publications depending on the intended application. This document is intended as a guide only, and cannot include all alternatives, situations, or be totally inclusive. To comply with all codes and authorities having jurisdiction, designers and installers must plan the electrical wiring carefully and execute the installation completely. Emergency shutoffs, fusible fire switches, break glass stations, and other electrical requirements should be considered and installed whenever necessary.

2 Hot Water Boiler Electrical Requirements

Innovation Hot Water Boilers require the following electrical supply:

220 volts, single phase, 50 Hz, 15 Amps

Refer to Figure 1 for typical electrical shutoff disconnect switch location.

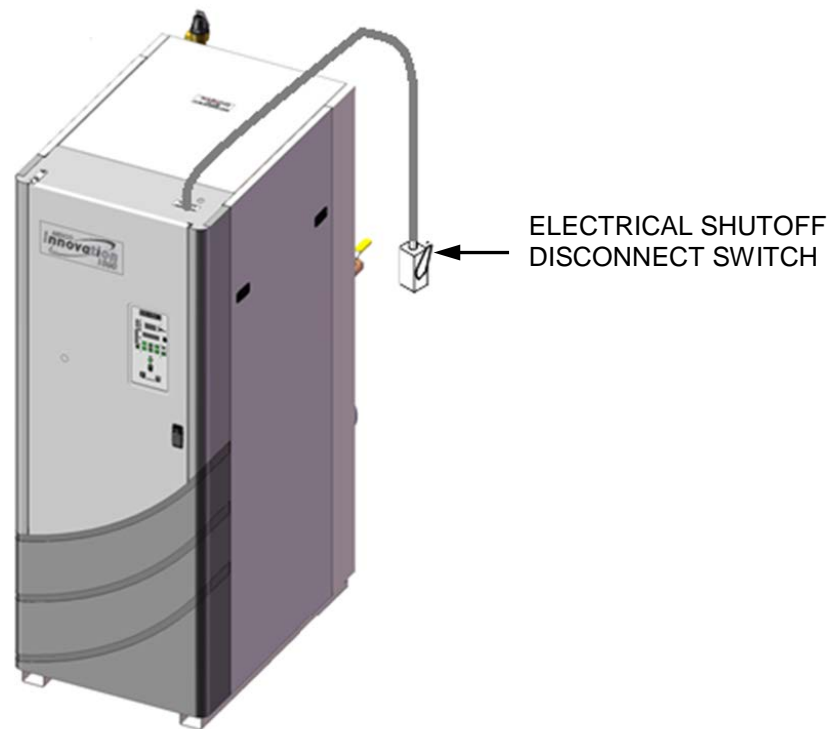
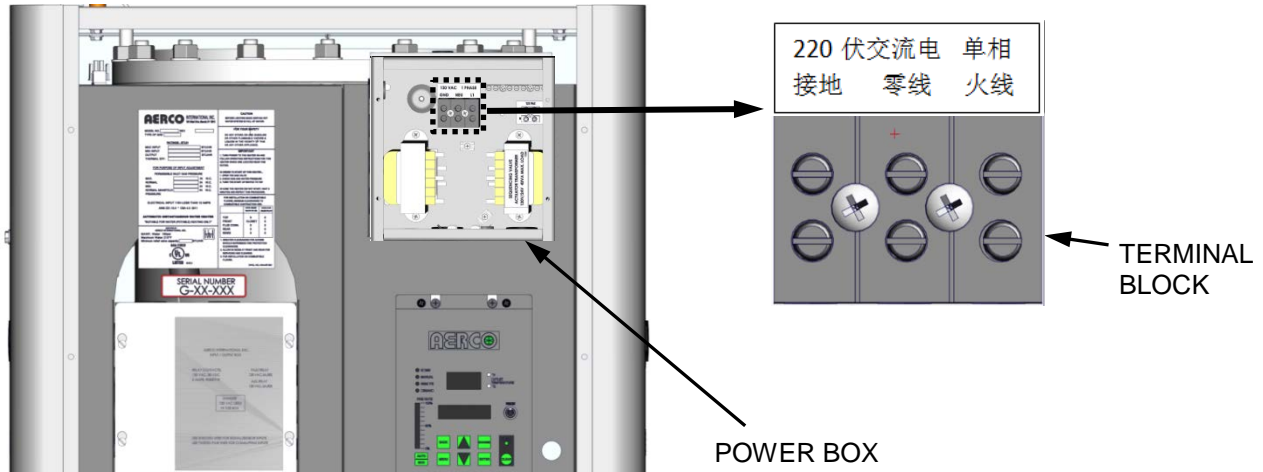


Figure 1. Service Switch Typical Location

The distribution block for field connection is located in the upper right of the control box (see Figure 2). All copper wire must be connected to the terminal distribution block. Voltages lower than the rated input will result in increased wear and premature failure of the blower motor. Wire size and type should be made per the National Electrical Code based on length and load.

Figure 2 shows the location of the Power Box containing the terminal block connections. The Power Box is accessed by removing the front panel of the unit.



Power Box Shown With Cover Removed

Figure 2. Power Box and Terminal Block Location

All units that operate with a 220 VAC power source include a 220 VAC to 120 VAC transformer. This transformer is installed inside the unit, as shown in Figure 3, and is pre-wired. The 220 VAC electrical connection is made in the Power Box (see Figure 2).

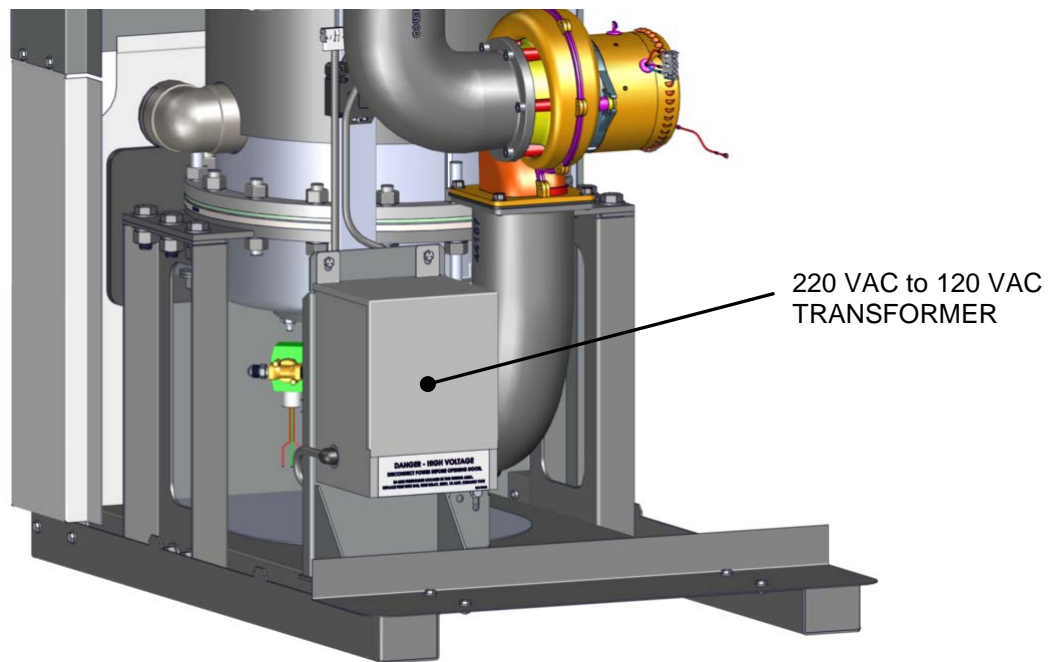


Figure 3. 220V Transformer – Front Frame & Panel and Side Panels Removed

3 Provisions for Service

Designers must provide emergency shutoffs and other devices to satisfy electrical codes. It is also recommended to provide an electrical shutoff disconnect switch of suitable load carrying characteristics on or near each Hot Water Boiler. No electrical boxes or field components should be mounted to the surface of the unit or where they would interfere with the removal of the side or top panels for maintenance. The disconnect switch should be mounted near the unit as illustrated in Figure 1. Wiring conduit, EMT, or other wiring paths should not be secured to the unit, but supported externally. Electricians should be instructed as to where the wiring conduit should be located, such as away from the relief valve discharge, drains, etc. All electrical conduit and hardware should be installed so that it does not interfere with the removal of any cover, inhibit service or maintenance, or prevent access between the unit and walls or another unit.

4 Unit Wiring

A dedicated protected circuit should be provided from the power source to the unit. No other electrical devices should be permanently wired on the same circuit. An emergency switch (electrical shutoff) must be in series with the power to the unit. Refer to Figure 4 for the wiring connections to the terminal block contained in the unit's Power Box.

5 Multiple Unit Wiring

Whenever multiple units are installed within the same mechanical spaces, electrical code requirements call for a single electrical shutoff for emergency use. It is the responsibility of the electrical designer to comply with local codes and regulations affecting an individual installation.

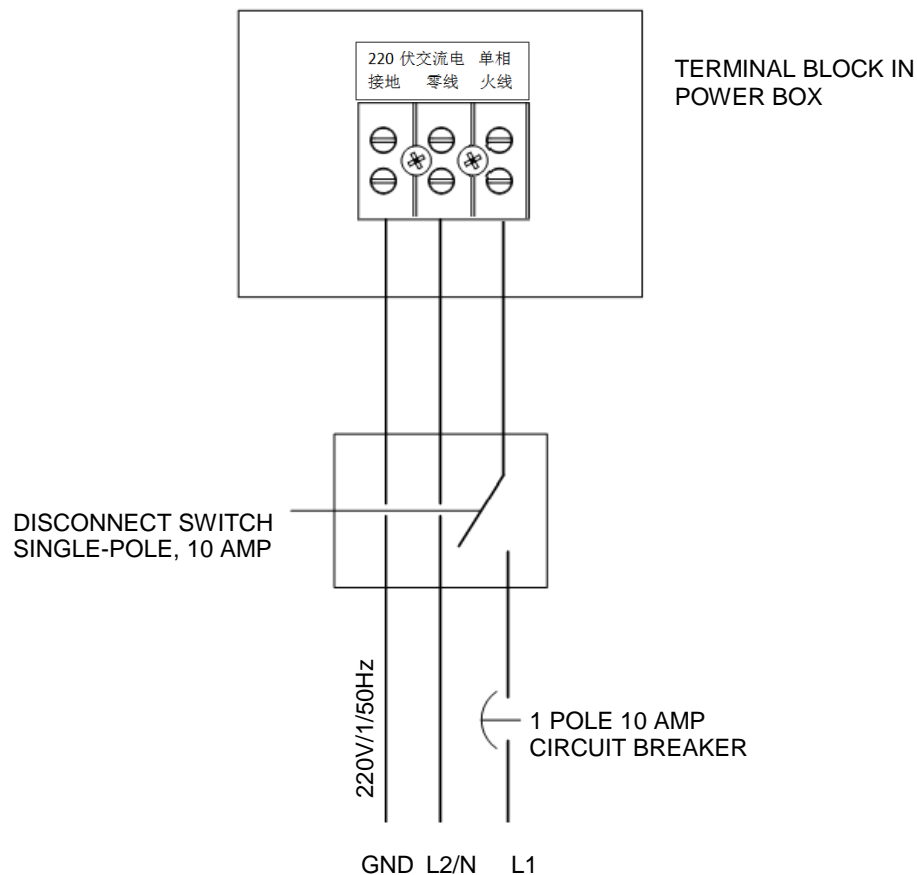


Figure 4. 220V/1Ø/50 Hz Wiring Schematic

Change Log

Date	Description	
05/18/2015	Rev A: Initial Release	
02/23/2017	Rev B: PIR 1177-8: Added 220 VAC to 120 VAC transformer	Chris Blair



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