

2. Move the **HOLD/RUN** switch to “RUN”.
3. When ready to begin, move the **ON/OFF** switch to “ON”.

If desired, the kiln may be manually adjusted to any heating level, and left at that level indefinitely (e.g., to “smoke out” sensible moisture prior to starting the firing). To do this:

4. Move the **ON/OFF** switch to “ON”.
5. Move the **RUN/HOLD** switch to “RUN”.
6. Move the **TURN-UP TIME** dial to the SET position.
7. When the duty cycle, as indicated by the bar-graph, reaches the desired level (e.g., “low” = 30% to 40%) move the **HOLD/RUN** switch to the “HOLD” position.
8. If necessary, the control can be reset by turning it off, then back on.

To compensate a motor-driven shut-off timer for the error produced by the on/off time-proportioning action, consider the following:

During the turn-up operation, the “off” time will average out to exactly half the set “turn-up time”, so reduce the timer setting by this amount. For example, if the turn-up time is set at four hours, and the total firing time is expected to be about six hours, use a five hour shut-off timer setting. This will provide a seven-hour maximum allowable firing period (viz.: during the first four hours, the timer will run for only 2-hours).

SERVICE and WARRANTY

FireRight Controls warrants *FireRight jr II* units for one-year from the date of purchase. Units that develop defects attributable to material or workmanship will be repaired or replaced without charge.

Beyond the warranty period, service for this device is available through the kiln dealer or manufacturer from whom the control was purchased, or direct from the manufacturer. Operating instructions and service information is always available on the Internet at the URL given below.

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INSTRUCTION SHEET

FireRight jr II™

HEATING CAPACITY CONTROLLER for Ceramic Kilns



GENERAL INFORMATION

The *FireRight jr II* is a precision electronic heating capacity controller. The unit is specially designed for use with ceramic kilns.

The controller regulates the kiln’s heating system using a method called “*time proportioning*”. In this method, the heaters are repetitively switched on and off every 30-seconds, which is called the “*cycle time*”. Varying the “on” time during each 30-second cycle regulates the heating rate. This is called the “*duty-cycle*”, and is usually expressed as a “%” of the cycle time.

For example, to set the kiln at “medium” heat, the *FireRight jr II* can be manually set to provide a 50% duty cycle. The kiln’s heaters will then be switched on for the first 15-seconds of each 30-second cycle.

Although the heat is actually produced as a series of pulses, the long thermal time constant of the kiln dampens the system, making it appear as if the heat is being provided by a constant, infinitely variable source.

In the “RUN” mode, the *FireRight jr II* controls the heat-up rate by automatically increasing the length of the “on” time during each successive on-off cycle. The heat-up rate is adjusted by means of a “TURN-UP TIME” dial, which has a range of zero to 10-hours.

A “SET” position on this same dial provides a means of manually adjusting or presetting the kiln’s heating rate, which is conveniently indicated in “%” on a “bar-graph” type LED display. When operated in the “HOLD” mode, the controller will maintain the heating duty cycle at the selected setting indefinitely. The bar-graph provides a flashing warning when the control is in the HOLD mode.

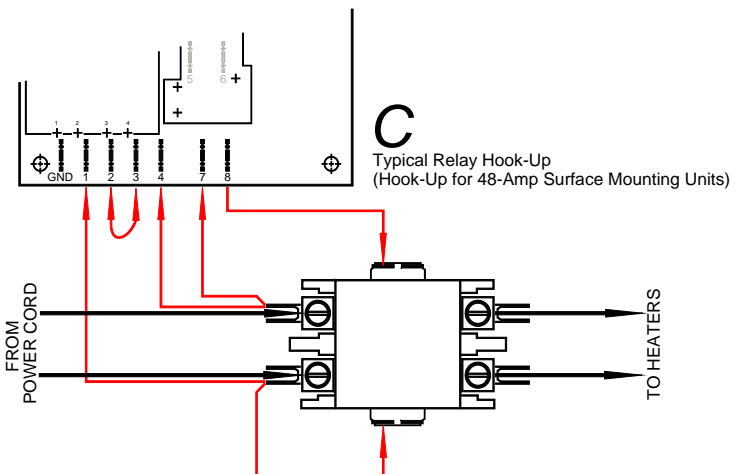
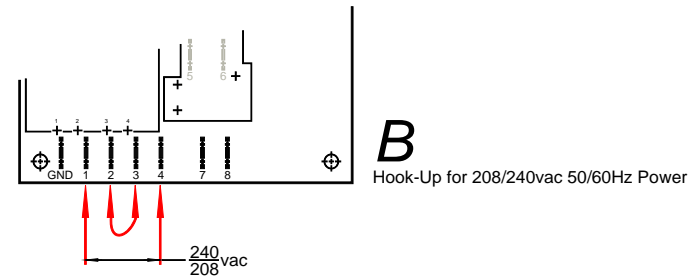
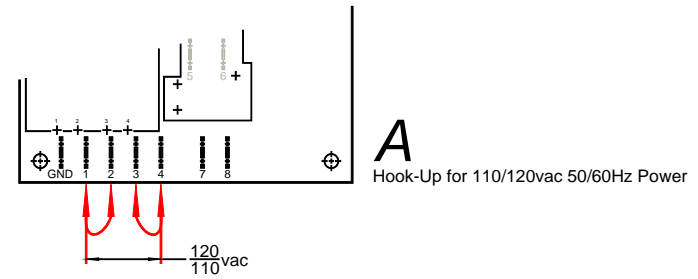
INSTALLATION

The *FireRight jr II* can be provided either as a panel suitable for flush mounting, or as a complete self-contained surface mounting controller. Please note that the operating temperature for either of these units must not exceed 50°C (131°F).

The flush-mounting unit is usually installed on the kiln, and wired directly to a heating relay inside the kiln’s switch box. These units can be used with either 110vac or 220vac power, and are often provided on new kilns as a factory-installed option. For either voltage, connect the power to terminals “1” and “4”. Then jumper terminals “2” and “3” according to either diagram “A” or “B”. Connect the external relay as shown in “C”.

The surface-mounting unit contains its own heating relay, and is often mounted on the kiln room wall, instead of on the kiln. These units are designed for 208-240vac 50/60Hz single-phase power, and will handle up to 48-amperes. Make the line and kiln connections as shown in diagram “C”, connecting the input power to the side of the contactor, which is pre-wired to the *FireRight jr II* panel. A connector is provided to permit disconnecting the pre-wired control cable for installation and service convenience.

The *FireRight jr II*’s on-off switching action will interfere with the operation of any motor-driven shut-off timer connected on the load side of the unit, since the timer will not run during the “off” periods. If it is not convenient to connect the heating relay downstream from the timer, it is possible to compensate for this error as noted under the “Operation” heading.



Your electrical service carries **HIGH VOLTAGES**, which can inflict **LETHAL ELECTRICAL SHOCKS**. Improper connections can produce safety hazards, and may damage this device. If you have no wiring experience, or are unsure of your planned hook-up, please refer wiring of this device to a skilled electrician.

OPERATION

To operate the *FireRight jr II* Heating Capacity Controller, proceed as follows:

1. Set the **TURN-UP TIME** dial to the desired turn-up period. This is the time required for the kiln to be turned up from 0% to 100% on. For example, if you normally use a three-hour “switch schedule” (on “low” for one hour, “medium” for two hours, then to “high”), set the dial at “3”.