



BLICHMANN ENGINEERING 43013 Power Controller Instruction Manual

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BLICHMANN ENGINEERING 43013 Power Controller



What's In the Box?

240V Controller



120V Controller



The Power Controller is an ideal means to control the power output for your electric kettles. Note: this controller does not control temperature. The pulse width modulation linear control is superior to highly nonlinear “dimmer switch controls”. It allows the user to easily set the desired % power output in an intuitive and fast manner. In addition, the Power controller design is modular. If your kettle requires multiple elements, optional Relay Modules can be added to accommodate up to 5 total elements (One power Controller plus 4 Relay Modules), all driven by a single Power Controller. Units can easily be wall-mounted or table-mounted, and can also be connected together using optional off-the-shelf DIN rails. The Power Controller is available in either 120VAC or 240VAC. They are available pre-wired with short “pigtail” power connectors or unwired for the user to install their own preferred cables. **WARNING:** It is recommended to hire a certified electrician to do the wiring if you are not confident that you can perform this work yourself. Always use a cable and wire gauge suitable for the power of your heater. All units must be connected to the appropriately sized GFCI circuit. Refer to the chart to determine the appropriate breaker required for your circuit. If you are uncertain about the power requirements or your server location, contact a licensed and qualified electrician familiar with National Electrical Code standards and requirements.

Each Unit	Maximum Heater Power (Watts)	GFCI Breaker Size (minimum)
120VAC	2400	20A
240VAC	7200	30A

WARNING: DO NOT immerse or spray the controller with water.

- NEVER leave this equipment unattended.
- NEVER allow children near this equipment.
- NEVER heat cooking oil with this equipment.
- NEVER use near or with combustible chemicals, gasoline, or other flammable vapors or liquids.
- NEVER operate any equipment with frayed or damaged power cables.
- NEVER expose electrical connections to moisture.
- NEVER modify or alter the supplied electrical cables or connectors.
- NEVER operate a controller with higher than rated voltage or current.
- NEVER unplug heater when energized.
- NEVER energize the heater without the heating coils fully submerged.

ALWAYS:

- ALWAYS unplug controller when powered off.
- ALWAYS connect to a GFCI circuit.
- ALWAYS check power cables and connectors for signs of damage or wear prior to each use.
- ALWAYS check that all fasteners are properly tightened prior to each use.
- ALWAYS use genuine Blichmann Engineering™ replacement parts.
- ALWAYS wear appropriate personal protective equipment, such as gloves, clothing, and footwear to prevent burns and scalds.

Wiring the cables through the bottom of the controller

You can wire the cables through the bottom of the controller housing to allow you to wall mount your power controller. Follow these steps to wire your controller.

1. Disconnect the controller from the power source.
2. Remove the screws from the front and back of the controller and remove the bottom housing. (Figure 1)
3. Place the cords through the grommets.
4. Mount the ground cables to the ground screws.
5. Mount the black wires to the terminals on the circuit board. Mount the male cables black wire to the T1_BLK_IN terminal (Figure 2) and mount the female cables black wire to the T2_BLK_OUT terminal.
6. Connect the three white wire (one from each cable and the one coming from the circuit board) with the included wire nut.
7. Reattach the bottom housing to the controller.

Figure 1

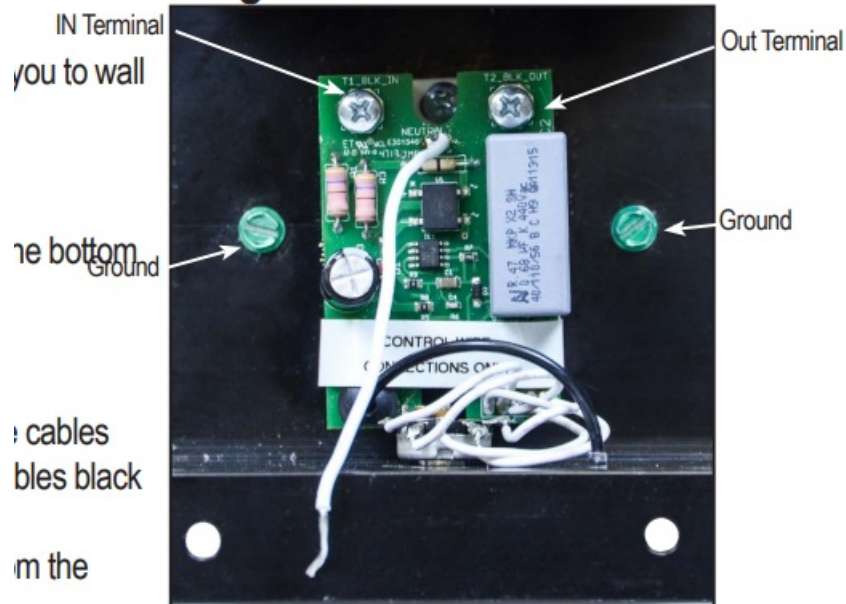
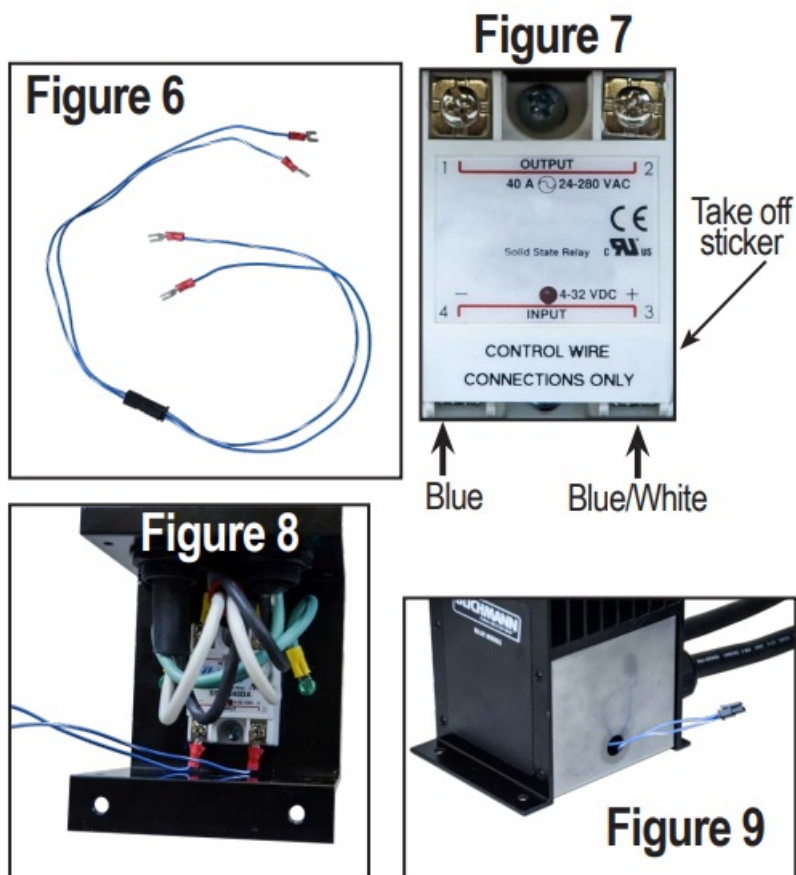


Figure 2

Wiring the Relay Module to the Power Controller

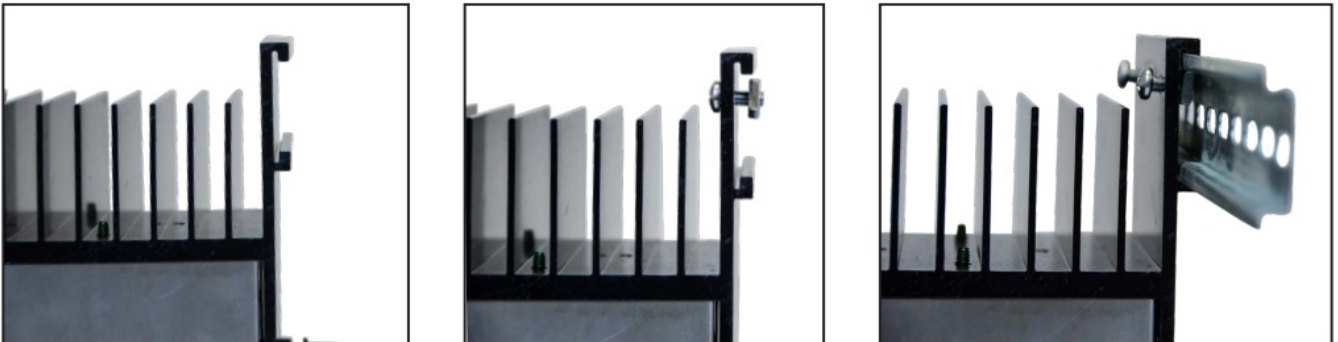
The Relay Module is used to control multiple heating elements. Your control relay will come with a blue jumper cable (Figure 6). This cable will need to be wired to both the Power Controller and the Relay Module. Separate the jumper cable at the connection.

1. Disconnect the controller from the power source.
2. Remove the front and rear screws to access the inside.
3. Remove the “CONTROL WIRE CONNECTIONS ONLY” label on the Relay Module (Figure 7).
4. Connect the blue/white cable to terminal 3 (+) and connect the blue wire to terminal 4 (-). (Figure 7)
5. Run the jumper cable out the side of the controller as shown in Figure 9 and attach the bottom housing on the Relay Module.
6. Remove the “CONTROL WIRE CONNECTIONS ONLY” label on the Power Controller. Install the blue jumper wires to the labeled terminals (Figure 10). Connect blue to T4, connect blue/white to T3.
7. Attach the bottom housing on the Power Controller and run the jumper cable out the side of the controller.
8. If desired, mount both controllers to the DIN Rail (sold separately) shown in Figure 11.
9. Re-assemble with caution not to pinch any of the wires inside. Cut the DIN Rail with a saw if required.



DIN Rail Installation

Attach the DIN rail with the included bolt and square nut in the kit. Put the bolt and nut on the controller loose. Slide the DIN rail into the back of the controller and tighten the bolts when the controller is in place. Do not overtighten. This will hold the controller onto the DIN rail.



Operation

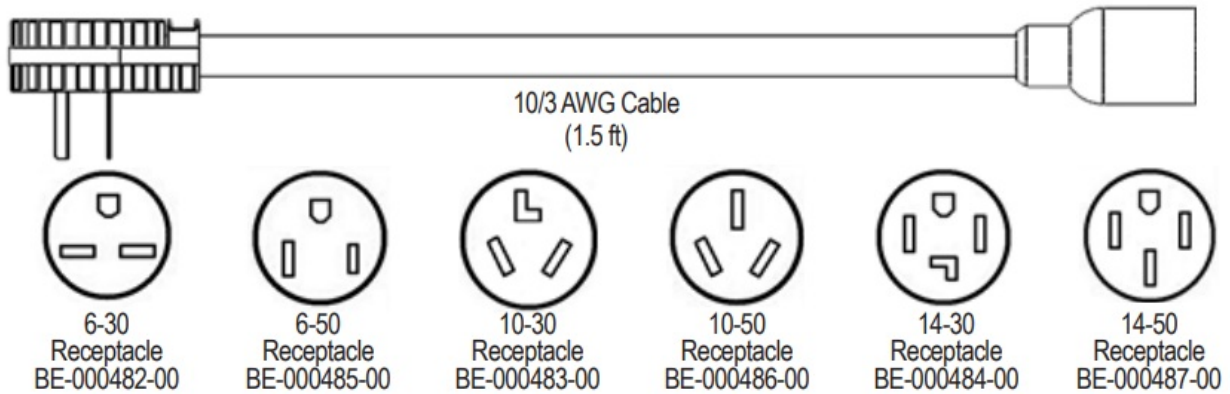
Warning: Before use, ensure that the Power Controller knob is in the OFF position. The OFF position is engaged by turning the power control knob fully counterclockwise. It is harmful to the power cable connections to install/remove them under power as the connections will arc and will quickly fail. In addition, inadvertent energizing of the elements can cause equipment damage and possible injury. Connect the heater cord to the electric immersion heater (BoilCoil™). Next, connect the male end of the heater cord to the female terminal on the Power Controller. Repeat this step if using Relay Modules for multiple heating element setups. Connect the female end of the power cord(s) to the male terminal of the Power Controller. Lastly, connect the male end of the power cord(s) to a GFCI power source. To increase power from 0% (off) to 100% (full power) turn the knob clockwise to the desired % power setting. For example, a setting of “6” will represent 60% of full power of the installed heating element.

Maintenance

The Power Controller requires little maintenance. Inspect fasteners and wires regularly and replace as needed ONLY with genuine Blichmann Engineering™ parts. Parts can be ordered through your retailer or directly from Blichmann Engineering. After brewing, wipe any drips off with ordinary soap and a soft sponge.

Adapter Plug

Adapters are available for purchase from Blichmann Engineering™ for receptacles as shown below. The 240V model of the Power Controller is equipped with L6-30 connections (30A). The 120V model of the Power Controller is equipped with L5-20 connections (20A). Blichmann Engineering™ offers six optional power cord adapters to adapt common 240V outlets to an L6- 30R connection.



Extension Cord

120v 11.5ft
Extension Cord
BE-000365-01

240v 11.5ft
Extension Cord
BE-000364-01




Product Warranty

1. Blichmann Engineering warrants to the original purchaser that this product will be free from manufacturing defects in material and workmanship for a period of one (1) year from the date of purchase by the customer. Proof of purchase is required. Blichmann Engineering's obligation to repair or replace defective materials or workmanship is the sole obligation of Blichmann Engineering under this limited warranty.
2. This product is for home use only. The limited warranty covers only those defects that arise as a result of normal use of the product and does not cover any other problems, including, but not limited to, those that arise as a result of:
 - Improper maintenance or modification;
 - Damage due to incorrect voltage or improper wiring by the customer;
 - Operation outside of the product's specifications;
 - Carelessness or neglect to operate the product in accordance with instructions provided with the product;
 - Damage by over-tightening the fasteners;
 - Failure to follow cleaning and/or maintenance procedures; or
3. Blichmann Engineering reserves the right to request delivery of the defective component for inspection before

- processing the warranty claim. If Blichmann Engineering receives, during the applicable warranty period, a notice of a defect in any component that is covered by the warranty, Blichmann Engineering shall either repair or replace the defective component with a new or rebuilt component at Blichmann Engineering's option.
4. Blichmann Engineering must be notified within seven (7) days of the delivery date of any shipping damage. The customer is responsible for shipping damage outside of this time period. Approval for return must be provided by Blichmann Engineering prior to any return. The customer is responsible for keeping all original packaging material for warranty returns. Blichmann Engineering is not responsible for damage from improperly packaged warranty returns, and these repair costs will be the sole responsibility of the customer. Shipping costs for warranty returns are covered only for the contiguous United States.
 5. Blichmann Engineering's limited warranty is valid in any country where the product is distributed.

Documents / Resources

	BLICHMANN ENGINEERING 43013 Power Controller [pdf] Instruction Manual 43013 Power Controller, 43013, Power Controller
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References

- [B Blichmann Engineering: Industry-Leading Brewing Equipment](#)