Power Controller

Assembly, Operation, & Maintenance

Congratulations on your purchase, and thank you for selecting the Power Controller from Blichmann Engineering™. We are confident that it will provide you years of service and many gallons of outstanding beer. This manual will familiarize you with the use, assembly, and the sanitation procedures for the product.

IMPORTANT INFORMATION

PLEASE READ AND THOROUGHLY UNDERSTAND THIS MANUAL PRIOR TO USE FOR IMPORTANT SAFETY INFORMATION!

WARNING: Sections labeled "Warning" can lead to serious injury or death if not followed. Please thoroughly read these sections and understand them completely before use. If you do not understand them or have any questions, contact your retailer or Blichmann Engineering (www.BlichmannEngineering.com) before use.

CAUTION: Sections labeled "Caution" can lead to equipment damage or unsatisfactory performance of the equipment. Please read these sections thoroughly. If you have any questions, contact your retailer or Blichmann Engineering (www.BlichmannEngineering.com) before use.

IMPORTANT: Sections labeled "Important" should specifically be followed to ensure satisfactory results with the product.

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 a 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 cable and wire gauge suitable for the power of your heater.

All units must be connected to the appropriate 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: The 240V model of the Power Controller is rated for use with electric heaters up to 7200 watts. The 120V model of Power Controller is rated for use with electric heaters up to 2400 watts. Never exceed 30 amps with the 240V model and 20 amps with the 120V model. It is recommended to have a dedicated circuit to power your heater(s).

WARNING: The Electric Power Controller is only to be used in conjunction with a Ground Fault Circuit Interrupter (GFCI) protected power source. If you are uncertain about the status of your power source contact a licensed and qualified electrician familiar with National Electric Code standards before proceeding. Operating the Electric Power controller in any fashion other than described in this manual can result in personal property damage, injury, electrocution, or death.

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

NEVER:

- **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 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.

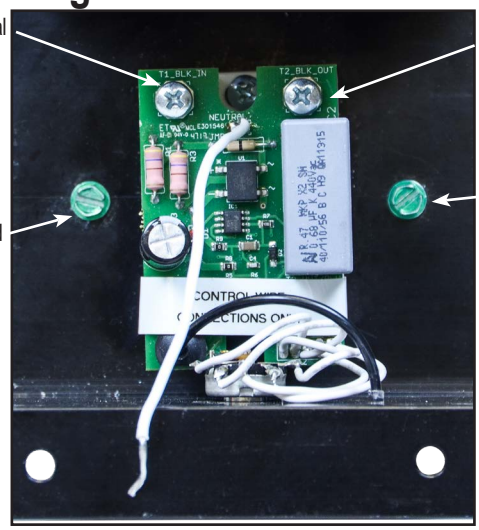
Wiring the cables through the bottom of the controller

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. Remove the screws from the front and back of the controller and remove the bottom housing. **(Figure 1)**
2. Place the cords through the grommets .
3. Mount the ground cables to the ground screws.
4. 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 **(Figure 2)**.
5. Connect the three white wire (one from each cable and the one coming from the circuit board) with the included wire nut.
6. Reattach the bottom housing to the controller.

Figure 1



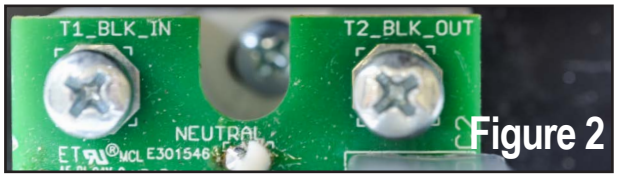


Figure 2

Relay Module

ONLY TO BE USED WITH THE BLICHMANN ENGINEERING POWER CONTROLLER.

What's In the

120V Relay Module

240V Relay Module

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. Remove the "CONTROL WIRE CONNECTIONS ONLY" label on the Relay Module **(Figure 7)**.
2. Connect the **blue/white** cable to **terminal 3 (+)** and connect the **blue** wire to **terminal 4 (-). (Figure 7)**
3. Run the jumper cable out the side of the controller as shown in **Figure 9 and** attach the bottom housing on the Relay Module.
4. Remove the "CONTROL WIRE CONNECTIONS ONLY" label on the Power Controller. Install the blue jumper wires to the labled terminals **(Figure 10)**. Connect blue to T4, connect blue/white to T3.
5. Attach the bottom housing on the Power Controller and run the jumper cable out the side of the controller.
6. If desired, mount both controllers to the DIN Rail (sold separately) shown in **Figure 11**.

Cut the DIN Rail with a saw if required.

Figure 6

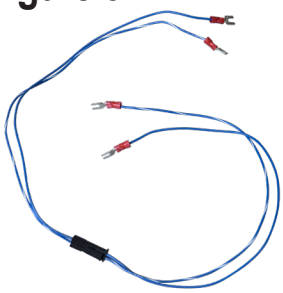


Figure 7

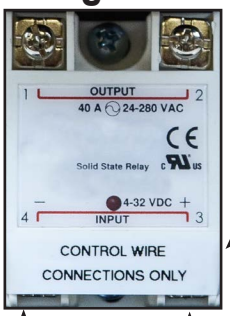


Figure 8

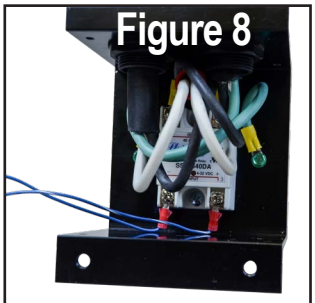


Figure 9

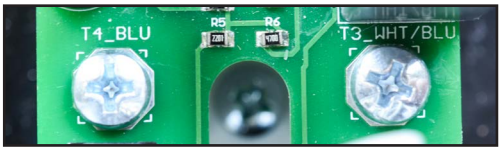


Figure 10

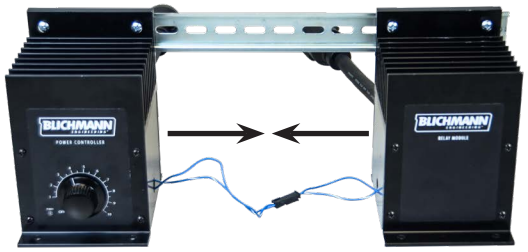
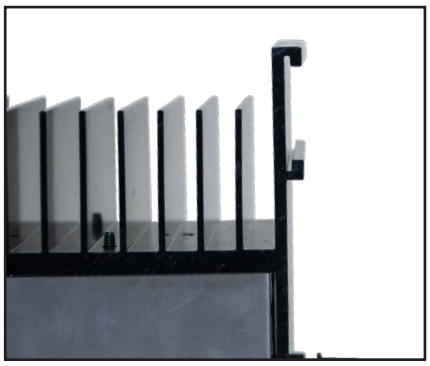
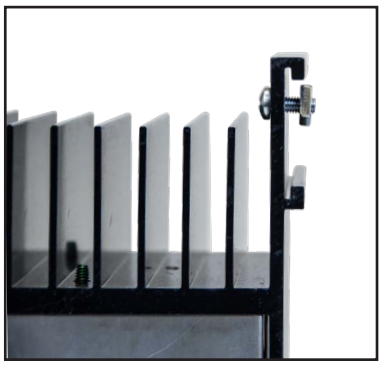


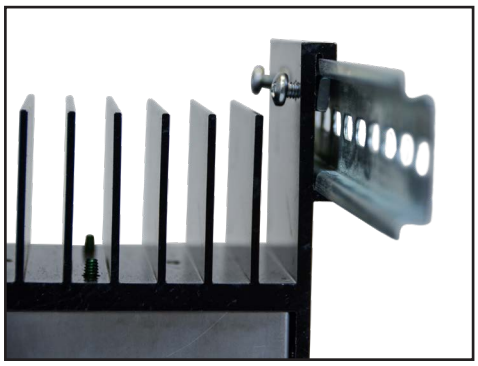
Figure 11

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. Connection may be different if you have wired the units yourself.

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.

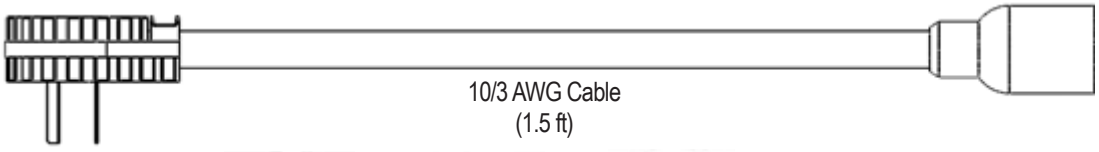
Optional Accessories

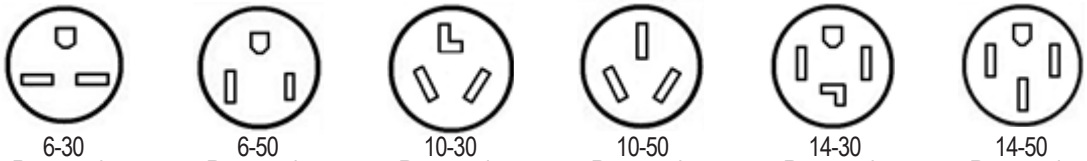
Adapter Plug

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.

Adaptors available for purchase from Blichmann Engineering™ for receptacles as shown below.

Adapter Plug





6-30 Receptacle BE-000482-00	6-50 Receptacle BE-000485-00	10-30 Receptacle BE-000483-00	10-50 Receptacle BE-000486-00	14-30 Receptacle BE-000484-00	14-50 Receptacle BE-000487-00

Extension Cord

120v 11.5ft Extension Cord BE-000365-01

240v 11.5ft Extension Cord BE-000364-01

Blichmann Engineering Product Warranty

A. Limited 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:
    a. Improper maintenance or modification;
    b. Damage due to incorrect voltage or improper wiring by customer;
    c. Operation outside of the product's specifications;
    d. Carelessness or neglect to operate the product in accordance with instructions provided with the product;
    e. Damage by over-tightening the fasteners;
    f. 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, 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. Customer is responsible for shipping damage outside of this time period. Approval for return must be provided by Blichmann Engineering prior to any return. 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 warrantee 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.

B. Limitations of Warranty

1. Any implied warranty that is found to arise by way of state or federal law, including any implied warranty of merchantability or any implied warranty of fitness, is limited in duration to the terms of this limited warranty and is limited in scope of coverage to this warranty. Blichmann Engineering disclaims any express or implied warranty, including any implied warranty of fitness for a particular purpose or merchantability, on items excluded from coverage as set forth in this limited warranty.
2. Blichmann Engineering makes no warranty of any nature beyond that contained in this limited warranty. No one has authority to enlarge, amend, or modify this limited warranty, and Blichmann Engineering does not authorize anyone to create any other obligation for it regarding this product.
3. Blichmann Engineering is not responsible for any representation, promise, or warranty made by any independent dealer or other person beyond what is expressly stated in this limited warranty. Any selling or servicing dealer is not Blichmann Engineering's agent, but an independent entity.

C. Limitations of Liability

1. The remedies provided in this warranty are the customer's sole and exclusive remedies.
2. Except for the obligations specifically set forth in this warranty, in no event shall Blichmann Engineering be liable for direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory and whether or not advised of the possibility of such damages.
3. This warranty does not cover, and in no event shall Blichmann Engineering be liable for, travel, lodging, or any other expense incurred due to manufacturing defects in material and workmanship, or any other reason.
4. Any performance of repairs after the warranty coverage period has expired or performance of repairs regarding anything excluded from coverage after this limited warranty shall be considered good-will repairs and they will not alter the terms of this limited warranty, or extend any warranty coverage period.
5. Venue for any legal proceedings relating to or arising out of this warranty shall be in Tippecanoe County, Indiana, United States, which courts will have exclusive jurisdiction.

D. Local Law

1. This warranty gives the customer specific legal rights. The customer may also have other rights that vary from state to state in the United States or other countries.
2. To the extent that this warranty is inconsistent with local law, it shall be deemed modified, only to the extent necessary to be consistent with such local law.

This product uses FDA and/or NSF approved food grade materials anywhere the product touches the beverage.
Warning: This product contains or may contain chemical(s) known to the State of California to cause cancer, birth defects, or other reproductive harm.