

BriskHeat®



TTD

Outdoor-Use Digital On/Off Thermocouple Temperature Controller Instruction Manual



Read and understand this material before operating or servicing this temperature controller. Failure to understand how to safely operate this controller could result in an accident causing serious injury or death. This controller should only be operated by qualified personnel.

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INTRODUCTION

BriskHeat® TTD Outdoor-Use Digital On/ Off Thermocouple Temperature Controllers are designed for general purpose use in outdoor or indoor environments to control the temperature of small tanks, drums, pipes, or other applications requiring automatic control.



SAFETY ALERT SYMBOL

The symbol above is used to call your attention to instructions concerning your personal safety. It points out important safety precautions. It means **“ATTENTION! Become Alert! Your Personal Safety is involved!”** Read the message that follows and be alert to the possibility of personal injury or death.



Immediate hazards which WILL result in severe personal injury or death



Hazards or unsafe practices which COULD result in severe personal injury or death



Hazards or unsafe practices which COULD result in minor personal injury or property damage.

SAVE THESE INSTRUCTIONS!

Additional copies of this manual are available upon request.

IMPORTANT SAFETY INSTRUCTIONS



⚠ DANGER
 A person who has not read and understood all installation instructions is not qualified to install this product.

⚠ DANGER

- Do not immerse controller in liquid.
- Keep volatile or combustible material away from controller when in use.
- Use controller only in approved locations.
- Keep sharp metal objects away from controller.

Failure to observe these warnings may result in electric shock, risk of fire, and personal injury.

⚠ WARNING

End User Must Comply to the Following:

- Must be mounted vertically for outdoor use
- Only qualified personnel are allowed to connect electrical wiring.
- All electrical wiring must follow local electrical codes and highly recommend following NEC Article 427.
- Final installation / wiring is to be inspected by the authority who has jurisdiction in the area that the heater and temperature controller is installed.
- The end-user is responsible for providing a suitable disconnecting device.
- The end-user is responsible for providing suitable electrical protection device. It is highly recommended that a ground fault circuit breaker is used.

Failure to observe these warnings may result in personal injury or damage to the controller.

⚠ CAUTION

- Inspect all components before use.
- Do not use control and heater if any component is damaged.
- Do not repair damaged or faulty controller.
- Do not crush or apply severe physical stress on any component of controller, including cord assembly.
- Power plug must be plugged into a sheltered outlet.
- Unplug controller when not in use.
- Unplug controller before fuse is changed.
- Do not change the fuse while raining or if water can be splashed into the fuseholder while the cap is off.

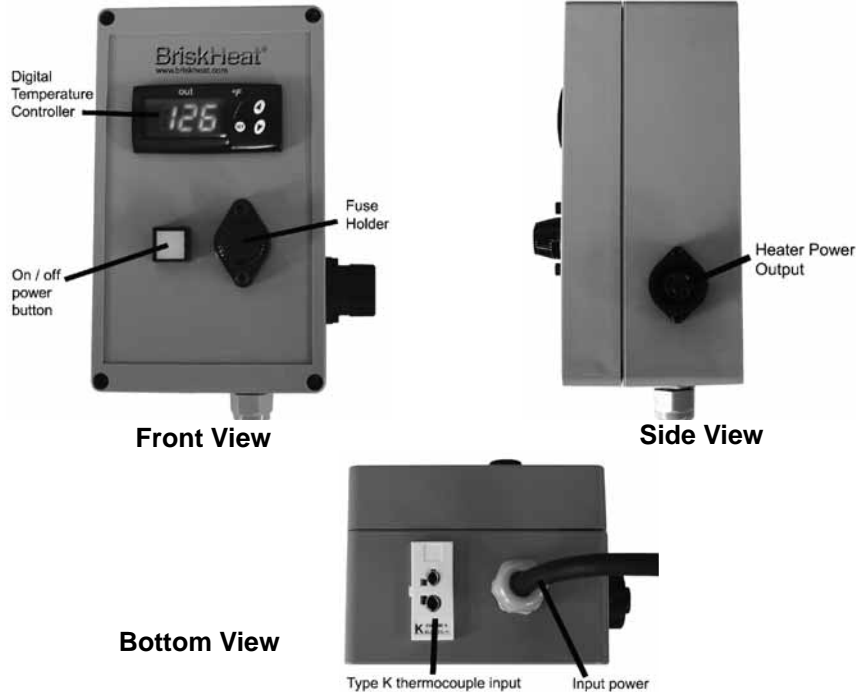
Failure to observe these warnings may result in personal injury or damage to the controller.

SPECIFICATIONS

- 120 or 240VAC
- 15 amps
- Digital on/off controller
- Units in °F
- Input power cord 6 feet (1.8m) long with standard plug
 - 120VAC: NEMA 5-15
 - 240VAC: NEMA 6-15
- Output receptacle:
 - IP 67 four-pin (NEMA 6P equivalent) [plug assembly included]
- Audible alarm
- Type K thermocouple mini and standard connector input
- Average accuracy of ±1% FS
- Resolution: 1°
- Hysteresis: 5°
- Suitable for outdoor use (must be mounted vertically)
- Operating exposure temperatures: 14 to 131°F (-10 to 55°C)
- Storage exposure temperatures: -4 to 176°F (-20 to 80°C)
- Mounting feet included
- Optional mounting bracket kit ideal for tote tank / IBC applications

| Part Number | Volts | Range |
|-------------|-------|-------------|
| TTD175-K120 | 120 | 32 to 175°F |
| TTD175-K240 | 240 | 32 to 175°F |
| TTD500-K120 | 120 | 32 to 500°F |
| TTD500-K240 | 240 | 32 to 500°F |
| TTD999-K120 | 120 | 32 to 999°F |
| TTD999-K240 | 240 | 32 to 999°F |

PRODUCT VIEWS



INSTALLATION OF MALE OUTPUT PLUG TO HEATER

Tools Needed

- 1/8" flathead screwdriver
- Wire stripper

STEP 1: Lead Wire Preparation

Refer to Figure 1. Verify lead wire dimensions are within tolerances.

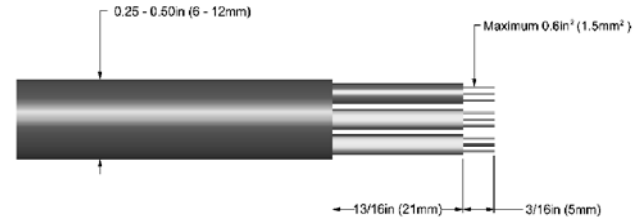


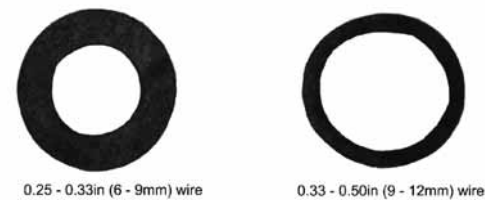
Figure 1



Figure 2

STEP 2: Assemble Plug

Verify that you have all components. Refer to Figure 2. Part "B" is a rubber grommet. Select the correct size based on diameter of lead wire. See Figure 3. Slide part "B" into part "C". Attach part "A" to part "C". Slide lead wires through partial plug assembly.



"B"

Figure 3

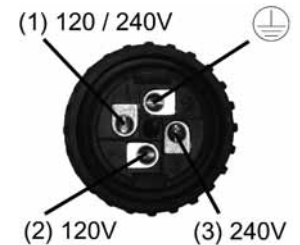


Figure 4

STEP 3: Connect Lead Wires to Pins

Using a 1/8" flathead screwdriver, tighten correct lead wire with correct pin on part "D". Refer to Figure 4.

120V: Pin 1 and 2 are for the power leads. Pin ⚡ is for the ground lead.

240V: Pin 1 and 3 are for the power leads. Pin ⚡ is for the ground lead.

STEP 4: Finish Plug Assembly

Attach part "D" to part "C" and tighten. Tighten part "A" to part "C".

INSTALLATION / OPERATION INSTRUCTIONS

⚠ WARNING

Read and understand this entire manual before operating this controller.

**VOLTAGE:
120VAC; 240VAC**

Plug heater into the controller and the controller into its power source. Plug thermocouple into thermocouple jack. For proper temperature control, place the thermocouple sensing tip so that it touches the edge of the heater.

- Sensor must be in close proximity to the heater to prevent overheating.
- If heater is installed on a vertical surface, place sensor directly on lower edge of heating blanket since heat naturally rises.
- Secure with one strip of aluminum adhesive tape.

Mount controller using mounting feet. For IBC / tote tank heating applications, attach controller to IBC / tote tank using optional hanging bracket kit. Push illuminated power button "ON". Refer to "Programming Instructions" for how to program controller.

PROGRAMMING INSTRUCTIONS



PARAMETER PROGRAMMING

- Press SET. SP text will appear on the display.
- Press SET again. The real value is shown on the display.
- The value can be modified with the UP and DOWN arrows.
- Press SET to enter any new values.
- Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

BUZZER

In the event of alarm or error condition, the internal buzzer is activated. To silence the buzzer, press and hold the SET and Down keys for 2 seconds.

LED INDICATIONS

- OUT = Indicates that the heater is on.

DISPLAY MESSAGES

In normal operation, the sensor temperature will be shown on the display. In case of alarm or error, the following messages will be shown:

- Er = Memory Error / Controller Error
- -- = Short-Circuit Thermocouple Error (Disconnects output).
- oo = Open Thermocouple Error (Disconnects output).

CONTROLLER OPERATION:

Once the controller reaches set point, the heater will turn off and will not turn on again until the temperature falls 5°F below the set point.

The controller will sound an audible alarm if the temperature at the sensor exceeds 15°F above the set-point.

TROUBLESHOOTING GUIDE

Please read this guide prior to contacting BriskHeat®. This guide is designed to answer the most commonly asked questions. If you are unable to identify the problem or need additional assistance, please contact your local distributor/ representative or us at **1-800-848-7673, 614-294-3376**, or **bhtsales1@briskheat.com**.

Controller does not function

1. Check fuse: Unplug the unit from its power source. Remove the fuse and check its continuity. If the fuse is defective, replace it with an Class CC 15 amp fuse. Fuses may be obtained from most electrical supply houses.
2. Check fuse position: Fuse is position specific. Ensure nipple of fuse is facing down away from fuse cap.
3. Check power source: Using a voltmeter, test the power source and assure correct voltage is present.
4. Check thermocouple: Using a thermocouple meter, test the sensor to assure proper function.

WARRANTY INFORMATION

BriskHeat® warrants to the original purchaser for the period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever comes first. Contact factory at 1-800-848-7673 (toll free, U.S. / Canada) or 614-294-3376 for complete details.

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