


ENGLISH



**55-Gallon Drum Immersion Heater**  
**1000 Watt Digitally Controlled Tank Heater**

**Instruction Manual**



You must read and understand this manual before installing, operating, or servicing this product. Failure to understand these instructions could result in an accident causing serious injury or death.

Keep these instructions for future reference.

**TABLE OF CONTENTS**

Introduction..... 2

Safety Alert Symbol..... 2

Important Safety Instructions..... 3

Summary of Operation..... 4

Description..... 4

Kit Contents..... 4

General Instructions..... 5

Controller Overview..... 5

Installation..... 5

Operation Overview..... 6

Maintenance and Cleaning..... 7

Product Specifications..... 8

Troubleshooting Guide..... 9

Warranty Information..... 9

**INTRODUCTION**

Thank you for purchasing a BriskHeat<sup>®</sup> 55-Gallon Drum Immersion Heater. Your heater is designed to provide a long and efficient service life with function, reliability, and safety in mind. For additional information or other BriskHeat<sup>®</sup> products, please contact BriskHeat<sup>®</sup> at 1-800-848-7673 (toll free, U.S. / Canada) or 614-294-3376.



**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 that **COULD** result in severe personal injury or death.



Hazards or unsafe practices that **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 operating Instructions is not qualified to operate this product.

#### Agency Approvals



240 V Unit Only

#### **! DANGER**

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

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

#### **! WARNING**

##### End-User Must Comply to the Following:

- Only qualified personnel are allowed to connect the electrical wiring.
- Disconnect all supply power at the source before making any power connections.
- All electrical wiring must follow local electrical codes.
- The installer must be qualified for this work.
- The end-user is responsible for providing a suitable disconnecting device.
- The end-user is responsible for providing a 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 heater.

#### **! CAUTION**

- Never handle the heater while it is in operation; always disconnect the heater from the power source and allow to cool prior to handling.
- Inspect heater before use.
- If spillage of foreign matter onto heater occurs, disconnect from power source and clean after heater is allowed to cool.
- Never operate heater without an appropriate heat sink (material being heated is considered to be a heat sink).
- Do not repair damaged or faulty heaters.
- Do not crush or apply severe physical stress on heater or cord assembly.
- Disconnect heater when not in use.
- Use heater only for its intended applications.
- Do not use with highly concentrated acids.
- Heater must be submerged when in use.

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

#### **! WARNING**

Read and understand this entire manual before operating this heating device.

### SUMMARY OF OPERATION

1. Easy installation with a universal-fit design.
2. Direct immersion of the heater results in high thermal efficiency.
3. Features clear digital indicators showing current temperature, alarm, and heating status, and is IP55 rated.
4. Ready to use, with grounded power cord and plug (120 VAC) or bare wire leads (240 VAC), delivering 1000 Watts.

### DESCRIPTION

The BriskHeat 55-Gallon Drum Heater is an integrated heater and thermostat designed to regulate the temperature of a tote tank and its contents. It features an immersion heater with a digital thermostat, and can be paired with a tote tank insulated jacket for maximum efficiency. The thermostat can be set to a maximum of 167°F (75°C), and the controller features a high-limit visual alarm set at 180°F (82°C).

Each 55-gallon drum Heater features a 10 ft (3 meter) power cord.

### KIT CONTENTS

- Immersion heater
- Plastic cap

### Optional items, available but not supplied

- 55-Gallon Drum top surface insulator
- 55-Gallon Drum wrap around (sides) insulator

#### **! WARNING**

Fire and shock hazard. This product is an electrical device that must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all the installation instructions.

- If heater's power cord is damaged, unplug the heater and remove from service immediately.
- Keep these instructions for future reference.
- De-energize all power circuits before installation or servicing.

### GENERAL INSTRUCTIONS



This electric immersion heater is designed for operation in liquid and is manufactured according to the standards and regulations that apply when the following conditions are met:

- The electric immersion heater is intended for stationary use in ordinary-area applications and hot water/liquid heating, -or- industrial water / liquid heating in an environment where there are no hazardous-area requirements.
- The entire heating element must be always immersed in water/liquid for safe operation (at least 18 inches), otherwise the heater will be damaged or destroyed. Be sure of this before connecting power.
- Because limescale on the elements may damage the electrical immersion heater, regular checks and any cleaning must be performed.
- When cleaning the outside of the terminal box, use a soft dry cloth.

### CONTROLLER OVERVIEW

The microprocessor controller regulates the heating process to the desired setpoint. The unit incorporates an electronic temperature limiter and thermal fuses as overheating protection.

See below for the control box and its layout and control buttons:

Number	Function	Description
1	Alarm LED (red)	Red LED flashes on activated alarm.
2	Heat LED (green)	Green LED lit whenever heater is active.
3	 (ON/OFF) Push button	Decreases Setpoint, or when pressed for about 3 seconds toggles unit ON / OFF.
4	 Push button	Increases setpoint, or when pressed for about 3 seconds accesses menu to change the setpoint on the hysteresis. Adjustable 2-20°F (1-10°C)
5	LED display	Displays current process value, setpoint, settings, alarm as well the status of the terminal control box.



### INSTALLATION


1. Remove original drum cap and set aside.
2. Install 55-Gallon drum Heater into supplied threaded cap, hand tight.
3. Install that cap into drum. Be sure that heater is immersed at least 12 inches.
4. Plug in, turn on, adjust setpoint / hysteresis.

### OPERATION OVERVIEW

If the heater loses power or is unplugged, and then power returns, the heater will pick up where it left off. If it was ON, it will turn ON again, and if it was OFF, it will stay OFF through a power cycle. If the heater has power, the display will show either the current setpoint or OFF.










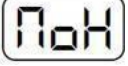


If the heater was OFF last, then connecting the unit to mains power causes the display to show the current software version, and then the unit turns back OFF.

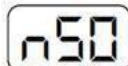
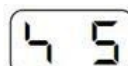


While OFF, the heater is voltage free. Press the  button for about 3 seconds and the control will switch ON and display current process temperature. Control is now active and the heater may engage. The green LED is on to indicate heater is ON.



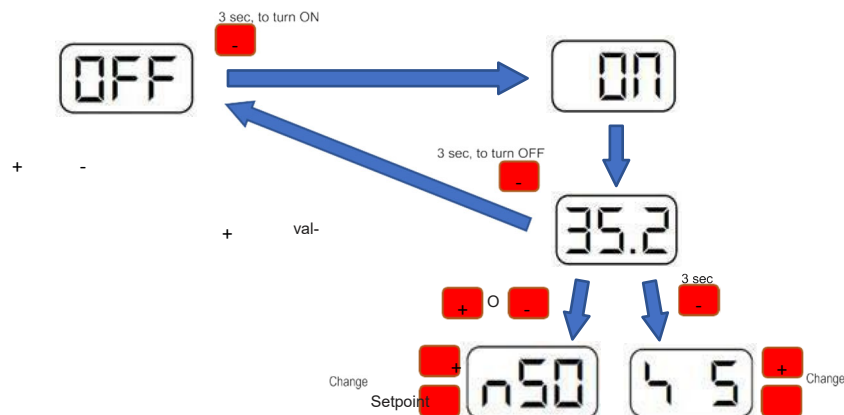
The display also shows alarm information. The table below describes how these alarms are shown:

Display	Alarm audio	Alarm LED	Description
	Pulsing 	Flashing 	Absence or Temperature Sensor Error. Alarm automatically resets after correcting errors.
	Pulsing 	Flashing 	High limit temperature violation 180°F (82°C). Alarms are reset manually by powering device OFF and then back ON.
	Continuous 	Flashing 	No water in the system (No Liquid). Alarms are reset manually by powering device OFF and then back ON.
	Continuous 	Flashing 	Error on Heater (No Heating). Alarms are reset manually by powering device OFF and then back ON.

Function designation	Parameter	Setpoint range
OPERATING SETPOINT		41-167°F (5-75°C)
ADJUSTING HYSTERESIS		2-20°F (1-10°C)

The following chart shows how to adjust all the operating parameters.

Unit will automatically exit this menu 5 seconds after last button press.



The operating menu is available when the terminal control box is set ON (ON) mode.

To change the setpoint, press **+** or **-** when the actual process value appears on the display. Then use **+** or **-** buttons to adjust.

To change control hysteresis, hold down **+** for 3 seconds. Controller will show **h** symbol on the

left side of the display. Then use **+** or **-** buttons to adjust value. Control hysteresis can be set from 2-20°F (1 to 10°C).

Controller will exit these menus automatically 5 seconds after the last button press. The description of the parameters is explained below:

### MAINTENANCE AND CLEANING

Because this unit is immersed directly into whatever liquid is to be heated, deposits may form onto the heating elements. When these are typical mineral deposits from water, BriskHeat recommends vinegar or a commercial Calcium/Lime/Rust cleaning solution.

If instead the heater was immersed in any other solution leaving residues, clean in accordance with that solution's MSDS.

If scrubbing is required, use a nonmetallic scouring pad such as Scotch-Brite.

### WARNING

- Conditions of maintenance and supervision ensure that only qualified persons service the installed systems.
- Fire and shock hazard - Damaged cables can cause electrical shock, arcing, and fire. Do not attempt to repair or energize unit with damaged cable.
- Continued circuit operation is necessary for safe operation of equipment.

### PRODUCT SPECIFICATIONS

Voltage Rating	120 / 240 VAC
Wattage	1000 W
Flange Connection Type	2" NPS
Sensor Type	Integral NTC 10 kΩ
Immersion Length	32 in (81 cm) overall length, bottom 12 in (30 cm) heated
Setpoint Range	41-167°F (5-75°C)
Measurement Range	-49°F to 383°F (-45°C to 195°C)
Ambient Temperature Range	41-122°F (5-50°C)
Temperature Display	3 digit, °F
Heater Element Exterior	Incoloy 840
Ingress Protection Rating	IP55
Accuracy	0.2°F (0.1°C)
Alarm	Fixed high-limit 180°F (82°C)
Power Cord	10 ft (3 m)
120 VAC	NEMA 5-15P
240 VAC	Bare wire leads
Circuit Protection	Integrated 106°C thermal fuse