

BriskHeat®

ENGLISH



IBC Tote Tank and 55-Gallon Drum Immersion Heater

**Digitally Controlled 1500W (IBC Tote Tank) and
1000W (55-Gallon Drum) Immersion Heaters**

Instruction Manual – English

	Read and understand this manual before operating or servicing this product. Failure to understand how to safely operate these products could result in an accident, causing serious injury or death. Qualified personnel only should operate these immersion heaters.
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INTRODUCTION

Thank you for purchasing a BriskHeat® IBC Tote Tank and 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® products, please contact BriskHeat® 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.

SAVE THESE INSTRUCTIONS!

Additional copies of this manual are available upon request.

! DANGER

Immediate hazards which **WILL** result in severe personal injury or death.

WARNING

Hazards or unsafe practices that **COULD** result in severe personal injury or death.

CAUTION

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

IMPORTANT SAFETY INSTRUCTIONS



! DANGER

Only individuals who have read and understood all operating instructions are qualified to operate this product.

Agency Approvals



240V Unit Only

! DANGER

- Do not immerse the controller box 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.
- Not for use in explosive environments.
- Not intended for flammable or highly combustible fluids.

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 electrical wiring.
- Continued circuit operation is necessary for safe operation of equipment.
- 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 from the power source and allow to cool prior to handling.
- Inspect heater before each 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 (liquid being heated is a heat sink).
- Do not repair damaged or faulty heaters.
- Do not crush or apply severe physical stress to heater or cord assembly.
- Disconnect heater when not in use.
- Use heater only for its intended applications.
- Use of the immersion heater with highly viscous fluids may cause build-up or scorching of the fluid; it is the responsibility of the user to ensure the fluid is properly mixed for uniform heating.
- Not intended for use in highly caustic or acidic fluids
- Ensure that the tote or barrel you are heating has an adequate temperature rating or the heater and its contents may become degraded or damaged.

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.

DESCRIPTION

The BriskHeat IBC Tote and Drum Immersion Heater is an integrated heater and thermostat designed to regulate the temperature of a tote or drum and its contents. It features an immersion heater with a digital thermostat and can be paired with a tote heater insulated jacket for maximum efficiency. The thermostat can be set to a maximum of 167°F (75°C), and the controller includes a high-limit visual alarm set at 180°F (82°C). Additionally, the unit contains an integrated 230°F (110°C) thermal fuse for added protection.

Each immersion heater includes a 10 ft (3 m) power cord with the option of striped leads for 240V operation or a 120V plug. There are eight distinct product configurations available. These are designated by the wattage of the heating element, the power-connection type (240V bare leads or 120V plug), and the temperature units preset on the controller box.

PRODUCT CONFIGURATIONS

PN	Description	Watts	Leads	Controller
DHI120	55-Gallon Drum Immersion	1000	120V Plug	°F
DHI240	55-Gallon Drum Immersion	1000	240V Bare Leads	°F
DHI240-C	55-Gallon Drum Immersion	1000	240V Bare Leads	°C
TTI120	IBC Tote Tank Immersion	1500	120V Plug	°F
TTI240	IBC Tote Tank Immersion	1500	240V Bare Leads	°F
TTI240C	IBC Tote Tank Immersion	1500	240V Bare Leads	°C

KIT CONTENTS

- Immersion heater
- Plastic tote cap
- Plastic bunghole adapter

Optional items, available but not supplied

- Top surface insulator
- 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 it from service immediately.
- De-energize all power circuits before installation or servicing
- Keep these instructions for future reference.

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 immersion heater is not intended for use with highly combustible or flammable fluids, nor shall it be used in explosive environments.
- The immersion heater is not intended for using highly caustic or acidic fluids.
- The heating element must always be immersed in water/liquid a minimum of 5in (12.7cm) from the bottom of the element for safe operation, otherwise the heater will not operate effectively and possibly be damaged or destroyed. Be sure of this before connecting power. The end of the heater's wells should not be above the liquid fill line. This ensures that the heater thermocouple and thermal fuse are sensing the temperature of the fluid.
- Because limescale on the elements may damage the electrical immersion heater, regular checks and any cleaning must be performed (see page 8, Maintenance and Cleaning).
- When cleaning the outside of the terminal box, use soft dry cloth.
- Use of the immersion heater with highly viscous fluids may cause build-up or scorching of the fluid; it is the responsibility of the user to ensure the fluid is properly mixed for uniform heating.

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 as the status of the terminal control box.



INSTALLATION

1. Hand tighten the bunghole adapter to the bunghole or tote cap.
2. Feed the immersion heater through the bunghole adapter and ensure the element is immersed at a minimum of 5 in (12.7cm). Ensure the heater is not touching the walls or floor of the container.
3. Plug in, turn on, adjust setpoint / hysteresis.

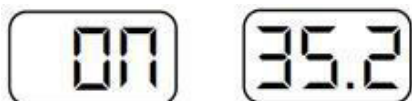
CONTROLLER PARAMETERS

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.



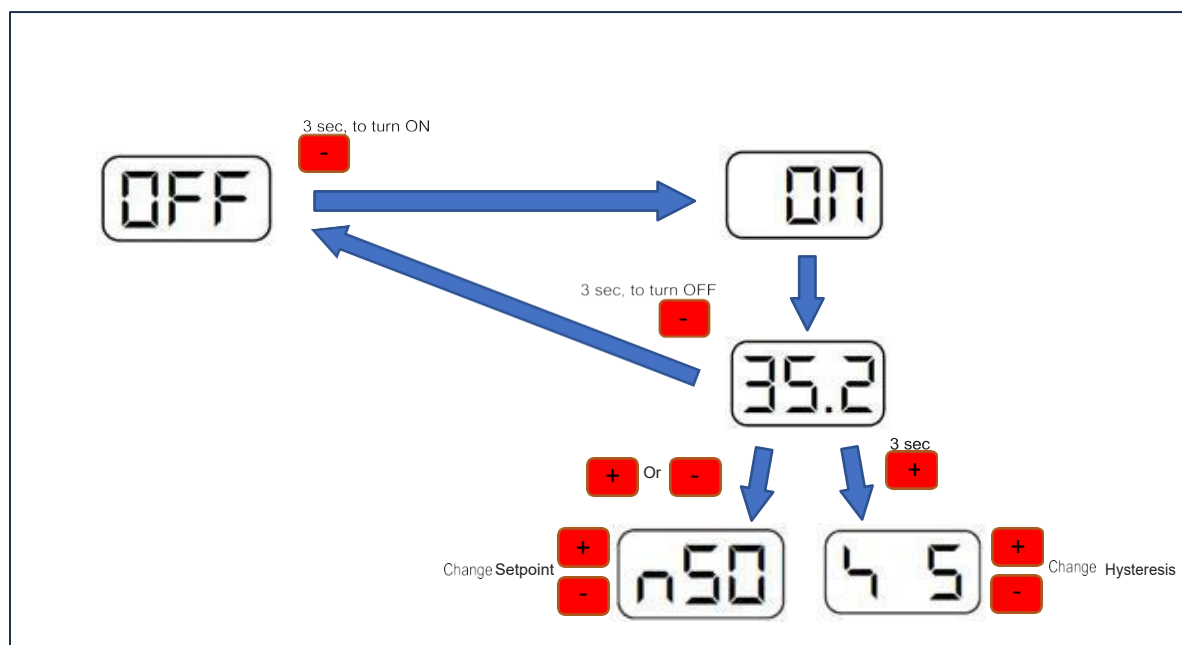
While OFF, the heater is voltage free. Press the  button for about 3 seconds and the control will switch ON and display current process temperature. Control is now active and the heater may engage. The green LED is on to indicate heater is ON.



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.

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 the **+** or **-** to adjust.

To change control hysteresis, hold down **+** for 3 seconds. Controller will show **4 5** 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).

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

Function designation	Parameter	Setpoint range
OPERATING SETPOINT	n50	41-167°F (5-75°C)
ADJUSTING HYSTERESIS	4 5	2-20°F (1-10°C)

MAINTENANCE AND CLEANING

Because this unit is immersed directly into whatever liquid is to be heated, deposits may form onto the heating elements.

- a. When these are typical mineral deposits from water, BriskHeat recommends vinegar or a commercial Calcium/Lime/Rust cleaning solution.
- b. 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®.

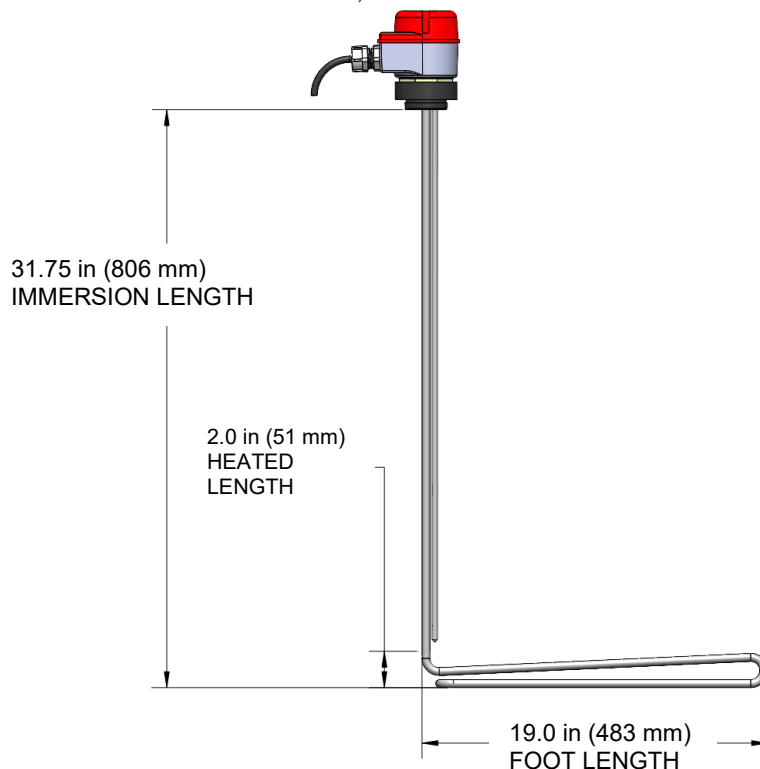
WARNING

- Only qualified persons shall 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 cab

PRODUCT SPECIFICATIONS

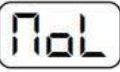
Voltage	120 or 240 VAC
Wattage	1000 or 1500 W
Sensor Type	Integral NTC 10 kΩ
Flange Connection Type	2 in (5.1 cm) NPT bushing
Immersion Length	31.75 in (806 mm) from bushing adapter
Immersion Foot Length	19.0 in (483 mm)
Heated Length	2 in (5.1 cm) bottom heated
Setpoint Range	41-122°F (5-50°C)
Measurement Range	-49-383°F (-45-195°C)
Temperature Display	3 digit 0.4 in (1.1 cm), °F or °C
Heater Element Exterior	Incoloy 840
Tube Well Exterior	321 Stainless Steel
Controller Ingress Protection Rating	IP55
Sensory Accuracy	0.2°F (0.1°C)
Alarm	Fixed high-limit visual at 180°F (82°C)
Circuit Protection	Integrated 230°F (110°C) thermal fuse
Power Cord	10 ft (3 m)
	120 VAC NEMA 5-15P
	240VAC bare wire leads

Dimensions are shown for reference only



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 **info@briskheat.com**.

PROBLEM	SOLUTION(S)
	• Temperature sensor failure. • Contact BriskHeat for guidance.
	• Process temperature beyond device high limit 180°F (82°C) • Reset Alarm by powering device OFF and then back ON.
	• No liquid to absorb thermal energy, fluid level too low. • Turn OFF and add liquid. • Reset Alarm by powering device OFF and then back ON.
	• Error on Heater (No heating). • May indicate heater break or blown thermal fuses. • Reset Alarm by powering device OFF and then back ON. If error persists, contact BriskHeat.
Tripped Circuit Breaker	• Validate that the circuit breaker is appropriate for the Amp requirement of heater. • Examine heater and cord for any damage.

WARRANTY INFORMATION

BriskHeat warrants to the original purchaser of this product for the period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever comes first. BriskHeat's obligation and the exclusive remedy under this warranty shall be limited to the repair or replacement, at BriskHeat's option, of any parts of the product which may prove defective under prescribed use and service following BriskHeat's examination, is determined by BriskHeat to be defective. The complete details of the warranty can be found online at www.briskheat.com or by contacting us at 1-800-848-7673 (toll free, U.S. / Canada) or 1-614-294-3376 (Worldwide).

BriskHeat®

Corporate Headquarters:
4800 Hilton Corporate Dr.
Columbus, OH 43232 USA

Europe:
P.O. Box 420124
44275 Dortmund, Germany

Toll Free: 800-848-7673

Phone: 614-294-3376

Fax: 614-294-3807

E-mail: info@briskheat.com

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