

# Immersion Heaters



| Immersion Heaters                              | Sheath Materials    | Max. Operating Temperatures<br>°F °C |     | Typical Max. Watt Densities<br>W/in <sup>2</sup> W/cm <sup>2</sup> |      | Page       |
|------------------------------------------------|---------------------|--------------------------------------|-----|--------------------------------------------------------------------|------|------------|
| <b>WATROD and FIREBAR® Screw Plug</b>          | Alloy 800/840       | 1600                                 | 870 | 120                                                                | 18.6 | <b>145</b> |
|                                                | Stainless steel     | 1200                                 | 650 | 120                                                                | 18.6 |            |
|                                                | Steel               | 750                                  | 400 | 120                                                                | 18.6 |            |
| <b>WATROD Screw Plug with Control Assembly</b> | Alloy 800           | 1600                                 | 870 | 60                                                                 | 9.3  | <b>218</b> |
| <b>WATROD ANSI Flange</b>                      | Alloy 800           | 1600                                 | 870 | 100                                                                | 15.5 | <b>220</b> |
|                                                | Stainless steel     | 1200                                 | 650 | 100                                                                | 15.5 |            |
|                                                | Steel               | 750                                  | 400 | 100                                                                | 15.5 |            |
| <b>WATROD Plate Flange</b>                     | Alloy 800/840       | 1600                                 | 870 | 60                                                                 | 9.3  | <b>282</b> |
|                                                | 304 stainless steel | 1200                                 | 650 | 100                                                                | 15.5 |            |
|                                                | Steel               | 750                                  | 400 | 30                                                                 | 4.7  |            |
| <b>WATROD and FIREBAR Square Flange</b>        | Alloy 800           | 1600                                 | 870 | 100                                                                | 15.5 | <b>288</b> |
| <b>WATROD and FIREBAR Bayonet/Pipe Insert</b>  | Alloy 800           | 1600                                 | 870 | 10                                                                 | 1.6  | <b>291</b> |
|                                                | Steel               | 750                                  | 400 | 10                                                                 | 1.6  |            |
| <b>FIREROD®</b>                                | Alloy 800           | 212                                  | 100 | 300                                                                | 46.5 | <b>293</b> |





# Immersion Heaters



## WATROD™ and FIREBAR® Screw Plug Immersion Heaters

Screw plug immersion heaters are ideal for direct immersion heating of liquids, including all types of oils and heat transfer solutions.

Available in a variety of sizes, Watlow® screw plug immersion heaters feature both WATROD™ round and FIREBAR® flat tubular elements.

Heating elements are hairpin bent and either welded or brazed into the screw plug—depending on element sheath and plug material compatibility.

General purpose terminal enclosures are standard; with optional moisture resistant, explosion resistant and explosion/moisture resistant enclosures available to meet specific application needs.

Optional thermostats provide convenient process temperature regulation.

### Performance Capabilities

- Watt densities up to 120 W/in<sup>2</sup> (18.6 W/cm<sup>2</sup>)
- Wattages up to 38 kilowatts
- UL® and CSA component recognition up to 480VAC and 600VAC respectively
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)
- Passivated 316 stainless steel sheath temperatures up to 1200°F (650°C)
- 304 stainless steel sheath temperatures up to 1200°F (650°C)
- Steel sheath temperatures up to 750°F (400°C)

### Features and Benefits

#### A variety of element sheath and screw plug materials

- Meets your application needs

#### Integral thermowells

- Provides convenient temperature sensor insertion and replacement without draining the fluid being heated

#### Terminal enclosures

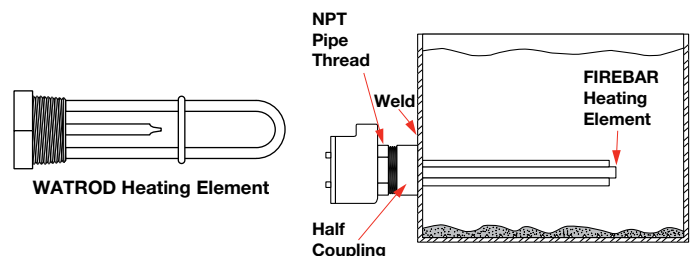
- Provides ability to be rotated to simplify connection with existing conduits

#### Welding or brazing WATROD and FIREBAR elements to the screw plug

- Provides a pressure tight seal

#### WATROD hairpins are repressed (recompacted)

- Maintains MgO density, dielectric strength, heat transfer and life



#### 2 1/2 in. (64 mm) NPT screw plug assemblies feature element support(s)

- Ensures proper spacing for maximizing heater performance and life

#### • Screw plug and element sizes:

|               |                                             |
|---------------|---------------------------------------------|
| 1 in. NPT     | 0.260 and 0.315 in. WATROD                  |
| 1 1/4 in. NPT | 0.260 and 0.315 in. WATROD<br>1 in. FIREBAR |
| 2 in. NPT     | 0.430 and 0.475 in. WATROD                  |
| 2 1/2 in. NPT | 0.430 and 0.475 in. WATROD<br>1 in. FIREBAR |

#### • Phase capability:

|                          |               |
|--------------------------|---------------|
| 1 in. NPT                | 1-Phase       |
| 1 1/4, 2, 2 1/2 in., NPT | 1- or 3-Phase |

UL® and CSA component recognition under File E52951 and 31388 respectively, see pages 559 to 562 for details.

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Typical Applications

- Water:
  - Deionized
  - Demineralized
  - Clean
  - Potable
  - Process
- Industrial water rinse tanks
- Vapor degreasers
- Hydraulic oil, crude, asphalt
- Lubricating oils at API specified watt densities
- Air and gas flow
- Caustic solutions
- Chemical baths
- Anti-freeze (glycol) solutions
- Paraffin

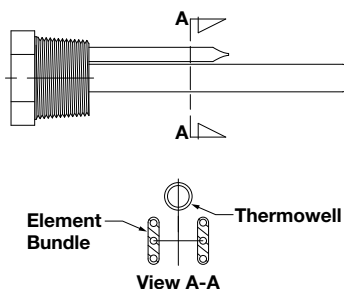
### Screw Plug Orientation

Correct element/thermowell orientation assures proper process temperature sensing.

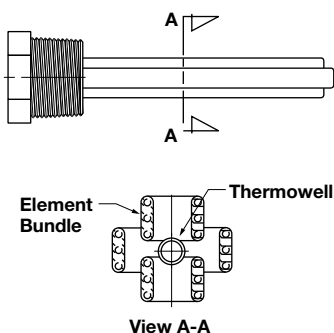
Correct horizontal mounting of WATROD and FIREBAR screw plugs is shown below. Correct orientation assures optimum performance and maximum heater life. Additional mounting information is provided in the *Installation and Maintenance Instructions*.

### FIREBAR Heating Elements

#### 1 1/4 in. NPT—One Element

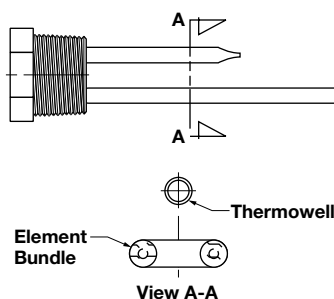


#### 2 1/2 in. NPT—Three Elements

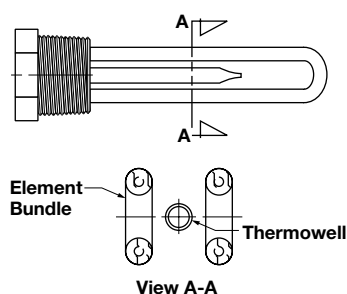


### WATROD Heating Element

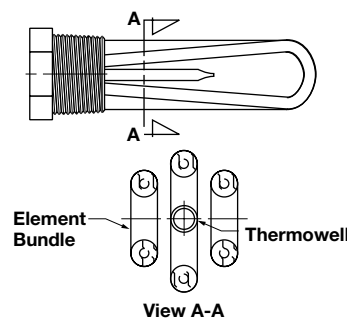
#### 1 in. NPT—One Element



#### 1 1/4 in. and 2 in. NPT—Two Elements



#### 2 in. and 2 1/2 in. NPT—Three Elements





# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Options

#### Terminal Enclosures

General purpose terminal enclosures, without thermostats, are available on all screw plug immersion heaters. To meet specific application requirements, Watlow offers the following optional terminal enclosures:

- General purpose with single- or double-pole thermostat
- Moisture-resistant or corrosion resistant—available with optional single- or double-pole thermostat
- Non-certified, explosion and moisture-resistant combination suitable for use in non-classified areas only—available with optional single- or double-pole thermostat

**Note:** Unless otherwise stated on the accompanying illustrations, both WATROD and FIREBAR screw plugs are centered on the terminal enclosure. To order, add the suffix letter(s) to the screw plug heater's base part number. This is depicted on the ordering example on page 217. Also, specify class and group, if applicable.

#### CSA Certified Enclosures

These enclosures are suitable for Class 1, Groups B, C and D classified areas. CSA certified enclosure 4 and/or explosion proof terminal enclosures protect wiring in hazardous gas environments. These terminal enclosures, covered under CSA File number 61707, are available on all WATROD and FIREBAR screw plug immersion heaters. For additional information, contact your Watlow representative.

To order, specify **CSA certified enclosure**, **process temperature** (°F), maximum **working pressure** of application (psig), **media** being heated and heater **mounting orientation** (horizontal or vertical) and **screw plug size**.

#### Pilot Light

The optional pilot light gives the operator visual indication of heater on or off power status.

The PL10 pilot light is configured to a maximum 250VAC and supplied with 6 in. (152 mm) leads.

The PL11 pilot light is rated for 480VAC and supplied with 4 in. (102 mm) leads.

#### Thermostats

To provide process temperature control, Watlow offers optional single-pole, single-throw (SPST) and double-pole, single-throw (DPST) thermostats.

Unless otherwise specified, thermostats are mounted inside the terminal enclosure. For details and ordering information, refer to *Thermostats* on pages 514 to 518. Please verify that the thermostat's sensing bulb O.D. is compatible with the screw plug's thermowell I.D.



#### Caution:

Certified explosion proof terminal enclosures are intended to provide explosion containment in the electrical termination/wiring enclosure only. No portion of the assembly outside of this enclosure is covered under this enclosure rating. Enclosure rating effectiveness may be compromised by abuse or misapplication.

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Options (Continued)

#### Thermocouples

ASTM Type J or K thermocouples offer extremely accurate sensing of process and/or sheath temperatures. A thermocouple may be inserted into the thermowell or attached to the heater's sheath.

Thermocouples are standardly supplied with 120 in. (3048 mm) leads. Unless otherwise specified, thermocouples are supplied with temperature ranges detailed on the *Thermocouple Types* chart.

Using a thermocouple requires an appropriate temperature and power controller and these must be purchased separately. Watlow offers a wide variety of temperature and power controllers to meet virtually all applications. Temperature controllers can be configured to accept process variable inputs, too. Contact your Watlow representative for details.

To order, specify **Type J** or **K** thermocouple and indicate if the thermocouple is for **process temperature sensing** or heater sheath **high-limit protection**. Please specify if the screw plug will be mounted **vertical** or **horizontal** in the tank. **If vertical, indicate if the housing is on top or bottom.**

If the screw plug heater is mounted in an in-line circulation heating application, indicate flow direction relative to the heater's enclosure.

#### Thermocouple Types

| ASTM Type | Conductor Characteristics  |                              | Recommended ① Temperature Range<br>°F (°C) |               |
|-----------|----------------------------|------------------------------|--------------------------------------------|---------------|
|           | Positive                   | Negative                     |                                            |               |
| J         | Iron<br>(Magnetic)         | Constantan<br>(Non-Magnetic) | 0 to 1000                                  | (-20 to 540)  |
| K         | Chromel®<br>(non-magnetic) | Alumel®<br>(Magnetic)        | 0 to 2000                                  | (-20 to 1100) |

① Type J and Type K thermocouples are rated 32 to 1382°F and 32 to 2282°F (0-750°C and 0-1250°C), respectively. Watlow does not recommend exceeding temperature ranges shown on this chart for the tubular product line.

#### Wattages and Voltages

Watlow routinely supplies screw plug immersion heaters with 120 to 480VAC as well as wattages from 250 watts to 38kW.

#### Sheath Materials

The following sheath materials are available on WATROD and FIREBAR heating elements:

##### Standard Sheath Materials

|         |                   |
|---------|-------------------|
| WATROD  | Alloy 800/840     |
|         | 316 SS            |
|         | Copper clad steel |
|         | Steel             |
| FIREBAR | Alloy 800         |

##### Exotic Sheath Materials

Contact your Watlow representative for details and availability.

#### External Finishing

##### Passivation

During the manufacturing process, particles of iron or tool steel may become embedded in the stainless steel or alloy sheath. If not removed, these particles may corrode, produce rust spots and/or contaminate the process. For critical applications, passivation will remove free iron from the sheath. To order, specify **passivation**.

##### Other Finishes

Bright annealing available to meet cosmetic demands.

#### Screw Plug Materials

The following screw plug materials are available:

##### Standard Screw Plug Materials

|         |                       |
|---------|-----------------------|
| WATROD  | 304 SS, Brass, 316 SS |
|         | Steel                 |
| FIREBAR | 304 SS                |

To order, specify **screw plug size** and **material**.

##### Made-to-Order Plug Materials

For both WATROD and FIREBAR, contact your Watlow representative about details and availability.

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Options (Continued)

#### Screw Plug Sizes

American National Standard Taper Pipe Thread form (NPT) plugs are standard, and in sizes 1, 1¼, 2, and 2½.

To order, specify **size** and **material**.

#### Screw Plug to Flange Adapters

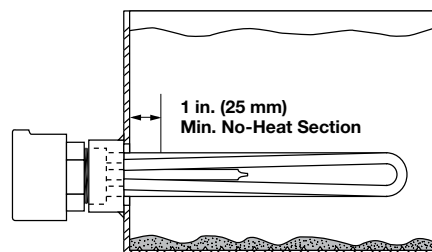
Screw plug to flange adapters permit replacing flange heaters with screw plug heaters. To order, specify the appropriate part number.

#### Screw Plug to Flange Adapters

| Screw Plug<br>to Flange<br>Adapter Sizes | Material | Estimated<br>Shipping Wt. |        | Part<br>Number |
|------------------------------------------|----------|---------------------------|--------|----------------|
| lbs                                      | (kg)     |                           |        |                |
| 1¼ to 3 in.-150#                         | Steel    | 13                        | (5.9)  | <b>125X3SA</b> |
| 2½ to 3 in.-150#                         | Steel    | 11                        | (5.0)  | <b>250X3SA</b> |
| 2½ to 4 in.-150#                         | Steel    | 16                        | (7.3)  | <b>250X4SA</b> |
| 2½ to 5 in.-150#                         | Steel    | 25                        | (11.3) | <b>250X5SA</b> |
| 2½ to 6 in.-150#                         | Steel    | 33                        | (15.0) | <b>250X6SA</b> |

#### Application Hints

- Select the recommended sheath material and watt density for the substance being heated. Use the *Supplemental Applications Chart* on pages 550 to 553. If unable to determine the correct heater material and type, contact your Watlow representative.
- Extend the element's no-heat section completely into the fluid being heated to help prevent premature heater failure. See illustration below for proper no-heat section placement.
- Locate screw plug heater low in the tank, but above the sludge level.



- Choose a FIREBAR element when the application requires a smaller system package or lower watt density.
- Ensure wiring integrity by making sure terminal enclosure temperature does not exceed 400°F (205°C).
- Keep electrical connections clean, dry and tight.
- Size power feeder wires in accordance with National Electrical Code® guidelines and other applicable codes.
- Minimize problems associated with low liquid level conditions by using a low liquid level sensor or sheath temperature high-limit control.
- Periodically remove the screw plug assembly for inspection and clean the heating element(s). This preventive maintenance will reduce premature failure and optimize heater performance.
- Refer to the *Installation and Maintenance Instructions* for correct orientation of FIREBAR elements. Correct element orientation to flow minimizes pressure drop, increases buoyancy force and heater performance.

# Immersion Heaters



## Extended Capabilities for WATROD and FIREBAR Screw Plug Immersion Heaters

### Pilot Light

Pilot lights may be attached to either single or double pole thermostats with general purpose or moisture resistant enclosures. For combination moisture and explosion resistant enclosures, contact your Watlow representative..

To order, refer to the *Ordering Information* on page 217.

### Wattages and Voltages

Watlow routinely supplies screw plug immersion heaters with 120 to 480VAC as well as wattages from 250 watts to 38kW. If required, Watlow may configure heaters with voltages and wattages outside these parameters. For more information on special voltage and wattage configurations, contact your Watlow representative.

### Extended Sheath Materials

The following sheath materials are available on WATROD heating elements:

#### Extended Sheath Materials

|        |                          |
|--------|--------------------------|
| WATROD | Hastelloy C276<br>Monel® |
|--------|--------------------------|

### Screw Plug Materials

The following screw plug materials are available:

#### Extended Screw Plug Materials

|        |                                           |
|--------|-------------------------------------------|
| WATROD | Brass<br>Carbon steel<br>304 SS<br>316 SS |
|--------|-------------------------------------------|

To order, specify **screw plug size** and **material**.

# Immersion Heaters

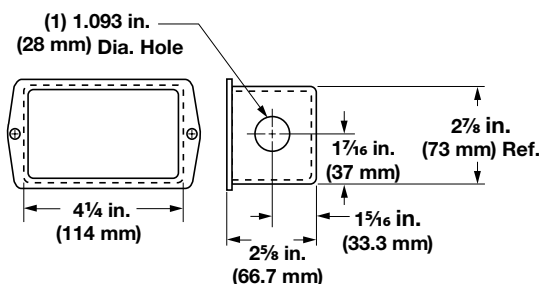


## WATROD and FIREBAR Screw Plug Immersion Heaters

### Optional Moisture Resistant Enclosures

#### With Single-Pole Thermostat

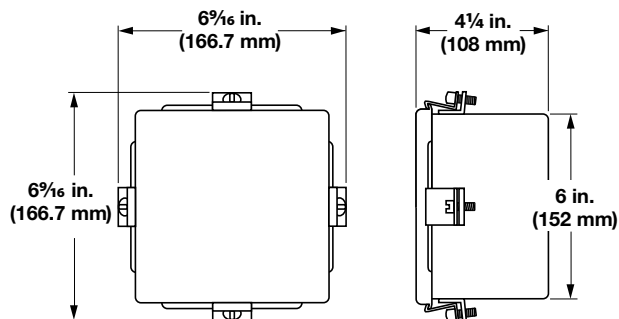
1 and 1 1/4 inch NPT-1 WATROD Element



**Note:** The enclosure is not centered on the WATROD screw plug heater.

#### With Single-Pole Thermostat

All 2 and 2 1/2 inch NPT



**Note:** The enclosure is not centered on the screw plug heater.

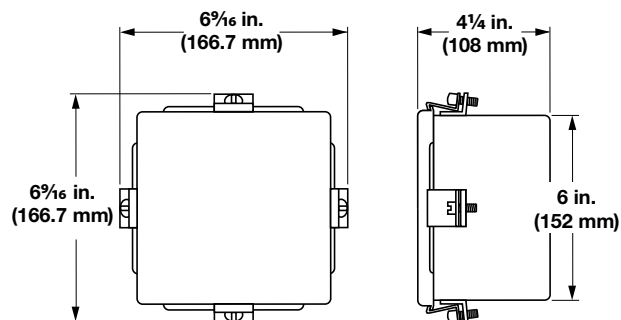
**To order:** Reference "W" in the *Ordering Information* section on page 217.

#### With Double-Pole Thermostat

1 1/4 inch NPT-2 WATROD Elements

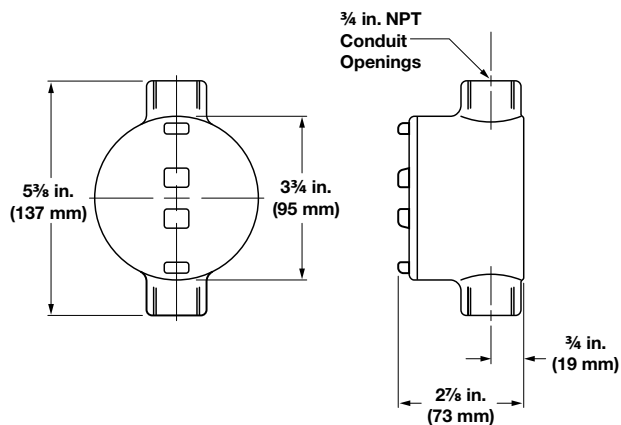
1 1/4 inch NPT-1 FIREBAR Element

All 2 and 2 1/2 inch NPT screw plugs



**Note:** The enclosure is not centered on the screw plug heater.

#### Without Thermostat



# Immersion Heaters

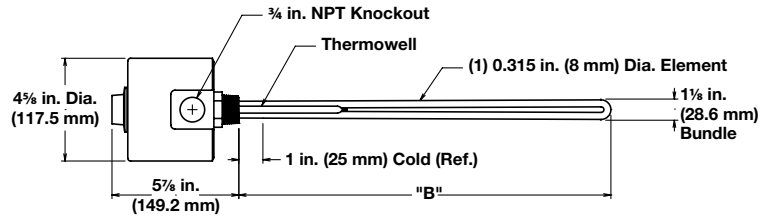


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Clean Water

- 1 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- General purpose enclosure



| Description                                                  | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 2 (30 to 250°F)      |                        |            | Type 3 (175 to 550°F)     |                        |            |
|--------------------------------------------------------------|-------|------|----|----------------------|----------------------|---------------------------|------------------------|------------|---------------------------|------------------------|------------|
|                                                              |       |      |    |                      |                      | Part Number               | WATCONNECT Part Number |            | Part Number               | WATCONNECT Part Number |            |
|                                                              |       |      |    |                      |                      | General Purpose Enclosure | Type J T/C             | Type K T/C | General Purpose Enclosure | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>Brass Plug<br>1-Alloy 800<br>Element | 120   | 0.50 | 1  | 4 1/2 (114.0)        | 3 (2)                | BCN4J1S2                  | C/F                    | C/F        | BCN4J1S3                  | C/F                    | C/F        |
|                                                              | 240   | 0.50 | 1  | 4 1/2 (114.0)        | 3 (2)                | BCN4J10S2                 | C/F                    | C/F        | BCN4J10S3                 | C/F                    | C/F        |
|                                                              | 120   | 0.75 | 1  | 6 1/2 (165.0)        | 3 (2)                | BCN6J1S2                  | C/F                    | C/F        | BCN6J1S3                  | C/F                    | C/F        |
|                                                              | 240   | 0.75 | 1  | 6 1/2 (165.0)        | 3 (2)                | BCN6J10S2                 | C/F                    | C/F        | BCN6J10S3                 | C/F                    | C/F        |
|                                                              | 120   | 1.00 | 1  | 6 5/8 (168.3)        | 3 (2)                | BCN6L1S2                  | C/F                    | C/F        | BCN6L1S3                  | C/F                    | C/F        |
|                                                              | 240   | 1.00 | 1  | 6 5/8 (168.3)        | 3 (2)                | BCN6L10S2                 | C/F                    | C/F        | BCN6L10S3                 | C/F                    | C/F        |
|                                                              | 120   | 1.25 | 1  | 8 (203.0)            | 4 (2)                | BCN8A1S2                  | C/F                    | C/F        | BCN8A1S3                  | C/F                    | C/F        |
|                                                              | 240   | 1.25 | 1  | 8 (203.0)            | 4 (2)                | BCN8A10S2                 | C/F                    | C/F        | BCN8A10S3                 | C/F                    | C/F        |
|                                                              | 120   | 1.50 | 1  | 10 5/8 (269.9)       | 4 (2)                | BCN10L1S2                 | C/F                    | C/F        | BCN10L1S3                 | C/F                    | C/F        |
|                                                              | 240   | 1.50 | 1  | 10 5/8 (269.9)       | 4 (2)                | BCN10L10S2                | C/F                    | C/F        | BCN10L10S3                | C/F                    | C/F        |
|                                                              | 120   | 2.00 | 1  | 12 1/2 (318.0)       | 5 (3)                | BCN12J1S2                 | C/F                    | C/F        | BCN12J1S3                 | C/F                    | C/F        |
|                                                              | 240   | 2.00 | 1  | 12 1/2 (318.0)       | 5 (3)                | BCN12J10S2                | C/F                    | C/F        | BCN12J10S3                | C/F                    | C/F        |
|                                                              | 120   | 2.50 | 1  | 14 3/4 (375.0)       | 5 (3)                | BCN14N1S2                 | C/F                    | C/F        | BCN14N1S3                 | C/F                    | C/F        |
|                                                              | 240   | 2.50 | 1  | 14 3/4 (375.0)       | 5 (3)                | BCN14N10S2                | C/F                    | C/F        | BCN14N10S3                | C/F                    | C/F        |
|                                                              | 120   | 3.00 | 1  | 16 3/4 (425.0)       | 6 (3)                | BCN16N1S2                 | C/F                    | C/F        | BCN16N1S3                 | C/F                    | C/F        |
|                                                              | 240   | 3.00 | 1  | 16 3/4 (425.0)       | 6 (3)                | BCN16N10S2                | C/F                    | C/F        | BCN16N10S3                | C/F                    | C/F        |
|                                                              | 240   | 4.00 | 1  | 21 (533.0)           | 6 (3)                | BCN21A10S2                | C/F                    | C/F        | BCN21A10S3                | C/F                    | C/F        |

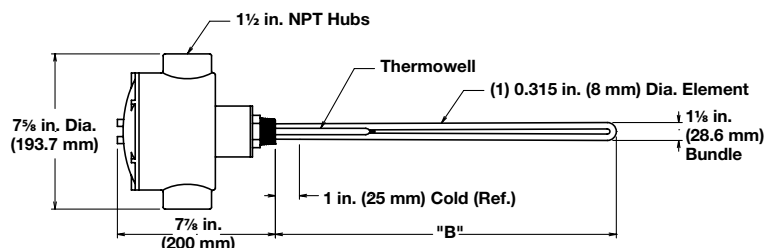
**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Clean Water

- 1 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                      | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 2 (30 to 250°F)                            |                        |               | Type 3 (175 to 550°F)                           |                        |               |
|--------------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|-------------------------------------------------|------------------------|---------------|-------------------------------------------------|------------------------|---------------|
|                                                                                                  |       |      |    |                      |                      | Part Number                                     | WATCONNECT Part Number |               | Part Number                                     | WATCONNECT Part Number |               |
|                                                                                                  |       |      |    |                      |                      | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>Brass Plug<br/>1-Alloy 800<br/>Element<br/>(9.3 W/cm<sup>2</sup>)</b> | 120   | 0.50 | 1  | 4 1/2 (114.0)        | 3 (2)                | BCN4J1C2                                        | C/F                    | C/F           | BCN4J1C3                                        | C/F                    | C/F           |
|                                                                                                  | 240   | 0.50 | 1  | 4 1/2 (114.0)        | 3 (2)                | BCN4J10C2                                       | C/F                    | C/F           | BCN4J10C3                                       | C/F                    | C/F           |
|                                                                                                  | 120   | 0.75 | 1  | 6 1/2 (165.0)        | 3 (2)                | BCN6J1C2                                        | C/F                    | C/F           | BCN6J1C3                                        | C/F                    | C/F           |
|                                                                                                  | 240   | 0.75 | 1  | 6 1/2 (165.0)        | 3 (2)                | BCN6J10C2                                       | C/F                    | C/F           | BCN6J10C3                                       | C/F                    | C/F           |
|                                                                                                  | 120   | 1.00 | 1  | 6 5/8 (168.3)        | 3 (2)                | BCN6L1C2                                        | C/F                    | C/F           | BCN6L1C3                                        | C/F                    | C/F           |
|                                                                                                  | 240   | 1.00 | 1  | 6 5/8 (168.3)        | 3 (2)                | BCN6L10C2                                       | C/F                    | C/F           | BCN6L10C3                                       | C/F                    | C/F           |
|                                                                                                  | 120   | 1.25 | 1  | 8 (203.0)            | 4 (2)                | BCN8A1C2                                        | C/F                    | C/F           | BCN8A1C3                                        | C/F                    | C/F           |
|                                                                                                  | 240   | 1.25 | 1  | 8 (203.0)            | 4 (2)                | BCN8A10C2                                       | C/F                    | C/F           | BCN8A10C3                                       | C/F                    | C/F           |
|                                                                                                  | 120   | 1.50 | 1  | 10 5/8 (269.9)       | 4 (2)                | BCN10L1C2                                       | C/F                    | C/F           | BCN10L1C3                                       | C/F                    | C/F           |
|                                                                                                  | 240   | 1.50 | 1  | 10 5/8 (269.9)       | 4 (2)                | BCN10L10C2                                      | C/F                    | C/F           | BCN10L10C3                                      | C/F                    | C/F           |
|                                                                                                  | 120   | 2.00 | 1  | 12 1/2 (318.0)       | 5 (3)                | BCN12J1C2                                       | C/F                    | C/F           | BCN12J1C3                                       | C/F                    | C/F           |
|                                                                                                  | 240   | 2.00 | 1  | 12 1/2 (318.0)       | 5 (3)                | BCN12J10C2                                      | C/F                    | C/F           | BCN12J10C3                                      | C/F                    | C/F           |
|                                                                                                  | 120   | 2.50 | 1  | 14 3/4 (375.0)       | 5 (3)                | BCN14N1C2                                       | C/F                    | C/F           | BCN14N1C3                                       | C/F                    | C/F           |
|                                                                                                  | 240   | 2.50 | 1  | 14 3/4 (375.0)       | 5 (3)                | BCN14N10C2                                      | C/F                    | C/F           | BCN14N10C3                                      | C/F                    | C/F           |
|                                                                                                  | 120   | 3.00 | 1  | 16 3/4 (425.0)       | 6 (3)                | BCN16N1C2                                       | C/F                    | C/F           | BCN16N1C3                                       | C/F                    | C/F           |
|                                                                                                  | 240   | 3.00 | 1  | 16 3/4 (425.0)       | 6 (3)                | BCN16N10C2                                      | C/F                    | C/F           | BCN16N10C3                                      | C/F                    | C/F           |
|                                                                                                  | 240   | 4.00 | 1  | 21 (533.0)           | 6 (3)                | BCN21A10C2                                      | C/F                    | C/F           | BCN21A10C3                                      | C/F                    | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

# Immersion Heaters



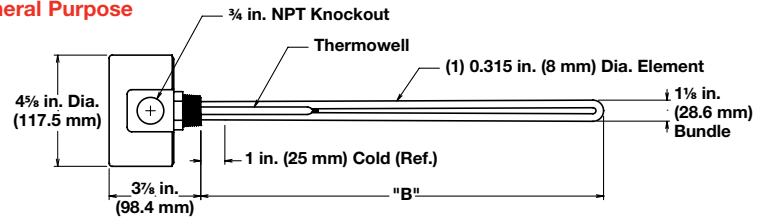
## WATROD and FIREBAR Screw Plug Immersion Heaters



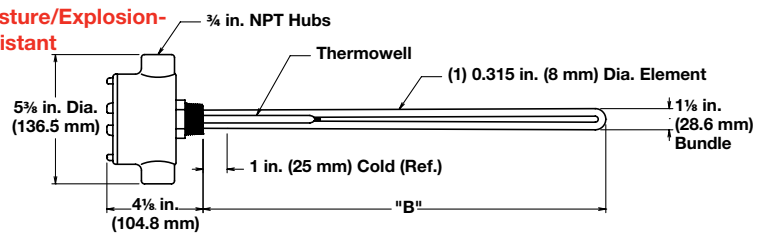
### Application: Clean Water

- 1 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                              | Volts | kW   | Ph | "B" Dim.<br>in. w(mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------|-------|------|----|-----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                          |       |      |    |                       | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| 60 W/in <sup>2</sup><br>Brass Plug<br>1-Alloy 800<br>Element<br>(9.3 W/cm <sup>2</sup> ) | 120   | 0.50 | 1  | 4 1/2 (114.0)         | BCN4J1S                      | 3 (2)                | C1-15                     | C1-12         | BCN4J1C                                    | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 240   | 0.50 | 1  | 4 1/2 (114.0)         | BCN4J10S                     | 3 (2)                | C1-17                     | C1-13         | BCN4J10C                                   | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 120   | 0.75 | 1  | 6 1/2 (165.0)         | BCN6J1S                      | 3 (2)                | C1-15                     | C1-12         | BCN6J1C                                    | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 240   | 0.75 | 1  | 6 1/2 (165.0)         | BCN6J10S                     | 3 (2)                | C1-17                     | C1-13         | BCN6J10C                                   | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 120   | 1.00 | 1  | 6 5/8 (168.3)         | BCN6L1S                      | 3 (2)                | C1-15                     | C1-12         | BCN6L1C                                    | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 240   | 1.00 | 1  | 6 5/8 (168.3)         | BCN6L10S                     | 3 (2)                | C1-17                     | C1-13         | BCN6L10C                                   | 6 (3)                | C/F                       | C/F           |
|                                                                                          | 120   | 1.25 | 1  | 8 (203.0)             | BCN8A1S                      | 4 (2)                | C1-15                     | C1-12         | BCN8A1C                                    | 7 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 1.25 | 1  | 8 (203.0)             | BCN8A10S                     | 4 (2)                | C1-17                     | C1-13         | BCN8A10C                                   | 7 (4)                | C/F                       | C/F           |
|                                                                                          | 120   | 1.50 | 1  | 10 5/8 (269.9)        | BCN10L1S                     | 4 (2)                | C1-15                     | C1-12         | BCN10L1C                                   | 7 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 1.50 | 1  | 10 5/8 (269.9)        | BCN10L10S                    | 4 (2)                | C1-17                     | C1-13         | BCN10L10C                                  | 7 (4)                | C/F                       | C/F           |
|                                                                                          | 120   | 2.00 | 1  | 12 1/2 (318.0)        | BCN12J1S                     | 5 (3)                | C1-15                     | C1-12         | BCN12J1C                                   | 8 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 2.00 | 1  | 12 1/2 (318.0)        | BCN12J10S                    | 5 (3)                | C1-17                     | C1-13         | BCN12J10C                                  | 8 (4)                | C/F                       | C/F           |
|                                                                                          | 120   | 2.50 | 1  | 14 3/4 (375.0)        | BCN14N1S                     | 5 (3)                | C/F                       | C/F           | BCN14N1C                                   | 8 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 2.50 | 1  | 14 3/4 (375.0)        | BCN14N10S                    | 5 (3)                | C1-17                     | C1-13         | BCN14N10C                                  | 8 (4)                | C/F                       | C/F           |
|                                                                                          | 120   | 3.00 | 1  | 16 3/4 (425.0)        | BCN16N1S                     | 6 (3)                | C/F                       | C/F           | BCN16N1C                                   | 9 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 3.00 | 1  | 16 3/4 (425.0)        | BCN16N10S                    | 6 (3)                | C1-17                     | C1-13         | BCN16N10C                                  | 9 (4)                | C/F                       | C/F           |
|                                                                                          | 240   | 4.00 | 1  | 21 (533.0)            | BCN21A10S                    | 6 (3)                | C1-17                     | C1-13         | BCN21A10C                                  | 9 (4)                | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition



# Immersion Heaters



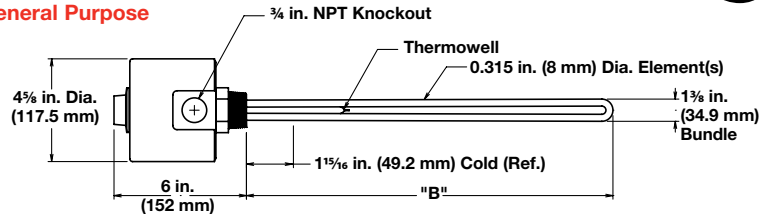
## WATROD and FIREBAR Screw Plug Immersion Heaters



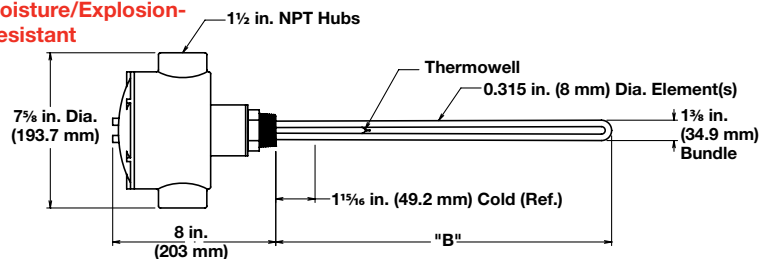
### Application: Clean Water

- 1 1/4 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                 | Volts   | kW   | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 2 (30 to 250°F)                            |                        |            | Type 3 (175 to 550°F)                           |                        |            |
|---------------------------------------------------------------------------------------------|---------|------|----|----------------------------------------|----------------------|-------------------------------------------------|------------------------|------------|-------------------------------------------------|------------------------|------------|
|                                                                                             |         |      |    |                                        |                      | Part Number                                     | WATCONNECT Part Number |            | Part Number                                     | WATCONNECT Part Number |            |
|                                                                                             |         |      |    |                                        |                      | General Purpose Enclosure                       | Type J T/C             | Type K T/C | General Purpose Enclosure                       | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>Brass Plug<br>1-Alloy 800<br>Element<br>(9.3 W/cm <sup>2</sup> )    | 120     | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 3 (2)                | BDN4G1S2                                        | C/F                    | C/F        | BDN4G1S3                                        | C/F                    | C/F        |
|                                                                                             | 240     | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 3 (2)                | BDN4G10S2                                       | C/F                    | C/F        | BDN4G10S3                                       | C/F                    | C/F        |
|                                                                                             | 120     | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 3 (2)                | BDN6G1S2                                        | C/F                    | C/F        | BDN6G1S3                                        | C/F                    | C/F        |
|                                                                                             | 240     | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 3 (2)                | BDN6G10S2                                       | C/F                    | C/F        | BDN6G10S3                                       | C/F                    | C/F        |
| 60 W/in <sup>2</sup> ④<br>Brass Plug<br>2-Alloy 800<br>Elements<br>(9.3 W/cm <sup>2</sup> ) | 120/240 | 1.00 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 4 (2)                | BEN4G6S2                                        | C/F                    | C/F        | BEN4G6S3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 1.50 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 4 (2)                | BEN6G6S2                                        | C/F                    | C/F        | BEN6G6S3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 2.00 | 1  | 8 <sup>1</sup> / <sub>2</sub> (216.0)  | 5 (3)                | BEN8J6S2                                        | C/F                    | C/F        | BEN8J6S3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 2.50 | 1  | 10 <sup>3</sup> / <sub>4</sub> (273.0) | 5 (3)                | BEN10N6S2                                       | C/F                    | C/F        | BEN10N6S3                                       | C/F                    | C/F        |
|                                                                                             | 120/240 | 3.00 | 1  | 15 (381.0)                             | 6 (3)                | BEN15A6S2                                       | C/F                    | C/F        | BEN15A6S3                                       | C/F                    | C/F        |
|                                                                                             | 240     | 4.00 | 1  | 19 (483.0)                             | 7 (4)                | BEN19A10S2                                      | C/F                    | C/F        | BEN19A10S3                                      | C/F                    | C/F        |
|                                                                                             | 240     | 5.00 | 1  | 23 <sup>1</sup> / <sub>2</sub> (597.0) | 8 (4)                | BEN23J10S2                                      | C/F                    | C/F        | BEN23J10S3                                      | C/F                    | C/F        |
|                                                                                             | 240     | 6.00 | 1  | 27 <sup>1</sup> / <sub>2</sub> (699.0) | 9 (4)                | BEN27J10S2                                      | C/F                    | C/F        | BEN27J10S3                                      | C/F                    | C/F        |
|                                                                                             |         |      |    |                                        |                      | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>Brass Plug<br>1-Alloy 800<br>Element<br>(9.3 W/cm <sup>2</sup> )    | 120     | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 7 (4)                | BDN4G1C2                                        | C/F                    | C/F        | BDN4G1C3                                        | C/F                    | C/F        |
|                                                                                             | 240     | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 7 (4)                | BDN4G10C2                                       | C/F                    | C/F        | BDN4G10C3                                       | C/F                    | C/F        |
|                                                                                             | 120     | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 7 (4)                | BDN6G1C2                                        | C/F                    | C/F        | BDN6G1C3                                        | C/F                    | C/F        |
|                                                                                             | 240     | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 7 (4)                | BDN6G10C2                                       | C/F                    | C/F        | BDN6G10C3                                       | C/F                    | C/F        |
| 60 W/in <sup>2</sup> ④<br>Brass Plug<br>2-Alloy 800<br>Elements<br>(9.3 W/cm <sup>2</sup> ) | 120/240 | 1.00 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | 8 (4)                | BEN4G6C2                                        | C/F                    | C/F        | BEN4G6C3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 1.50 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | 8 (4)                | BEN6G6C2                                        | C/F                    | C/F        | BEN6G6C3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 2.00 | 1  | 8 <sup>1</sup> / <sub>2</sub> (216.0)  | 9 (4)                | BEN8J6C2                                        | C/F                    | C/F        | BEN8J6C3                                        | C/F                    | C/F        |
|                                                                                             | 120/240 | 2.50 | 1  | 10 <sup>3</sup> / <sub>4</sub> (273.0) | 9 (4)                | BEN10N6C2                                       | C/F                    | C/F        | BEN10N6C3                                       | C/F                    | C/F        |
|                                                                                             | 120/240 | 3.00 | 1  | 15 (381.0)                             | 10 (5)               | BEN15A6C2                                       | C/F                    | C/F        | BEN15A6C3                                       | C/F                    | C/F        |
|                                                                                             | 240     | 4.00 | 1  | 19 (483.0)                             | 11 (5)               | BEN19A10C2                                      | C/F                    | C/F        | BEN19A10C3                                      | C/F                    | C/F        |
|                                                                                             | 240     | 5.00 | 1  | 23 <sup>1</sup> / <sub>2</sub> (597.0) | 12 (6)               | BEN23J10C2                                      | C/F                    | C/F        | BEN23J10C3                                      | C/F                    | C/F        |
|                                                                                             | 240     | 6.00 | 1  | 27 <sup>1</sup> / <sub>2</sub> (699.0) | 13 (6)               | BEN27J10C2                                      | C/F                    | C/F        | BEN27J10C3                                      | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



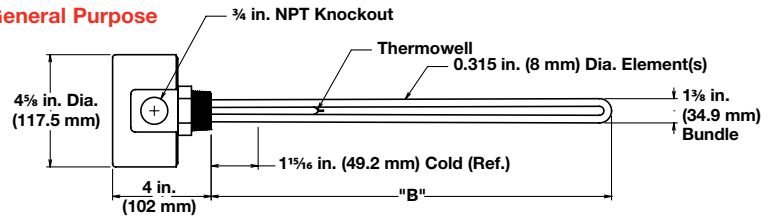
## WATROD and FIREBAR Screw Plug Immersion Heaters



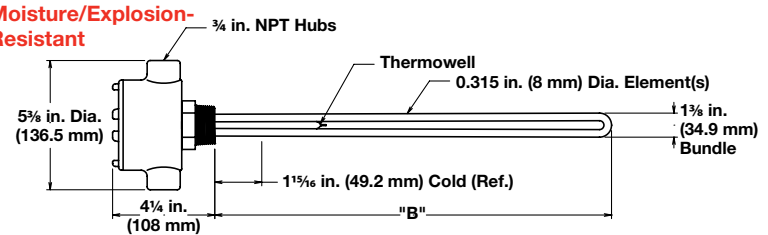
### Application: Clean Water

- 1 1/4 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                         | Volts       | kW   | Ph | "B" Dim.<br>in. (mm)                   | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT |               | 240V WATCONNECT |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT    |               |
|-----------------------------------------------------------------------------------------------------|-------------|------|----|----------------------------------------|------------------------------|----------------------|-----------------|---------------|-----------------|---------------|--------------------------------------------|----------------------|---------------|---------------|
|                                                                                                     |             |      |    |                                        | General Purpose<br>Enclosure |                      | Type J<br>T/C   | Type K<br>T/C | Type J<br>T/C   | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>Brass Plug<br/>1-Alloy 800<br/>Element<br/>(9.3 W/cm<sup>2</sup>)</b>    | 120         | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | <b>BDN4G1S</b>               | 3 (2)                | <b>C1-15</b>    | <b>C1-12</b>  | <b>N/A</b>      | <b>N/A</b>    | <b>BDN4G1C</b>                             | 6 (3)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 240         | 0.50 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | <b>BDN4G10S</b>              | 3 (2)                | <b>N/A</b>      | <b>N/A</b>    | <b>C1-17</b>    | <b>C1-13</b>  | <b>BDN4G10C</b>                            | 6 (3)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 120         | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | <b>BDN6G1S</b>               | 3 (2)                | <b>C1-15</b>    | <b>C1-12</b>  | <b>N/A</b>      | <b>N/A</b>    | <b>BDN6G1C</b>                             | 6 (3)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 240         | 0.75 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | <b>BDN6G10S</b>              | 3 (2)                | <b>N/A</b>      | <b>N/A</b>    | <b>C1-17</b>    | <b>C1-13</b>  | <b>BDN6G10C</b>                            | 6 (3)                | <b>C/F</b>    | <b>C/F</b>    |
| <b>60 W/in<sup>2</sup> ④<br/>Brass Plug<br/>2-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120/<br>240 | 1.00 | 1  | 4 <sup>3</sup> / <sub>8</sub> (111.1)  | <b>BEN4G6S</b>               | 4 (2)                | <b>C1-15</b>    | <b>C1-12</b>  | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN4G6C</b>                             | 7 (4)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 120/<br>240 | 1.50 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)  | <b>BEN6G6S</b>               | 4 (2)                | <b>C1-15</b>    | <b>C1-12</b>  | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN6G6C</b>                             | 7 (4)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 120/<br>240 | 2.00 | 1  | 8 <sup>1</sup> / <sub>2</sub> (216.0)  | <b>BEN8J6S</b>               | 5 (3)                | <b>C1-15</b>    | <b>C1-12</b>  | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN8J6C</b>                             | 8 (4)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 120/<br>240 | 2.50 | 1  | 10 <sup>3</sup> / <sub>4</sub> (273.0) | <b>BEN10N6S</b>              | 5 (3)                | <b>C/F</b>      | <b>C/F</b>    | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN10N6C</b>                            | 8 (4)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 120/<br>240 | 3.00 | 1  | 15 (381.0)                             | <b>BEN15A6S</b>              | 6 (3)                | <b>C/F</b>      | <b>C/F</b>    | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN15A6C</b>                            | 9 (4)                | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 240         | 4.00 | 1  | 19 (483.0)                             | <b>BEN19A10S</b>             | 7 (4)                | <b>N/A</b>      | <b>N/A</b>    | <b>C1-17</b>    | <b>C1-13</b>  | <b>BEN19A10C</b>                           | 10 (5)               | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 240         | 5.00 | 1  | 23 <sup>1</sup> / <sub>2</sub> (597.0) | <b>BEN23J10S</b>             | 8 (4)                | <b>N/A</b>      | <b>N/A</b>    | <b>C/F</b>      | <b>C/F</b>    | <b>BEN23J10C</b>                           | 11 (5)               | <b>C/F</b>    | <b>C/F</b>    |
|                                                                                                     | 240         | 6.00 | 1  | 27 <sup>1</sup> / <sub>2</sub> (699.0) | <b>BEN27J10S</b>             | 9 (4)                | <b>N/A</b>      | <b>N/A</b>    | <b>C/F</b>      | <b>C/F</b>    | <b>BEN27J10C</b>                           | 12 (6)               | <b>C/F</b>    | <b>C/F</b>    |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

N/A - Not available

# Immersion Heaters

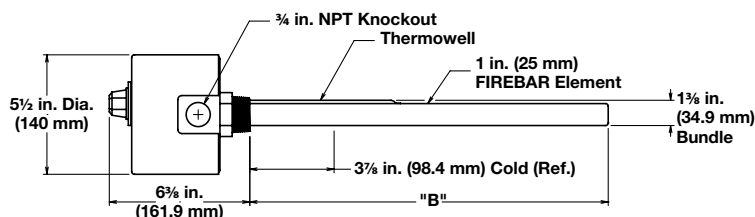


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Clean Water

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- With thermostat (DPST), Type 5A or 7A
- General purpose enclosure



| Description                                                                                | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)     |                        |            | Type 7A (100 to 550°F)    |                        |            |
|--------------------------------------------------------------------------------------------|-------|------|----|----------------------------------------|----------------------|---------------------------|------------------------|------------|---------------------------|------------------------|------------|
|                                                                                            |       |      |    |                                        |                      | Part Number               | WATCONNECT Part Number |            | Part Number               | WATCONNECT Part Number |            |
|                                                                                            |       |      |    |                                        |                      | General Purpose Enclosure | Type J T/C             | Type K T/C | General Purpose Enclosure | Type J T/C             | Type K T/C |
| 90 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(14 W/cm <sup>2</sup> ) | 240   | 1.5  | 1  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 6 (3)                | BDNF7R10S5A               | C/F                    | C/F        | BDNF7R10S7A               | C/F                    | C/F        |
|                                                                                            | 480   | 1.5  | 1  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 6 (3)                | BDNF7R11S5A               | C/F                    | C/F        | BDNF7R11S7A               | C/F                    | C/F        |
|                                                                                            | 240   | 3.0  | 1  | 11 <sup>1</sup> / <sub>8</sub> (282.6) | 7 (4)                | BDNF11G10S5A              | C/F                    | C/F        | BDNF11G10S7A              | C/F                    | C/F        |
|                                                                                            | 480   | 3.0  | 1  | 11 <sup>1</sup> / <sub>8</sub> (282.6) | 7 (4)                | BDNF11G11S5A              | C/F                    | C/F        | BDNF11G11S7A              | C/F                    | C/F        |
|                                                                                            | 240   | 5.0  | 3  | 16 <sup>1</sup> / <sub>8</sub> (409.6) | 8 (4)                | BDNF16G3S5A               | C/F                    | C/F        | BDNF16G3S7A               | C/F                    | C/F        |
|                                                                                            | 480   | 5.0  | 3  | 16 <sup>1</sup> / <sub>8</sub> (409.6) | 8 (4)                | BDNF16G5S5A               | C/F                    | C/F        | BDNF16G5S7A               | C/F                    | C/F        |
|                                                                                            | 240   | 6.5  | 3  | 19 <sup>1</sup> / <sub>8</sub> (485.8) | 9 (4)                | BDNF19G3S5A               | C/F                    | C/F        | BDNF19G3S7A               | C/F                    | C/F        |
|                                                                                            | 480   | 6.5  | 3  | 19 <sup>1</sup> / <sub>8</sub> (485.8) | 9 (4)                | BDNF19G5S5A               | C/F                    | C/F        | BDNF19G5S7A               | C/F                    | C/F        |
|                                                                                            | 240   | 8.5  | 3  | 24 <sup>3</sup> / <sub>8</sub> (619.1) | 10 (5)               | BDNF24L3S5A               | C/F                    | C/F        | BDNF24L3S7A               | C/F                    | C/F        |
|                                                                                            | 480   | 8.5  | 3  | 24 <sup>3</sup> / <sub>8</sub> (619.1) | 10 (5)               | BDNF24L5S5A               | C/F                    | C/F        | BDNF24L5S7A               | C/F                    | C/F        |
|                                                                                            | 240   | 10.5 | 3  | 29 <sup>5</sup> / <sub>8</sub> (752.5) | 11 (5)               | BDNF29R3S5A               | C/F                    | C/F        | BDNF29R3S7A               | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

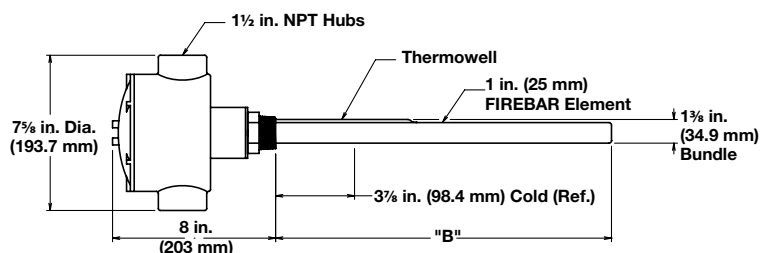
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⑧ Can be wired for 1-phase operation

## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Clean Water

- 1 1/4 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                  | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)                        |                           |               | Type 7A (100 to 550°F)                       |                           |               |
|------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|----------------------------------------------|---------------------------|---------------|----------------------------------------------|---------------------------|---------------|
|                                                                              |       |     |    |                      |                      | Part<br>Number                               | WATCONNECT<br>Part Number |               | Part<br>Number                               | WATCONNECT<br>Part Number |               |
|                                                                              |       |     |    |                      |                      | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C |
| <b>90 W/in² ⑧<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(14 W/cm²)</b> | 240   | 1.5 | 1  | 7 5/8 (193.7)        | 9 (4)                | BDNF7R10C5A                                  | C/F                       | C/F           | BDNF7R10C7A                                  | C/F                       | C/F           |
|                                                                              | 480   | 1.5 | 1  | 7 5/8 (193.7)        | 9 (4)                | BDNF7R11C5A                                  | C/F                       | C/F           | BDNF7R11C7A                                  | C/F                       | C/F           |
|                                                                              | 240   | 3.0 | 1  | 11 1/8 (282.6)       | 10 (5)               | BDNF11G10C5A                                 | C/F                       | C/F           | BDNF11G10C7A                                 | C/F                       | C/F           |
|                                                                              | 480   | 3.0 | 1  | 11 1/8 (282.6)       | 10 (5)               | BDNF11G11C5A                                 | C/F                       | C/F           | BDNF11G11C7A                                 | C/F                       | C/F           |
|                                                                              | 240   | 5.0 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G3C5A                                  | C/F                       | C/F           | BDNF16G3C7A                                  | C/F                       | C/F           |
|                                                                              | 480   | 5.0 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G5C5A                                  | C/F                       | C/F           | BDNF16G5C7A                                  | C/F                       | C/F           |
|                                                                              | 240   | 6.5 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G3C5A                                  | C/F                       | C/F           | BDNF19G3C7A                                  | C/F                       | C/F           |
|                                                                              | 480   | 6.5 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G5C5A                                  | C/F                       | C/F           | BDNF19G5C7A                                  | C/F                       | C/F           |
|                                                                              | 240   | 8.5 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L3C5A                                  | C/F                       | C/F           | BDNF24L3C7A                                  | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters

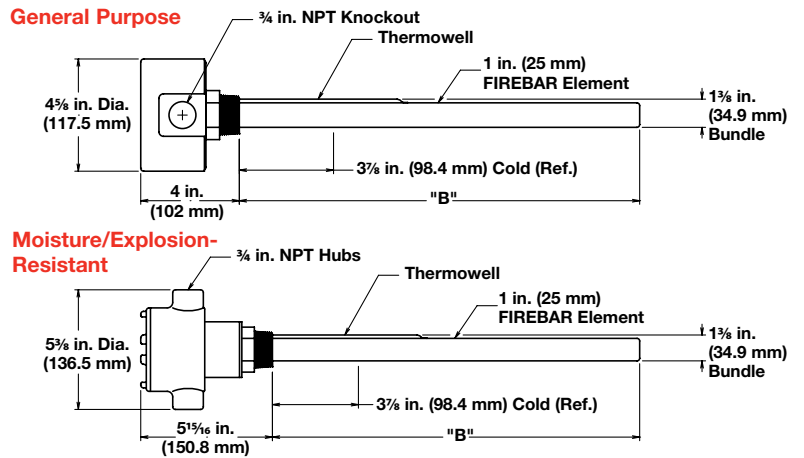


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Clean Water

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                 | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|---------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                             |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| 90 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(9.3 W/cm <sup>2</sup> ) | 240   | 1.5  | 1  | 7 5/8 (193.7)        | BDNF7R10S                    | 5 (3)                | C1-17                     | C1-13         | BDNF7R10C                                  | 8 (4)                | C/F                       | C/F           |
|                                                                                             | 480   | 1.5  | 1  | 7 5/8 (193.7)        | BDNF7R11S                    | 5 (3)                | C/F                       | C/F           | BDNF7R11C                                  | 8 (4)                | C/F                       | C/F           |
|                                                                                             | 240   | 3.0  | 1  | 11 1/8 (282.6)       | BDNF11G10S                   | 6 (3)                | C1-17                     | C1-13         | BDNF11G10C                                 | 9 (4)                | C/F                       | C/F           |
|                                                                                             | 480   | 3.0  | 1  | 11 1/8 (282.6)       | BDNF11G11S                   | 6 (3)                | C/F                       | C/F           | BDNF11G11C                                 | 9 (4)                | C/F                       | C/F           |
|                                                                                             | 240   | 5.0  | 3  | 16 1/8 (409.6)       | BDNF16G3S                    | 7 (4)                | C2-50                     | C2-92         | BDNF16G3C                                  | 10 (5)               | C3-94                     | C3-93         |
|                                                                                             | 480   | 5.0  | 3  | 16 1/8 (409.6)       | BDNF16G5S                    | 7 (4)                | C2-43                     | C2-35         | BDNF16G5C                                  | 10 (5)               | C3-116                    | C3-118        |
|                                                                                             | 240   | 6.5  | 3  | 19 1/8 (485.8)       | BDNF19G3S                    | 8 (4)                | C2-50                     | C2-92         | BDNF19G3C                                  | 11 (5)               | C3-94                     | C3-93         |
|                                                                                             | 480   | 6.5  | 3  | 19 1/8 (485.8)       | BDNF19G5S                    | 8 (4)                | C2-43                     | C2-35         | BDNF19G5C                                  | 11 (5)               | C3-116                    | C3-118        |
|                                                                                             | 240   | 8.5  | 3  | 24 3/8 (619.1)       | BDNF24L3S                    | 9 (4)                | C2-50                     | C2-92         | BDNF24L3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                             | 480   | 8.5  | 3  | 24 3/8 (619.1)       | BDNF24L5S                    | 9 (4)                | C2-43                     | C2-35         | BDNF24L5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                             | 240   | 10.5 | 3  | 29 5/8 (752.5)       | BDNF29R3S                    | 10 (5)               | C2-236                    | C2-214        | BDNF29R3C                                  | 13 (6)               | C3-114                    | C3-115        |
|                                                                                             | 480   | 10.5 | 3  | 29 5/8 (752.5)       | BDNF29R5S                    | 10 (5)               | C2-43                     | C2-35         | BDNF29R5C                                  | 13 (6)               | C3-116                    | C3-118        |
|                                                                                             | 240   | 12.7 | 3  | 34 5/8 (879.5)       | BDNF34R3S                    | 11 (5)               | C2-236                    | C2-214        | BDNF34R3C                                  | 14 (7)               | C3-114                    | C3-115        |
|                                                                                             | 480   | 12.7 | 3  | 34 5/8 (879.5)       | BDNF34R5S                    | 11 (5)               | C2-43                     | C2-35         | BDNF34R5C                                  | 14 (7)               | C3-116                    | C3-118        |
|                                                                                             | 240   | 17.0 | 3  | 45 1/8 (1146.2)      | BDNF45G3S                    | 13 (6)               | C2-236                    | C2-214        | BDNF45G3C                                  | 16 (8)               | C3-114                    | C3-115        |
|                                                                                             | 480   | 17.0 | 3  | 45 1/8 (1146.2)      | BDNF45G5S                    | 13 (6)               | C2-43                     | C2-35         | BDNF45G5C                                  | 16 (8)               | C3-116                    | C3-118        |
|                                                                                             | 480   | 21.5 | 3  | 55 5/8 (1412.9)      | BDNF55R5S                    | 15 (7)               | C2-225                    | C2-226        | BDNF55R5C                                  | 18 (9)               | C3-117                    | C3-119        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

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# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

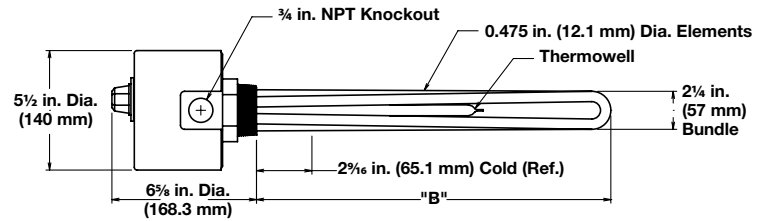


### Application: Clean Water

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure



|                                                                                                          |             |     |    |                      |                      | Type 4<br>(30 to 110°F)         |                           |               | Type 5A<br>(60 to 250°F)        |                           |               | Type 7A<br>(100 to 550°F)       |                           |               |
|----------------------------------------------------------------------------------------------------------|-------------|-----|----|----------------------|----------------------|---------------------------------|---------------------------|---------------|---------------------------------|---------------------------|---------------|---------------------------------|---------------------------|---------------|
| Description                                                                                              | Volts       | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number                  | WATCONNECT<br>Part Number |               | Part<br>Number                  | WATCONNECT<br>Part Number |               | Part<br>Number                  | WATCONNECT<br>Part Number |               |
|                                                                                                          |             |     |    |                      |                      | General<br>Purpose<br>Enclosure | Type J<br>T/C             | Type K<br>T/C | General<br>Purpose<br>Enclosure | Type J<br>T/C             | Type K<br>T/C | General<br>Purpose<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup> ④<br/>304 SS<br/>Plug<br/>2-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120/<br>240 | 2.0 | 1  | 8 1/8 (206.4)        | 5 (3)                | BGN78C6S4                       | C/F                       | C/F           | BGN78C6S5A                      | C/F                       | C/F           | BGN78C6S7A                      | C/F                       | C/F           |
|                                                                                                          | 240/<br>480 | 2.0 | 1  | 8 1/8 (206.4)        | 5 (3)                | BGN78C7S4                       | C/F                       | C/F           | BGN78C7S5A                      | C/F                       | C/F           | BGN78C7S7A                      | C/F                       | C/F           |
|                                                                                                          | 120/<br>240 | 3.0 | 1  | 11 1/8 (282.6)       | 6 (3)                | BGN711C6S4                      | C/F                       | C/F           | BGN711C6S5A                     | C/F                       | C/F           | BGN711C6S7A                     | C/F                       | C/F           |
|                                                                                                          | 240/<br>480 | 3.0 | 1  | 11 1/8 (282.6)       | 6 (3)                | BGN711C7S4                      | C/F                       | C/F           | BGN711C7S5A                     | C/F                       | C/F           | BGN711C7S7A                     | C/F                       | C/F           |
|                                                                                                          | 120/<br>240 | 4.0 | 1  | 15 1/8 (384.2)       | 7 (4)                | BGN715C6S4                      | C/F                       | C/F           | BGN715C6S5A                     | C/F                       | C/F           | BGN715C6S7A                     | C/F                       | C/F           |
|                                                                                                          | 120/<br>240 | 5.0 | 1  | 18 1/8 (460.4)       | 7 (4)                | BGN718C6S4                      | C/F                       | C/F           | BGN718C6S5A                     | C/F                       | C/F           | BGN718C6S7A                     | C/F                       | C/F           |
| <b>60 W/in<sup>2</sup><br/>304 SS<br/>Plug<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b>   | 240         | 3.0 | 3  | 8 1/8 (206.4)        | 6 (3)                | BHN78C3S4                       | C/F                       | C/F           | BHN78C3S5A                      | C/F                       | C/F           | BHN78C3S7A                      | C/F                       | C/F           |
|                                                                                                          | 480         | 3.0 | 3  | 8 1/8 (206.4)        | 6 (3)                | BHN68C13S4                      | C/F                       | C/F           | BHN68C13S5A                     | C/F                       | C/F           | BHN68C13S7A                     | C/F                       | C/F           |
|                                                                                                          | 240         | 4.5 | 3  | 11 1/8 (282.6)       | 7 (4)                | BHN711C3S4                      | C/F                       | C/F           | BHN711C3S5A                     | C/F                       | C/F           | BHN711C3S7A                     | C/F                       | C/F           |
|                                                                                                          | 480         | 4.5 | 3  | 11 1/8 (282.6)       | 7 (4)                | BHN611C13S4                     | C/F                       | C/F           | BHN611C13S5A                    | C/F                       | C/F           | BHN611C13S7A                    | C/F                       | C/F           |
|                                                                                                          | 240         | 6.0 | 3  | 15 1/8 (384.2)       | 8 (4)                | BHN715C3S4                      | C/F                       | C/F           | BHN715C3S5A                     | C/F                       | C/F           | BHN715C3S7A                     | C/F                       | C/F           |
|                                                                                                          | 480         | 6.0 | 3  | 15 1/8 (384.2)       | 8 (4)                | BHN715C5S4                      | C/F                       | C/F           | BHN715C5S5A                     | C/F                       | C/F           | BHN715C5S7A                     | C/F                       | C/F           |
|                                                                                                          | 240         | 7.5 | 3  | 18 1/8 (460.4)       | 8 (4)                | BHN718C3S4                      | C/F                       | C/F           | BHN718C3S5A                     | C/F                       | C/F           | BHN718C3S7A                     | C/F                       | C/F           |
|                                                                                                          | 240         | 9.0 | 3  | 21 1/8 (536.6)       | 9 (4)                | BHN721C3S4                      | C/F                       | C/F           | BHN721C3S5A                     | C/F                       | C/F           | BHN721C3S7A                     | C/F                       | C/F           |

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④ Wired for higher voltage

# Immersion Heaters



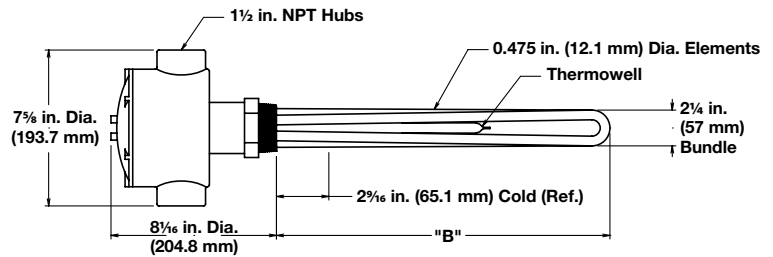
## WATROD and FIREBAR Screw Plug Immersion Heaters

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- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                          | Volts   | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs<br>(kg) | Type 4 (30 to 110°F) |                           |               | Type 5A (60 to 250°F) |                           |               | Type 7A (100 to 550°F) |                           |               |
|------------------------------------------------------------------------------------------------------|---------|-----|----|----------------------|-------------------------|----------------------|---------------------------|---------------|-----------------------|---------------------------|---------------|------------------------|---------------------------|---------------|
|                                                                                                      |         |     |    |                      |                         | Part<br>Number       | WATCONNECT<br>Part Number |               | Part<br>Number        | WATCONNECT<br>Part Number |               | Part<br>Number         | WATCONNECT<br>Part Number |               |
|                                                                                                      |         |     |    |                      |                         |                      | Type J<br>T/C             | Type K<br>T/C |                       | Type J<br>T/C             | Type K<br>T/C |                        | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120/240 | 2.0 | 1  | 8 1/8 (206.4)        | 8 (4)                   | BGN78C6C4            | C/F                       | C/F           | BGN78C6C5A            | C/F                       | C/F           | BGN78C6C7A             | C/F                       | C/F           |
|                                                                                                      | 240/480 | 2.0 | 1  | 8 1/8 (206.4)        | 8 (4)                   | BGN78C7C4            | C/F                       | C/F           | BGN78C7C5A            | C/F                       | C/F           | BGN78C7C7A             | C/F                       | C/F           |
|                                                                                                      | 120/240 | 3.0 | 1  | 11 1/8 (282.6)       | 9 (4)                   | BGN711C6C4           | C/F                       | C/F           | BGN711C6C5A           | C/F                       | C/F           | BGN711C6C7A            | C/F                       | C/F           |
|                                                                                                      | 240/480 | 3.0 | 1  | 11 1/8 (282.6)       | 9 (4)                   | BGN711C7C4           | C/F                       | C/F           | BGN711C7C5A           | C/F                       | C/F           | BGN711C7C7A            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 4.0 | 1  | 15 1/8 (384.2)       | 10 (5)                  | BGN715C6C4           | C/F                       | C/F           | BGN715C6C5A           | C/F                       | C/F           | BGN715C6C7A            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 5.0 | 1  | 18 1/8 (460.4)       | 10 (5)                  | BGN718C6C4           | C/F                       | C/F           | BGN718C6C5A           | C/F                       | C/F           | BGN718C6C7A            | C/F                       | C/F           |
| <b>60 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b>   | 240     | 3.0 | 3  | 8 1/8 (206.4)        | 9 (4)                   | BHN78C3C4            | C/F                       | C/F           | BHN78C3C5A            | C/F                       | C/F           | BHN78C3C7A             | C/F                       | C/F           |
|                                                                                                      | 480     | 3.0 | 3  | 8 1/8 (206.4)        | 9 (4)                   | BHN68C13C4           | C/F                       | C/F           | BHN68C13C5A           | C/F                       | C/F           | BHN68C13C7A            | C/F                       | C/F           |
|                                                                                                      | 240     | 4.5 | 3  | 11 1/8 (282.6)       | 10 (5)                  | BHN711C3C4           | C/F                       | C/F           | BHN711C3C5A           | C/F                       | C/F           | BHN711C3C7A            | C/F                       | C/F           |
|                                                                                                      | 480     | 4.5 | 3  | 11 1/8 (282.6)       | 10 (5)                  | BHN611C13C4          | C/F                       | C/F           | BHN611C13C5A          | C/F                       | C/F           | BHN611C13C7A           | C/F                       | C/F           |
|                                                                                                      | 240     | 6.0 | 3  | 15 1/8 (384.2)       | 11 (5)                  | BHN715C3C4           | C/F                       | C/F           | BHN715C3C5A           | C/F                       | C/F           | BHN715C3C7A            | C/F                       | C/F           |
|                                                                                                      | 480     | 6.0 | 3  | 15 1/8 (384.2)       | 11 (5)                  | BHN715C5C4           | C/F                       | C/F           | BHN715C5C5A           | C/F                       | C/F           | BHN715C5C7A            | C/F                       | C/F           |
|                                                                                                      | 240     | 7.5 | 3  | 18 1/8 (460.4)       | 11 (5)                  | BHN718C3C4           | C/F                       | C/F           | BHN718C3C5A           | C/F                       | C/F           | BHN718C3C7A            | C/F                       | C/F           |
|                                                                                                      | 240     | 9.0 | 3  | 21 1/8 (536.6)       | 12 (6)                  | BHN721C3C4           | C/F                       | C/F           | BHN721C3C5A           | C/F                       | C/F           | BHN721C3C7A            | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)



# Immersion Heaters



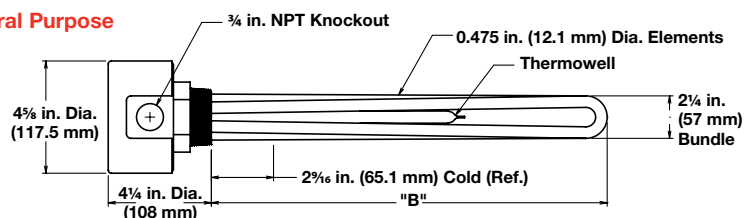
## WATROD and FIREBAR Screw Plug Immersion Heaters



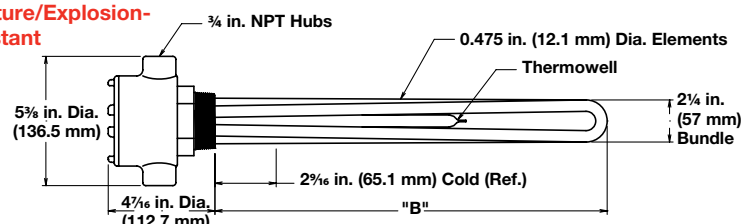
### Application: Clean Water

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts   | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number |               | 240V WATCONNECT<br>Part Number |               | 480V WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|---------|------|----|----------------------|------------------------------|----------------------|--------------------------------|---------------|--------------------------------|---------------|--------------------------------|---------------|
|                                                                                                      |         |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C |
| <b>60 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120/240 | 2.0  | 1  | 8 1/8 (206.4)        | BGN78C6S                     | 4 (2)                | C1-15                          | C1-12         | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                      | 240/480 | 2.0  | 1  | 8 1/8 (206.4)        | BGN78C7S                     | 4 (2)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                      | 120/240 | 3.0  | 1  | 11 1/8 (282.6)       | BGN711C6S                    | 5 (3)                | C/F                            | C/F           | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                      | 240/480 | 3.0  | 1  | 11 1/8 (282.6)       | BGN711C7S                    | 5 (3)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                      | 120/240 | 4.0  | 1  | 15 1/8 (384.2)       | BGN715C6S                    | 6 (3)                | C/F                            | C/F           | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                      | 240/480 | 4.0  | 1  | 15 1/8 (384.2)       | BGN715C7S                    | 6 (3)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                      | 120/240 | 5.0  | 1  | 18 1/8 (460.4)       | BGN718C6S                    | 6 (3)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                      | 240/480 | 5.0  | 1  | 18 1/8 (460.4)       | BGN718C7S                    | 6 (3)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 6.0  | 1  | 21 1/8 (536.6)       | BGN721C7S                    | 7 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 8.0  | 1  | 26 5/8 (676.3)       | BGN726L7S                    | 7 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 10.0 | 1  | 32 1/8 (816.0)       | BGN732C7S                    | 8 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
| <b>60 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b>   | 120     | 3.0  | 1  | 8 1/8 (206.4)        | BHN78C1S                     | 5 (3)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                      | 240     | 3.0  | 3  | 8 1/8 (206.4)        | BHN78C3S                     | 5 (3)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                      | 480     | 3.0  | 3  | 8 1/8 (206.4)        | BHN68C13S                    | 5 (3)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 120     | 4.5  | 1  | 11 1/8 (282.6)       | BHN711C1S                    | 6 (3)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                      | 240     | 4.5  | 3  | 11 1/8 (282.6)       | BHN711C3S                    | 6 (3)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                      | 480     | 4.5  | 3  | 11 1/8 (282.6)       | BHN611C13S                   | 6 (3)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 240     | 6.0  | 3  | 15 1/8 (384.2)       | BHN715C3S                    | 7 (4)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                      | 480     | 6.0  | 3  | 15 1/8 (384.2)       | BHN715C5S                    | 7 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 240     | 7.5  | 3  | 18 1/8 (460.4)       | BHN718C3S                    | 7 (4)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                      | 480     | 7.5  | 3  | 18 1/8 (460.4)       | BHN718C5S                    | 7 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 240     | 9.0  | 3  | 21 1/8 (536.6)       | BHN721C3S                    | 8 (4)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                      | 480     | 9.0  | 3  | 21 1/8 (536.6)       | BHN721C5S                    | 8 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 240     | 12.0 | 3  | 26 5/8 (676.3)       | BHN726L3S                    | 8 (4)                | N/A                            | N/A           | C2-236                         | C2-214        | N/A                            | N/A           |
|                                                                                                      | 480     | 12.0 | 3  | 26 5/8 (676.3)       | BHN726L5S                    | 8 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                      | 240     | 15.0 | 3  | 32 1/8 (816.0)       | BHN732C3S                    | 9 (4)                | N/A                            | N/A           | C2-236                         | C2-214        | N/A                            | N/A           |
|                                                                                                      | 480     | 15.0 | 3  | 32 1/8 (816.0)       | BHN732C5S                    | 9 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

④ Wired for higher voltage

⑤ No third party recognition



# Immersion Heaters



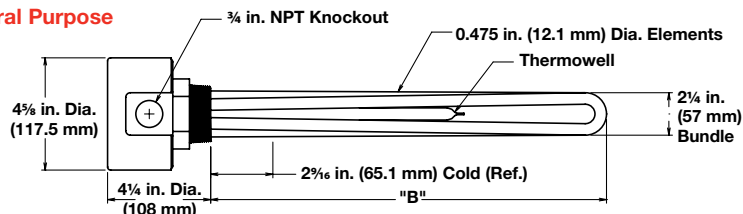
## WATROD and FIREBAR Screw Plug Immersion Heaters



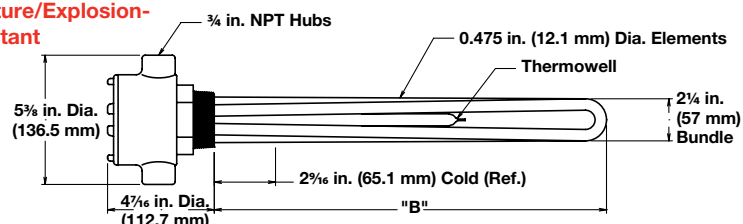
### Application: Clean Water

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts   | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number                             | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number |               | 240V WATCONNECT<br>Part Number |               | 480V WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|---------|------|----|----------------------|--------------------------------------------|----------------------|--------------------------------|---------------|--------------------------------|---------------|--------------------------------|---------------|
|                                                                                                      |         |      |    |                      | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C |
| <b>60 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120/240 | 2.0  | 1  | 8 1/8 (206.4)        | <b>BGN78C6C</b>                            | 7 (4)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                      | 240/480 | 2.0  | 1  | 8 1/8 (206.4)        | <b>BGN78C7C</b>                            | 7 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 120/240 | 3.0  | 1  | 11 1/8 (282.6)       | <b>BGN711C6C</b>                           | 8 (4)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                      | 240/480 | 3.0  | 1  | 11 1/8 (282.6)       | <b>BGN711C7C</b>                           | 8 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 120/240 | 4.0  | 1  | 15 1/8 (384.2)       | <b>BGN715C6C</b>                           | 9 (4)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                      | 240/480 | 4.0  | 1  | 15 1/8 (384.2)       | <b>BGN715C7C</b>                           | 9 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 120/240 | 5.0  | 1  | 18 1/8 (460.4)       | <b>BGN718C6C</b>                           | 9 (4)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                      | 240/480 | 5.0  | 1  | 18 1/8 (460.4)       | <b>BGN718C7C</b>                           | 9 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 6.0  | 1  | 21 1/8 (536.6)       | <b>BGN721C7C</b>                           | 10 (5)               | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 8.0  | 1  | 26 5/8 (676.3)       | <b>BGN726L7C</b>                           | 10 (5)               | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                      | 240/480 | 10.0 | 1  | 32 1/8 (816.0)       | <b>BGN732C7C</b>                           | 11 (5)               | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
| <b>60 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b>   | 120     | 3.0  | 1  | 8 1/8 (206.4)        | <b>BHN78C1C</b>                            | 8 (4)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                      | 240     | 3.0  | 3  | 8 1/8 (206.4)        | <b>BHN78C3C</b>                            | 8 (4)                | N/A                            | N/A           | <b>C3-94</b>                   | <b>C3-93</b>  | N/A                            | N/A           |
|                                                                                                      | 480     | 3.0  | 3  | 8 1/8 (206.4)        | <b>BHN68C13C</b>                           | 8 (4)                | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 120     | 4.5  | 1  | 11 1/8 (282.6)       | <b>BHN711C1C</b>                           | 9 (4)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                      | 240     | 4.5  | 3  | 11 1/8 (282.6)       | <b>BHN711C3C</b>                           | 9 (4)                | N/A                            | N/A           | <b>C3-94</b>                   | <b>C3-93</b>  | N/A                            | N/A           |
|                                                                                                      | 480     | 4.5  | 3  | 11 1/8 (282.6)       | <b>BHN611C13C</b>                          | 9 (4)                | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 240     | 6.0  | 3  | 15 1/8 (384.2)       | <b>BHN715C3C</b>                           | 10 (5)               | N/A                            | N/A           | <b>C3-94</b>                   | <b>C3-93</b>  | N/A                            | N/A           |
|                                                                                                      | 480     | 6.0  | 3  | 15 1/8 (384.2)       | <b>BHN715C5C</b>                           | 10 (5)               | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 240     | 7.5  | 3  | 18 1/8 (460.4)       | <b>BHN718C3C</b>                           | 10 (5)               | N/A                            | N/A           | <b>C3-94</b>                   | <b>C3-93</b>  | N/A                            | N/A           |
|                                                                                                      | 480     | 7.5  | 3  | 18 1/8 (460.4)       | <b>BHN718C5C</b>                           | 10 (5)               | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 240     | 9.0  | 3  | 21 1/8 (536.6)       | <b>BHN721C3C</b>                           | 11 (5)               | N/A                            | N/A           | <b>C3-94</b>                   | <b>C3-93</b>  | N/A                            | N/A           |
|                                                                                                      | 480     | 9.0  | 3  | 21 1/8 (536.6)       | <b>BHN721C5C</b>                           | 11 (5)               | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 240     | 12.0 | 3  | 26 5/8 (676.3)       | <b>BHN726L3C</b>                           | 11 (5)               | N/A                            | N/A           | <b>C3-114</b>                  | <b>C3-115</b> | N/A                            | N/A           |
|                                                                                                      | 480     | 12.0 | 3  | 26 5/8 (676.3)       | <b>BHN726L5C</b>                           | 11 (5)               | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |
|                                                                                                      | 240     | 15.0 | 3  | 32 1/8 (816.0)       | <b>BHN732C3C</b>                           | 12 (6)               | N/A                            | N/A           | <b>C3-114</b>                  | <b>C3-115</b> | N/A                            | N/A           |
|                                                                                                      | 480     | 15.0 | 3  | 32 1/8 (816.0)       | <b>BHN732C5C</b>                           | 12 (6)               | N/A                            | N/A           | N/A                            | N/A           | <b>C3-116</b>                  | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

- ④ Wired for higher voltage  
⑤ No third party recognition

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters



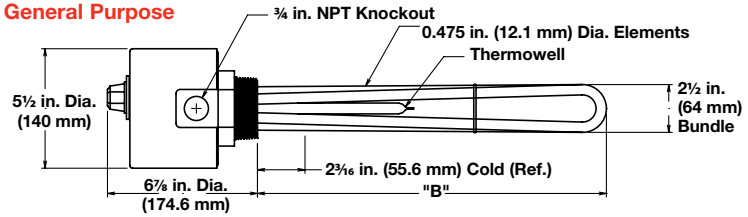
### Application: Clean Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

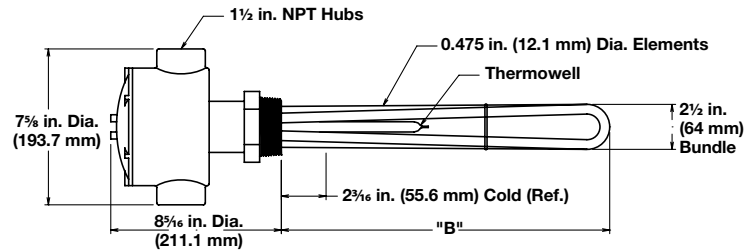
**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                     |                        |            | Type 5A (60 to 250°F)                    |                        |            | Type 7A (100 to 550°F)                   |                        |            |
|--------------------------------------------------------------------------------------------|-------|-----|----|----------------------------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                            |       |     |    |                                        |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                            |       |     |    |                                        |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(9.3 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 7 (4)                | BLN77L3S4                                | C/F                    | C/F        | BLN77L3S5A                               | C/F                    | C/F        | BLN77L3S7A                               | C/F                    | C/F        |
|                                                                                            | 480   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 7 (4)                | BLN77L13S4                               | C/F                    | C/F        | BLN77L13S5A                              | C/F                    | C/F        | BLN77L13S7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 8 (4)                | BLN710L3S4                               | C/F                    | C/F        | BLN710L3S5A                              | C/F                    | C/F        | BLN710L3S7A                              | C/F                    | C/F        |
|                                                                                            | 480   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 8 (4)                | BLN610K13S4                              | C/F                    | C/F        | BLN610K13S5A                             | C/F                    | C/F        | BLN610K13S7A                             | C/F                    | C/F        |
|                                                                                            | 240   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 10 (5)               | BLN714L3S4                               | C/F                    | C/F        | BLN714L3S5A                              | C/F                    | C/F        | BLN714L3S7A                              | C/F                    | C/F        |
|                                                                                            | 480   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 10 (5)               | BLN714L5S4                               | C/F                    | C/F        | BLN714L5S5A                              | C/F                    | C/F        | BLN714L5S7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 7.5 | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | 10 (5)               | BLN717L3S4                               | C/F                    | C/F        | BLN717L3S5A                              | C/F                    | C/F        | BLN717L3S7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 9.0 | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | 12 (6)               | BLN720L3S4                               | C/F                    | C/F        | BLN720L3S5A                              | C/F                    | C/F        | BLN720L3S7A                              | C/F                    | C/F        |
|                                                                                            |       |     |    |                                        |                      | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(9.3 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 10 (5)               | BLN77L3C4                                | C/F                    | C/F        | BLN77L3C5A                               | C/F                    | C/F        | BLN77L3C7A                               | C/F                    | C/F        |
|                                                                                            | 480   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 10 (5)               | BLN77L13C4                               | C/F                    | C/F        | BLN77L13C5A                              | C/F                    | C/F        | BLN77L13C7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 11 (5)               | BLN710L3C4                               | C/F                    | C/F        | BLN710L3C5A                              | C/F                    | C/F        | BLN710L3C7A                              | C/F                    | C/F        |
|                                                                                            | 480   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 11 (5)               | BLN610K13C4                              | C/F                    | C/F        | BLN610K13C5A                             | C/F                    | C/F        | BLN610K13C7A                             | C/F                    | C/F        |
|                                                                                            | 240   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 13 (6)               | BLN714L3C4                               | C/F                    | C/F        | BLN714L3C5A                              | C/F                    | C/F        | BLN714L3C7A                              | C/F                    | C/F        |
|                                                                                            | 480   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 13 (6)               | BLN714L5C4                               | C/F                    | C/F        | BLN714L5C5A                              | C/F                    | C/F        | BLN714L5C7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 7.5 | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | 13 (6)               | BLN717L3C4                               | C/F                    | C/F        | BLN717L3C5A                              | C/F                    | C/F        | BLN717L3C7A                              | C/F                    | C/F        |
|                                                                                            | 240   | 9.0 | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | 15 (7)               | BLN720L3C4                               | C/F                    | C/F        | BLN720L3C5A                              | C/F                    | C/F        | BLN720L3C7A                              | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

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# Immersion Heaters

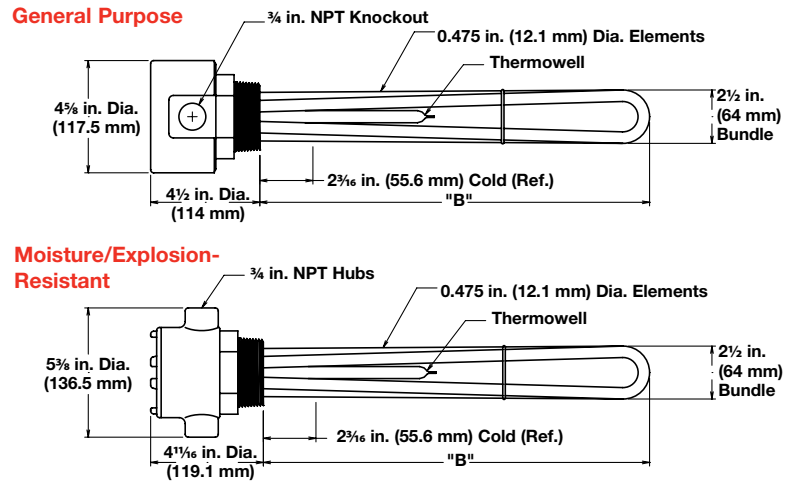


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Clean Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                        | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                   | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|----------------------------------------------------------------------------------------------------|-------|------|----|----------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                    |       |      |    |                                        | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120   | 3.0  | 1  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | BLN77L1S                     | 6 (3)                | C/F                       | C/F           | BLN77L1C                                   | 9 (4)                | C/F                       | C/F           |
|                                                                                                    | 240   | 3.0  | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | BLN77L3S                     | 6 (3)                | C2-50                     | C2-92         | BLN77L3C                                   | 9 (4)                | C3-94                     | C3-93         |
|                                                                                                    | 480   | 3.0  | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | BLN77L13S                    | 6 (3)                | C2-43                     | C2-35         | BLN77L13C                                  | 9 (4)                | C3-116                    | C3-118        |
|                                                                                                    | 120   | 4.5  | 1  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | BLN710L1S                    | 7 (4)                | C/F                       | C/F           | BLN710L1C                                  | 10 (5)               | C/F                       | C/F           |
|                                                                                                    | 240   | 4.5  | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | BLN710L3S                    | 7 (4)                | C2-50                     | C2-92         | BLN710L3C                                  | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                    | 480   | 4.5  | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | BLN610K13S                   | 7 (4)                | C2-43                     | C2-35         | BLN610K13C                                 | 10 (5)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 6.0  | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | BLN714L3S                    | 9 (4)                | C2-50                     | C2-92         | BLN714L3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                    | 480   | 6.0  | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | BLN714L5S                    | 9 (4)                | C2-43                     | C2-35         | BLN714L5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 7.5  | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | BLN717L3S                    | 9 (4)                | C2-50                     | C2-92         | BLN717L3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                    | 480   | 7.5  | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | BLN717L5S                    | 9 (4)                | C2-43                     | C2-35         | BLN717L5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 9.0  | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | BLN720L3S                    | 11 (5)               | C2-50                     | C2-92         | BLN720L3C                                  | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                    | 480   | 9.0  | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | BLN720L5S                    | 11 (5)               | C2-43                     | C2-35         | BLN720L5C                                  | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 12.0 | 3  | 26 <sup>1</sup> / <sub>8</sub> (663.6) | BLN726C3S                    | 12 (6)               | C2-50                     | C2-92         | BLN726C3C                                  | 15 (7)               | C3-114                    | C3-115        |
|                                                                                                    | 480   | 12.0 | 3  | 26 <sup>1</sup> / <sub>8</sub> (663.6) | BLN726C5S                    | 12 (6)               | C2-43                     | C2-35         | BLN726C5C                                  | 15 (7)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 15.0 | 3  | 31 <sup>5</sup> / <sub>8</sub> (803.3) | BLN731L3S                    | 14 (7)               | C2-50                     | C2-92         | BLN731L3C                                  | 17 (8)               | C3-114                    | C3-115        |
|                                                                                                    | 480   | 15.0 | 3  | 31 <sup>5</sup> / <sub>8</sub> (803.3) | BLN731L5S                    | 14 (7)               | C2-43                     | C2-35         | BLN731L5C                                  | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                    | 240   | 18.0 | 3  | 37 <sup>1</sup> / <sub>8</sub> (943.0) | BLN737C3S                    | 15 (7)               | C2-50                     | C2-92         | BLN737C3C                                  | 18 (9)               | C3-114                    | C3-115        |
|                                                                                                    | 480   | 18.0 | 3  | 37 <sup>1</sup> / <sub>8</sub> (943.0) | BLN737C5S                    | 15 (7)               | C2-43                     | C2-35         | BLN737C5C                                  | 18 (9)               | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

# Immersion Heaters



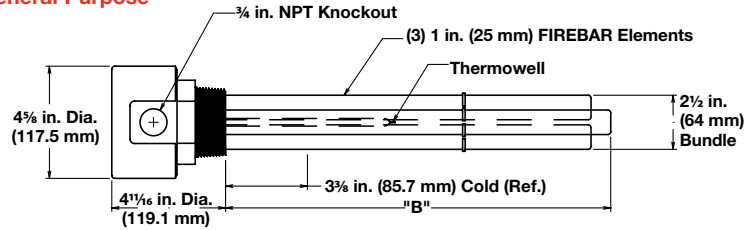
## WATROD and FIREBAR Screw Plug Immersion Heaters



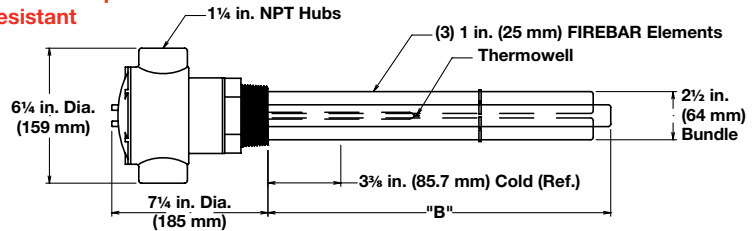
### Application: Clean Water

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number                       | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                                   | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|--------------------------------------|----------------------|---------------------------|---------------|----------------------------------------------------|----------------------|---------------------------|---------------|
| <b>90 W/in<sup>2</sup> ⑧<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(14 W/cm<sup>2</sup>)</b> |       |      |    |                      | <b>General Purpose<br/>Enclosure</b> |                      | Type J<br>T/C             | Type K<br>T/C | <b>Moisture/Explosion-<br/>Resistant Enclosure</b> |                      | Type J<br>T/C             | Type K<br>T/C |
|                                                                                                     | 240   | 15.0 | 3  | 15 1/8 (384.2)       | BLNF15C3S                            | 11 (5)               | C2-50                     | C2-92         | BLNF15C3C                                          | 14 (7)               | C3-114                    | C3-115        |
|                                                                                                     | 480   | 15.0 | 3  | 15 1/8 (384.2)       | BLNF15C5S                            | 11 (5)               | C2-43                     | C2-35         | BLNF15C5C                                          | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 20.0 | 3  | 18 1/8 (460.4)       | BLNF18C3S                            | 12 (6)               | C2-50                     | C2-92         | BLNF18C3C                                          | 15 (7)               | C3-114                    | C3-115        |
|                                                                                                     | 480   | 20.0 | 3  | 18 1/8 (460.4)       | BLNF18C5S ③                          | 12 (6)               | C2-43                     | C2-35         | BLNF18C5C ③                                        | 15 (7)               | C3-116                    | C3-118        |
|                                                                                                     | 480   | 25.0 | 3  | 23 1/8 (587.4)       | BLNF23C5S                            | 14 (7)               | C2-225                    | C2-226        | BLNF23C5C                                          | 17 (8)               | C3-117                    | C3-119        |
|                                                                                                     | 480   | 32.0 | 3  | 28 5/8 (727.1)       | BLNF28L5S                            | 17 (8)               | C2-225                    | C2-226        | BLNF28L5C                                          | 20 (9)               | C3-117                    | C3-119        |
|                                                                                                     | 480   | 38.0 | 3  | 33 5/8 (854.1)       | BLNF33L5S                            | 18 (9)               | C2-225                    | C2-226        | BLNF33L5C                                          | 21 (10)              | C3-117                    | C3-119        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

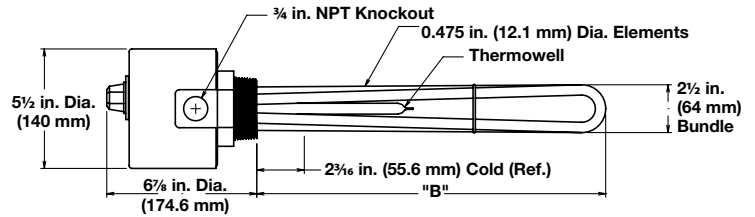


### Application: Deionized/ Demineralized Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure



| Description                                                                                                      | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)      |                           |            | Type 5A (60 to 250°F)     |                           |            | Type 7A (100 to 550°F)    |                           |            |
|------------------------------------------------------------------------------------------------------------------|-------|-----|----|----------------------------------------|----------------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|
|                                                                                                                  |       |     |    |                                        |                      | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            |
|                                                                                                                  |       |     |    |                                        |                      | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C |
| <b>60 W/in<sup>2</sup><br/>316 SS Plug<br/>3-316 SS<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)<br/>(Passivated)</b> | 240   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 7 (4)                | BLR77L3S4                 | C/F                       | C/F        | BLR77L3S5A                | C/F                       | C/F        | BLR77L3S7A                | C/F                       | C/F        |
|                                                                                                                  | 480   | 3.0 | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | 7 (4)                | BLR77L5S4                 | C/F                       | C/F        | BLR77L5S5A                | C/F                       | C/F        | BLR77L5S7A                | C/F                       | C/F        |
|                                                                                                                  | 240   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 8 (4)                | BLR710L3S4                | C/F                       | C/F        | BLR710L3S5A               | C/F                       | C/F        | BLR710L3S7A               | C/F                       | C/F        |
|                                                                                                                  | 480   | 4.5 | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | 8 (4)                | BLR710L5S4                | C/F                       | C/F        | BLR710L5S5A               | C/F                       | C/F        | BLR710L5S7A               | C/F                       | C/F        |
|                                                                                                                  | 240   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 10 (5)               | BLR714L3S4                | C/F                       | C/F        | BLR714L3S5A               | C/F                       | C/F        | BLR714L3S7A               | C/F                       | C/F        |
|                                                                                                                  | 480   | 6.0 | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | 10 (5)               | BLR714L5S4                | C/F                       | C/F        | BLR714L5S5A               | C/F                       | C/F        | BLR714L5S7A               | C/F                       | C/F        |
|                                                                                                                  | 240   | 7.5 | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | 10 (5)               | BLR717L3S4                | C/F                       | C/F        | BLR717L3S5A               | C/F                       | C/F        | BLR717L3S7A               | C/F                       | C/F        |
|                                                                                                                  | 240   | 9.0 | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | 12 (6)               | BLR720L3S4                | C/F                       | C/F        | BLR720L3S5A               | C/F                       | C/F        | BLR720L3S7A               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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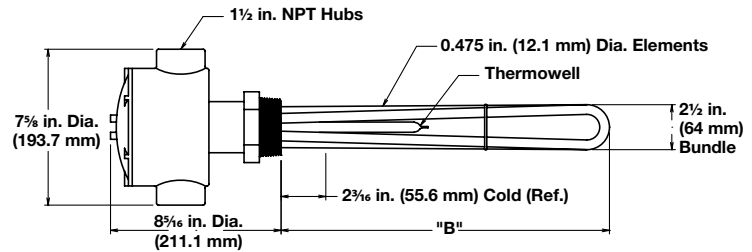
## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Deionized/ Demineralized Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



|                                                                                            |       |     |    |                      |                      | Type 4 (30 to 110°F)                                |                           |               | Type 5A (60 to 250°F)                               |                           |               | Type 7A (100 to 550°F)                              |                           |               |
|--------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|-----------------------------------------------------|---------------------------|---------------|-----------------------------------------------------|---------------------------|---------------|-----------------------------------------------------|---------------------------|---------------|
| Description                                                                                | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number                                      | WATCONNECT<br>Part Number |               | Part<br>Number                                      | WATCONNECT<br>Part Number |               | Part<br>Number                                      | WATCONNECT<br>Part Number |               |
|                                                                                            |       |     |    |                      |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in²<br/>316 SS Plug<br/>3-316 SS<br/>Elements<br/>(9.3 W/cm²)<br/>(Passivated)</b> | 240   | 3.0 | 3  | 7 5/8 (193.7)        | 10 (5)               | BLR77L3C4                                           | C/F                       | C/F           | BLR77L3C5A                                          | C/F                       | C/F           | BLR77L3C7A                                          | C/F                       | C/F           |
|                                                                                            | 480   | 3.0 | 3  | 7 5/8 (193.7)        | 10 (5)               | BLR77L5C4                                           | C/F                       | C/F           | BLR77L5C5A                                          | C/F                       | C/F           | BLR77L5C7A                                          | C/F                       | C/F           |
|                                                                                            | 240   | 4.5 | 3  | 10 5/8 (269.9)       | 11 (5)               | BLR710L3C4                                          | C/F                       | C/F           | BLR710L3C5A                                         | C/F                       | C/F           | BLR710L3C7A                                         | C/F                       | C/F           |
|                                                                                            | 480   | 4.5 | 3  | 10 5/8 (269.9)       | 11 (5)               | BLR710L5C4                                          | C/F                       | C/F           | BLR710L5C5A                                         | C/F                       | C/F           | BLR710L5C7A                                         | C/F                       | C/F           |
|                                                                                            | 240   | 6.0 | 3  | 14 5/8 (371.5)       | 13 (6)               | BLR714L3C4                                          | C/F                       | C/F           | BLR714L3C5A                                         | C/F                       | C/F           | BLR714L3C7A                                         | C/F                       | C/F           |
|                                                                                            | 480   | 6.0 | 3  | 14 5/8 (371.5)       | 13 (6)               | BLR714L5C4                                          | C/F                       | C/F           | BLR714L5C5A                                         | C/F                       | C/F           | BLR714L5C7A                                         | C/F                       | C/F           |
|                                                                                            | 240   | 7.5 | 3  | 17 5/8 (447.7)       | 13 (6)               | BLR717L3C4                                          | C/F                       | C/F           | BLR717L3C5A                                         | C/F                       | C/F           | BLR717L3C7A                                         | C/F                       | C/F           |
|                                                                                            | 240   | 9.0 | 3  | 20 5/8 (523.9)       | 15 (7)               | BLR720L3C4                                          | C/F                       | C/F           | BLR720L3C5A                                         | C/F                       | C/F           | BLR720L3C7A                                         | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

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# Immersion Heaters



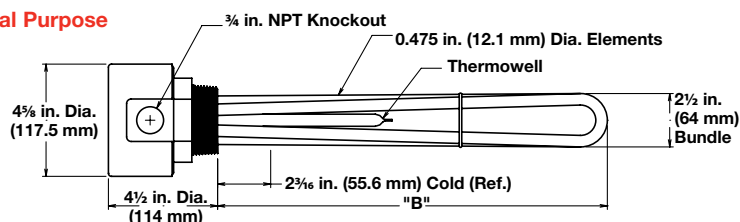
## WATROD and FIREBAR Screw Plug Immersion Heaters



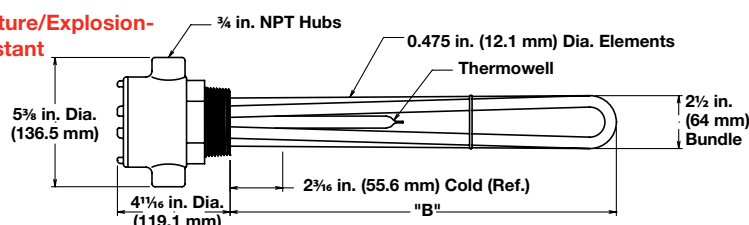
### Application: Deionized/ Demineralized Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                                                      | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                   | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------------------|-------|------|----|----------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                                  |       |      |    |                                        | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>316 SS Plug<br/>3-316 SS<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)<br/>(Passivated)</b> | 120   | 3.0  | 1  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | <b>BLR77L1S</b>              | 6 (3)                | <b>C/F</b>                | <b>C/F</b>    | <b>BLR77L1C</b>                            | 9 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                                                  | 240   | 3.0  | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | <b>BLR77L3S</b>              | 6 (3)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLR77L3C</b>                            | 9 (4)                | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                                  | 480   | 3.0  | 3  | 7 <sup>5</sup> / <sub>8</sub> (193.7)  | <b>BLR77L5S</b>              | 6 (3)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR77L5C</b>                            | 9 (4)                | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 120   | 4.5  | 1  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | <b>BLR710L1S</b>             | 7 (4)                | <b>C/F</b>                | <b>C/F</b>    | <b>BLR710L1C</b>                           | 10 (5)               | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                                                  | 240   | 4.5  | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | <b>BLR710L3S</b>             | 7 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLR710L3C</b>                           | 10 (5)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                                  | 480   | 4.5  | 3  | 10 <sup>5</sup> / <sub>8</sub> (269.9) | <b>BLR710L5S</b>             | 7 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR710L5C</b>                           | 10 (5)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 6.0  | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | <b>BLR714L3S</b>             | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLR714L3C</b>                           | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                                  | 480   | 6.0  | 3  | 14 <sup>5</sup> / <sub>8</sub> (371.5) | <b>BLR714L5S</b>             | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR714L5C</b>                           | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 7.5  | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | <b>BLR717L3S</b>             | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLR717L3C</b>                           | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                                  | 480   | 7.5  | 3  | 17 <sup>5</sup> / <sub>8</sub> (447.7) | <b>BLR717L5S</b>             | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR717L5C</b>                           | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 9.0  | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | <b>BLR720L3S</b>             | 11 (5)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLR720L3C</b>                           | 14 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                                  | 480   | 9.0  | 3  | 20 <sup>5</sup> / <sub>8</sub> (523.9) | <b>BLR720L5S</b>             | 11 (5)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR720L5C</b>                           | 14 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 12.0 | 3  | 26 <sup>1</sup> / <sub>8</sub> (663.6) | <b>BLR726C3S</b>             | 12 (6)               | <b>C2-236</b>             | <b>C2-214</b> | <b>BLR726C3C</b>                           | 15 (7)               | <b>C3-114</b>             | <b>C3-115</b> |
|                                                                                                                  | 480   | 12.0 | 3  | 26 <sup>1</sup> / <sub>8</sub> (663.6) | <b>BLR726C5S</b>             | 12 (6)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR726C5C</b>                           | 15 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 15.0 | 3  | 31 <sup>5</sup> / <sub>8</sub> (803.3) | <b>BLR731L3S</b>             | 14 (7)               | <b>C2-236</b>             | <b>C2-214</b> | <b>BLR731L3C</b>                           | 17 (8)               | <b>C3-114</b>             | <b>C3-115</b> |
|                                                                                                                  | 480   | 15.0 | 3  | 31 <sup>5</sup> / <sub>8</sub> (803.3) | <b>BLR731L5S</b>             | 14 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR731L5C</b>                           | 17 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                                  | 240   | 18.0 | 3  | 37 <sup>1</sup> / <sub>8</sub> (943.0) | <b>BLR737C3S</b>             | 15 (7)               | <b>C2-236</b>             | <b>C2-214</b> | <b>BLR737C3C</b>                           | 18 (9)               | <b>C3-114</b>             | <b>C3-115</b> |
|                                                                                                                  | 480   | 18.0 | 3  | 37 <sup>1</sup> / <sub>8</sub> (943.0) | <b>BLR737C5S</b>             | 15 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLR737C5C</b>                           | 18 (9)               | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

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# Immersion Heaters



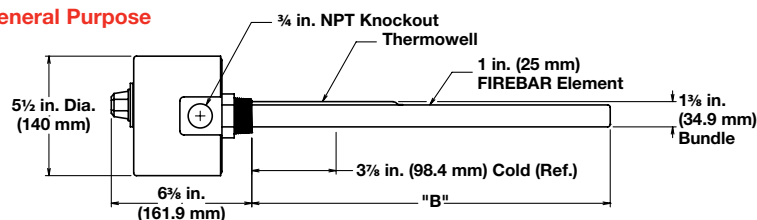
## WATROD and FIREBAR Screw Plug Immersion Heaters



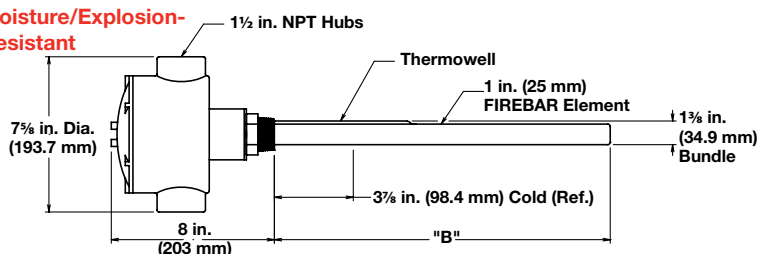
### Application: Process Water

- 1 1/4 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- General purpose enclosure
  - Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                               | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)                    |                        |            | Type 7A (100 to 550°F)                   |                        |            |
|-------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                           |       |      |    |                      |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                           |       |      |    |                      |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 45 W/in <sup>2</sup> ®<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(7 W/cm <sup>2</sup> ) | 240   | 2.0  | 3  | 13 (330)             | 7 (4)                | BDNF13A27S5A                             | C/F                    | C/F        | BDNF13A27S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 2.5  | 3  | 15 1/2 (394)         | 8 (4)                | BDNF15J27S5A                             | C/F                    | C/F        | BDNF15J27S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 3.0  | 3  | 18 (457)             | 9 (4)                | BDNF18A27S5A                             | C/F                    | C/F        | BDNF18A27S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 4.0  | 3  | 22 1/2 (572)         | 10 (5)               | BDNF22J27S5A                             | C/F                    | C/F        | BDNF22J27S7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 4.0  | 3  | 22 1/2 (572)         | 10 (5)               | BDNF22J28S5A                             | C/F                    | C/F        | BDNF22J28S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 5.0  | 3  | 27 1/2 (699)         | 11 (5)               | BDNF27J27S5A                             | C/F                    | C/F        | BDNF27J27S7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 5.0  | 3  | 27 1/2 (699)         | 11 (5)               | BDNF27J28S5A                             | C/F                    | C/F        | BDNF27J28S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 6.0  | 3  | 32 1/2 (826)         | 12 (6)               | BDNF32J27S5A                             | C/F                    | C/F        | BDNF32J27S7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 6.0  | 3  | 32 1/2 (826)         | 12 (6)               | BDNF32J28S5A                             | C/F                    | C/F        | BDNF32J28S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 8.0  | 3  | 42 (1067)            | 14 (7)               | BDNF42A27S5A                             | C/F                    | C/F        | BDNF42A27S7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 10.0 | 3  | 51 1/2 (1308)        | 16 (8)               | BDNF51J27S5A                             | C/F                    | C/F        | BDNF51J27S7A                             | C/F                    | C/F        |
|                                                                                           |       |      |    |                      |                      |                                          |                        |            |                                          |                        |            |
|                                                                                           |       |      |    |                      |                      | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
| 45 W/in <sup>2</sup> ®<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(7 W/cm <sup>2</sup> ) | 240   | 2.0  | 3  | 13 (330)             | 10 (5)               | BDNF13A27C5A                             | C/F                    | C/F        | BDNF13A27C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 2.5  | 3  | 15 1/2 (394)         | 11 (5)               | BDNF15J27C5A                             | C/F                    | C/F        | BDNF15J27C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 3.0  | 3  | 18 (457)             | 12 (6)               | BDNF18A27C5A                             | C/F                    | C/F        | BDNF18A27C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 4.0  | 3  | 22 1/2 (572)         | 13 (6)               | BDNF22J27C5A                             | C/F                    | C/F        | BDNF22J27C7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 4.0  | 3  | 22 1/2 (572)         | 13 (6)               | BDNF22J28C5A                             | C/F                    | C/F        | BDNF22J28C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 5.0  | 3  | 27 1/2 (699)         | 14 (7)               | BDNF27J27C5A                             | C/F                    | C/F        | BDNF27J27C7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 5.0  | 3  | 27 1/2 (699)         | 14 (7)               | BDNF27J28C5A                             | C/F                    | C/F        | BDNF27J28C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 6.0  | 3  | 32 1/2 (826)         | 15 (7)               | BDNF32J27C5A                             | C/F                    | C/F        | BDNF32J27C7A                             | C/F                    | C/F        |
|                                                                                           | 480   | 6.0  | 3  | 32 1/2 (826)         | 15 (7)               | BDNF32J28C5A                             | C/F                    | C/F        | BDNF32J28C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 8.0  | 3  | 42 (1067)            | 17 (8)               | BDNF42A27C5A                             | C/F                    | C/F        | BDNF42A27C7A                             | C/F                    | C/F        |
|                                                                                           | 240   | 10.0 | 3  | 51 1/2 (1308)        | 19 (9)               | BDNF51J27C5A                             | C/F                    | C/F        | BDNF51J27C7A                             | C/F                    | C/F        |
|                                                                                           |       |      |    |                      |                      |                                          |                        |            |                                          |                        |            |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

⑧ Can be wired for 1-phase operation



# Immersion Heaters



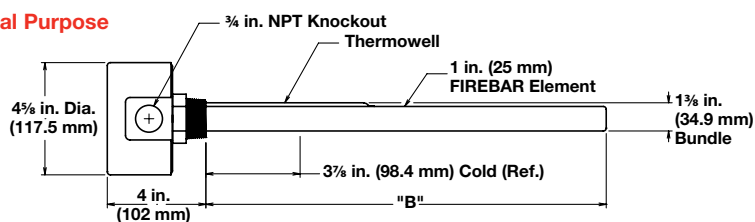
## WATROD and FIREBAR Screw Plug Immersion Heaters



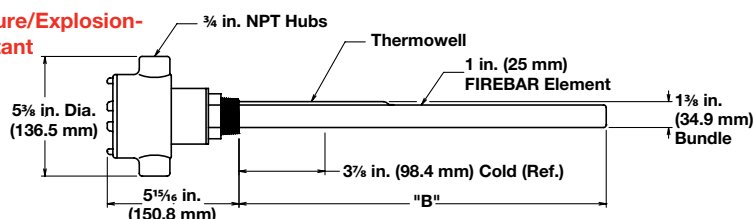
### Application: Process Water

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                               | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|-------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                           |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| 45 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(7 W/cm <sup>2</sup> ) | 240   | 2.0  | 3  | 13 (330)             | BDNF13A27S                   | 6 (3)                | C2-50                     | C2-92         | BDNF13A27C                                 | 9 (4)                | C3-94                     | C3-93         |
|                                                                                           | 240   | 2.5  | 3  | 15 1/2 (394)         | BDNF15J27S                   | 7 (4)                | C2-50                     | C2-92         | BDNF15J27C                                 | 10 (5)               | C3-94                     | C3-93         |
|                                                                                           | 240   | 3.0  | 3  | 18 (457)             | BDNF18A27S                   | 8 (4)                | C2-50                     | C2-92         | BDNF18A27C                                 | 11 (5)               | C3-94                     | C3-93         |
|                                                                                           | 240   | 4.0  | 3  | 22 1/2 (572)         | BDNF22J27S                   | 9 (4)                | C2-50                     | C2-92         | BDNF22J27C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                           | 480   | 4.0  | 3  | 22 1/2 (572)         | BDNF22J28S                   | 9 (4)                | C2-43                     | C2-35         | BDNF22J28C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                           | 240   | 5.0  | 3  | 27 1/2 (699)         | BDNF27J27S                   | 10 (5)               | C2-50                     | C2-92         | BDNF27J27C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                           | 480   | 5.0  | 3  | 27 1/2 (699)         | BDNF27J28S                   | 10 (5)               | C2-43                     | C2-35         | BDNF27J28C                                 | 13 (6)               | C3-116                    | C3-118        |
|                                                                                           | 240   | 6.0  | 3  | 32 1/2 (826)         | BDNF32J27S                   | 11 (5)               | C2-50                     | C2-92         | BDNF32J27C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                           | 480   | 6.0  | 3  | 32 1/2 (826)         | BDNF32J28S                   | 11 (5)               | C2-43                     | C2-35         | BDNF32J28C                                 | 14 (7)               | C3-116                    | C3-118        |
|                                                                                           | 240   | 8.0  | 3  | 42 (1067)            | BDNF42A27S                   | 13 (6)               | C2-50                     | C2-92         | BDNF42A27C                                 | 16 (8)               | C3-94                     | C3-93         |
|                                                                                           | 480   | 8.0  | 3  | 42 (1067)            | BDNF42A28S                   | 13 (6)               | C2-43                     | C2-35         | BDNF42A28C                                 | 16 (8)               | C3-116                    | C3-118        |
|                                                                                           | 240   | 10.0 | 3  | 51 1/2 (1308)        | BDNF51J27S                   | 15 (7)               | C2-50                     | C2-92         | BDNF51J27C                                 | 18 (9)               | C3-94                     | C3-93         |
|                                                                                           | 480   | 10.0 | 3  | 51 1/2 (1308)        | BDNF51J28S                   | 15 (7)               | C2-43                     | C2-35         | BDNF51J28C                                 | 18 (9)               | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

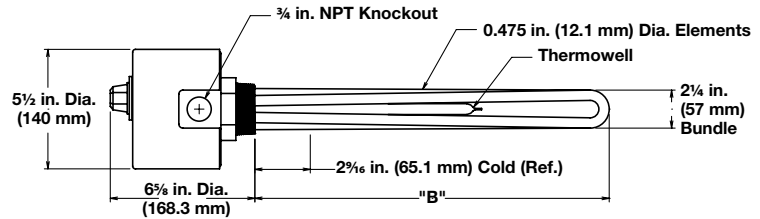


### Application: Process Water

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure



| Description                                                                                          | Volts   | kW  | Ph | "B" Dim.<br>in. (mm)                 | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)      |                           |            | Type 5A (60 to 250°F)     |                           |            | Type 7A (100 to 550°F)    |                           |            |
|------------------------------------------------------------------------------------------------------|---------|-----|----|--------------------------------------|----------------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|
|                                                                                                      |         |     |    |                                      |                      | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            |
|                                                                                                      |         |     |    |                                      |                      | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C |
| <b>48 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b> | 120/240 | 2.0 | 1  | 9 <sup>3</sup> / <sub>4</sub> (248)  | 5 (3)                | BGN79N6S4                 | C/F                       | C/F        | BGN79N6S5A                | C/F                       | C/F        | BGN79N6S7                 | C/F                       | C/F        |
|                                                                                                      | 240/480 | 2.0 | 1  | 9 <sup>3</sup> / <sub>4</sub> (248)  | 5 (3)                | BGN79N7S4                 | C/F                       | C/F        | BGN79N7S5A                | C/F                       | C/F        | BGN79N7S7A                | C/F                       | C/F        |
|                                                                                                      | 120/240 | 3.0 | 1  | 13 <sup>1</sup> / <sub>4</sub> (337) | 6 (3)                | BGN713E6S4                | C/F                       | C/F        | BGN713E6S5A               | C/F                       | C/F        | BGN713E6S7A               | C/F                       | C/F        |
|                                                                                                      | 240/480 | 3.0 | 1  | 13 <sup>1</sup> / <sub>4</sub> (337) | 6 (3)                | BGN713E7S4                | C/F                       | C/F        | BGN713E7S5A               | C/F                       | C/F        | BGN713E7S7A               | C/F                       | C/F        |
|                                                                                                      | 120/240 | 4.0 | 1  | 17 <sup>3</sup> / <sub>4</sub> (451) | 7 (4)                | BGN717N6S4                | C/F                       | C/F        | BGN717N6S5A               | C/F                       | C/F        | BGN717N6S7A               | C/F                       | C/F        |
|                                                                                                      | 120/240 | 5.0 | 1  | 20 <sup>1</sup> / <sub>4</sub> (514) | 8 (4)                | BGN720E6S4                | C/F                       | C/F        | BGN720E6S5A               | C/F                       | C/F        | BGN720E6S7A               | C/F                       | C/F        |
| <b>48 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b>   | 240     | 3.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)  | 6 (3)                | BHN79N3S4                 | C/F                       | C/F        | BHN79N3S5A                | C/F                       | C/F        | BHN79N3S7A                | C/F                       | C/F        |
|                                                                                                      | 480     | 3.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)  | 6 (3)                | BHN79N5S4                 | C/F                       | C/F        | BHN79N5S5A                | C/F                       | C/F        | BHN79N5S7A                | C/F                       | C/F        |
|                                                                                                      | 240     | 4.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337) | 7 (4)                | BHN713E3S4                | C/F                       | C/F        | BHN713E3S5A               | C/F                       | C/F        | BHN713E3S7A               | C/F                       | C/F        |
|                                                                                                      | 480     | 4.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337) | 7 (4)                | BHN713E5S4                | C/F                       | C/F        | BHN713E5S5A               | C/F                       | C/F        | BHN713E5S7A               | C/F                       | C/F        |
|                                                                                                      | 240     | 6.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451) | 8 (4)                | BHN717N3S4                | C/F                       | C/F        | BHN717N3S5A               | C/F                       | C/F        | BHN717N3S7A               | C/F                       | C/F        |
|                                                                                                      | 480     | 6.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451) | 8 (4)                | BHN717N5S4                | C/F                       | C/F        | BHN717N5S5A               | C/F                       | C/F        | BHN717N5S7A               | C/F                       | C/F        |
|                                                                                                      | 240     | 7.5 | 3  | 20 <sup>1</sup> / <sub>4</sub> (514) | 9 (4)                | BHN720E3S4                | C/F                       | C/F        | BHN720E3S5A               | C/F                       | C/F        | BHN720E3S7A               | C/F                       | C/F        |
|                                                                                                      | 240     | 9.0 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641) | 10 (5)               | BHN725E3S4                | C/F                       | C/F        | BHN725E3S5A               | C/F                       | C/F        | BHN725E3S7A               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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- ④ Wired for higher voltage

# Immersion Heaters



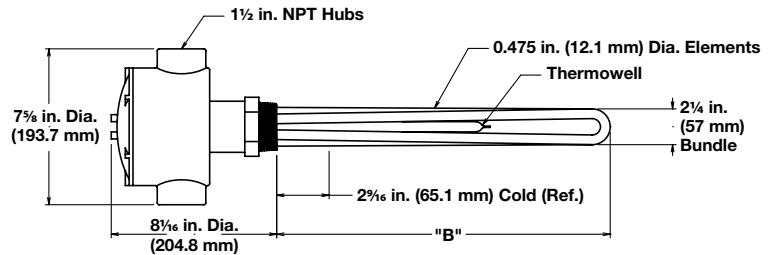
## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Process Water

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                              | Volts       | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                                |                        | Type 5A (60 to 250°F) |                                                     | Type 7A (100 to 550°F) |                        |
|----------------------------------------------------------------------------------------------------------|-------------|-----|----|----------------------|----------------------|-----------------------------------------------------|------------------------|-----------------------|-----------------------------------------------------|------------------------|------------------------|
|                                                                                                          |             |     |    |                      |                      | Part Number                                         | WATCONNECT Part Number | Part Number           | WATCONNECT Part Number                              | Part Number            | WATCONNECT Part Number |
|                                                                                                          |             |     |    |                      |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C         | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C          |
| <b>48 W/in<sup>2</sup> ④<br/>304 SS<br/>Plug<br/>2-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b> | 120/<br>240 | 2.0 | 1  | 9 3/4 (248)          | 8 (4)                | BGN79N6C4                                           | C/F                    | C/F                   | BGN79N6C5A                                          | C/F                    | C/F                    |
|                                                                                                          | 240/<br>480 | 2.0 | 1  | 9 3/4 (248)          | 8 (4)                | BGN79N7C4                                           | C/F                    | C/F                   | BGN79N7C5A                                          | C/F                    | C/F                    |
|                                                                                                          | 120/<br>240 | 3.0 | 1  | 13 1/4 (337)         | 9 (4)                | BGN713E6C4                                          | C/F                    | C/F                   | BGN713E6C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 240/<br>480 | 3.0 | 1  | 13 1/4 (337)         | 9 (4)                | BGN713E7C4                                          | C/F                    | C/F                   | BGN713E7C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 120/<br>240 | 4.0 | 1  | 17 3/4 (451)         | 10 (5)               | BGN717N6C4                                          | C/F                    | C/F                   | BGN717N6C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 120/<br>240 | 5.0 | 1  | 20 1/4 (514)         | 11 (5)               | BGN720E6C4                                          | C/F                    | C/F                   | BGN720E6C5A                                         | C/F                    | C/F                    |
| <b>48 W/in<sup>2</sup><br/>304 SS<br/>Plug<br/>3-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b>   | 240         | 3.0 | 3  | 9 3/4 (248)          | 9 (4)                | BHN79N3C4                                           | C/F                    | C/F                   | BHN79N3C5A                                          | C/F                    | C/F                    |
|                                                                                                          | 480         | 3.0 | 3  | 9 3/4 (248)          | 9 (4)                | BHN79N5C4                                           | C/F                    | C/F                   | BHN79N5C5A                                          | C/F                    | C/F                    |
|                                                                                                          | 240         | 4.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHN713E3C4                                          | C/F                    | C/F                   | BHN713E3C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 480         | 4.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHN713E5C4                                          | C/F                    | C/F                   | BHN713E5C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 240         | 6.0 | 3  | 17 3/4 (451)         | 11 (5)               | BHN717N3C4                                          | C/F                    | C/F                   | BHN717N3C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 480         | 6.0 | 3  | 17 3/4 (451)         | 11 (5)               | BHN717N5C4                                          | C/F                    | C/F                   | BHN717N5C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 240         | 7.5 | 3  | 20 1/4 (514)         | 12 (6)               | BHN720E3C4                                          | C/F                    | C/F                   | BHN720E3C5A                                         | C/F                    | C/F                    |
|                                                                                                          | 240         | 9.0 | 3  | 25 1/4 (641)         | 13 (6)               | BHN725E3C4                                          | C/F                    | C/F                   | BHN725E3C5A                                         | C/F                    | C/F                    |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

- ④ Wired for higher voltage
- ⑤ No third party recognition

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# Immersion Heaters



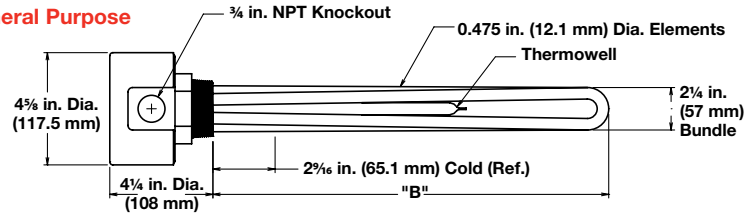
## WATROD and FIREBAR Screw Plug Immersion Heaters



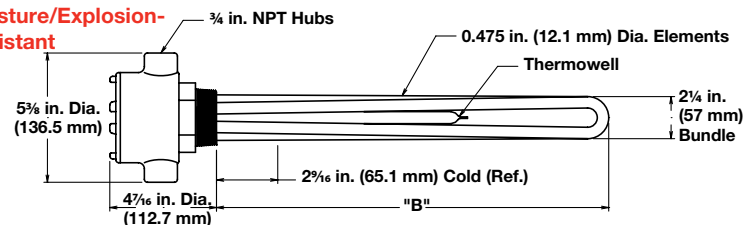
### Application: Process Water

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                         | Volts   | kW   | Ph | “B” Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number | 240V WATCONNECT<br>Part Number | 480V WATCONNECT<br>Part Number |               |               |               |
|---------------------------------------------------------------------|---------|------|----|----------------------|------------------------------|----------------------|--------------------------------|--------------------------------|--------------------------------|---------------|---------------|---------------|
|                                                                     |         |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C                  | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C | Type K<br>T/C |
| 48 W/in² ④<br>304 SS Plug<br>2-Alloy 800<br>Elements<br>(7.5 W/cm²) | 120/240 | 2.0  | 1  | 9¾ (248)             | BGN79N6S                     | 4 (2)                | C1-15                          | C1-12                          | C1-17                          | C1-13         | N/A           | N/A           |
|                                                                     | 240/480 | 2.0  | 1  | 9¾ (248)             | BGN79N7S                     | 4 (2)                | N/A                            | N/A                            | C1-17                          | C1-13         | C/F           | C/F           |
|                                                                     | 120/240 | 3.0  | 1  | 13¼ (337)            | BGN713E6S                    | 5 (3)                | C/F                            | C/F                            | C1-17                          | C1-13         | N/A           | N/A           |
|                                                                     | 240/480 | 3.0  | 1  | 13¼ (337)            | BGN713E7S                    | 5 (3)                | N/A                            | N/A                            | C1-17                          | C1-13         | C/F           | C/F           |
|                                                                     | 120/240 | 4.0  | 1  | 17¾ (451)            | BGN717N6S                    | 6 (3)                | C/F                            | C/F                            | C1-17                          | C1-13         | N/A           | N/A           |
|                                                                     | 240/480 | 4.0  | 1  | 17¾ (451)            | BGN717N7S                    | 6 (3)                | N/A                            | N/A                            | C1-17                          | C1-13         | C/F           | C/F           |
|                                                                     | 120/240 | 5.0  | 1  | 20¼ (514)            | BGN720E6S                    | 7 (4)                | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                     | 240/480 | 5.0  | 1  | 20¼ (514)            | BGN720E7S                    | 7 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                     | 240/480 | 6.0  | 1  | 25¼ (641)            | BGN725E7S                    | 7 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                     | 240/480 | 8.0  | 1  | 32¾ (832)            | BGN732N7S                    | 8 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                     | 240/480 | 10.0 | 1  | 40¼ (1022)           | BGN740E7S                    | 9 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
| 48 W/in²<br>304 SS Plug<br>3-Alloy 800<br>Element<br>(7.5 W/cm²)    | 120     | 3.0  | 1  | 9¾ (248)             | BHN79N1S                     | 5 (3)                | C/F                            | C/F                            | N/A                            | N/A           | N/A           | N/A           |
|                                                                     | 240     | 3.0  | 3  | 9¾ (248)             | BHN79N3S                     | 5 (3)                | N/A                            | N/A                            | C2-50                          | C2-92         | N/A           | N/A           |
|                                                                     | 480     | 3.0  | 3  | 9¾ (248)             | BHN79N5S                     | 5 (3)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 120     | 4.5  | 1  | 13¼ (337)            | BHN713E1S                    | 6 (3)                | C/F                            | C/F                            | N/A                            | N/A           | N/A           | N/A           |
|                                                                     | 240     | 4.5  | 3  | 13¼ (337)            | BHN713E3S                    | 6 (3)                | N/A                            | N/A                            | C2-50                          | C2-92         | N/A           | N/A           |
|                                                                     | 480     | 4.5  | 3  | 13¼ (337)            | BHN713E5S                    | 6 (3)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 6.0  | 3  | 17¾ (451)            | BHN717N3S                    | 7 (4)                | N/A                            | N/A                            | C2-50                          | C2-92         | N/A           | N/A           |
|                                                                     | 480     | 6.0  | 3  | 17¾ (451)            | BHN717N5S                    | 7 (4)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 7.5  | 3  | 20¼ (514)            | BHN720E3S                    | 8 (4)                | N/A                            | N/A                            | C2-50                          | C2-92         | N/A           | N/A           |
|                                                                     | 480     | 7.5  | 3  | 20¼ (514)            | BHN720E5S                    | 8 (4)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 9.0  | 3  | 25¼ (641)            | BHN725E3S                    | 9 (4)                | N/A                            | N/A                            | C2-50                          | C2-92         | N/A           | N/A           |
|                                                                     | 480     | 9.0  | 3  | 25¼ (641)            | BHN725E5S                    | 9 (4)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 12.0 | 3  | 32¾ (832)            | BHN732N3S                    | 9 (4)                | N/A                            | N/A                            | C2-236                         | C2-214        | N/A           | N/A           |
|                                                                     | 480     | 12.0 | 3  | 32¾ (832)            | BHN732N5S                    | 9 (4)                | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 15.0 | 3  | 40¼ (1022)           | BHN740E3S                    | 10 (5)               | N/A                            | N/A                            | C2-236                         | C2-214        | N/A           | N/A           |
|                                                                     | 480     | 15.0 | 3  | 40¼ (1022)           | BHN740E5S                    | 10 (5)               | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |
|                                                                     | 240     | 18.0 | 3  | 47¾ (1213)           | BHN747N3S                    | 11 (5)               | N/A                            | N/A                            | C2-236                         | C2-214        | N/A           | N/A           |
|                                                                     | 480     | 18.0 | 3  | 47¾ (1213)           | BHN747N5S                    | 11 (5)               | N/A                            | N/A                            | N/A                            | N/A           | C2-43         | C2-35         |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

- ④ Wired for higher voltage  
⑤ No third party recognition

# Immersion Heaters



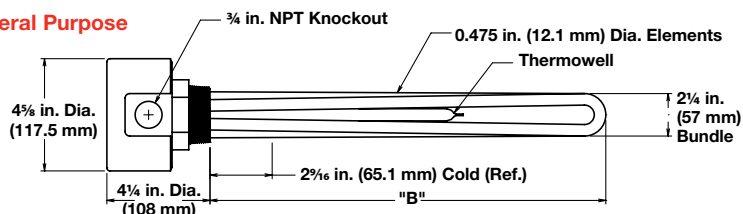
## WATROD and FIREBAR Screw Plug Immersion Heaters



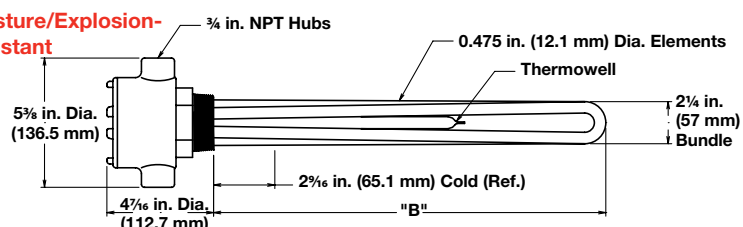
### Application: Process Water

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                         | Volts   | kW   | Ph | “B” Dim.<br>in. (mm) | Part<br>Number                             | Ship Wt.<br>(kg) | 120V WATCONNECT<br>Part Number | 240V WATCONNECT<br>Part Number | 480V WATCONNECT<br>Part Number |               |        |        |
|---------------------------------------------------------------------|---------|------|----|----------------------|--------------------------------------------|------------------|--------------------------------|--------------------------------|--------------------------------|---------------|--------|--------|
|                                                                     |         |      |    |                      | Moisture/Explosion-<br>Resistant Enclosure |                  | Type J<br>T/C                  | Type K<br>T/C                  | Type J<br>T/C                  | Type K<br>T/C |        |        |
| 48 W/in² ④<br>304 SS Plug<br>2-Alloy 800<br>Elements<br>(7.5 W/cm²) | 120/240 | 2.0  | 1  | 9¾ (248)             | BGN79N6C                                   | 7 (4)            | C/F                            | C/F                            | C/F                            | C/F           | N/A    | N/A    |
|                                                                     | 240/480 | 2.0  | 1  | 9¾ (248)             | BGN79N7C                                   | 7 (4)            | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 120/240 | 3.0  | 1  | 13¼ (337)            | BGN713E6C                                  | 8 (4)            | C/F                            | C/F                            | C/F                            | C/F           | N/A    | N/A    |
|                                                                     | 240/480 | 3.0  | 1  | 13¼ (337)            | BGN713E7C                                  | 8 (4)            | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 120/240 | 4.0  | 1  | 17¾ (451)            | BGN717N6C                                  | 9 (4)            | C/F                            | C/F                            | C/F                            | C/F           | N/A    | N/A    |
|                                                                     | 240/480 | 4.0  | 1  | 17¾ (451)            | BGN717N7C                                  | 9 (4)            | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 120/240 | 5.0  | 1  | 20¼ (514)            | BGN720E6C                                  | 10 (5)           | C/F                            | C/F                            | C/F                            | C/F           | N/A    | N/A    |
|                                                                     | 240/480 | 5.0  | 1  | 20¼ (514)            | BGN720E7C                                  | 10 (5)           | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 240/480 | 6.0  | 1  | 25¼ (641)            | BGN725E7C                                  | 10 (5)           | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 240/480 | 8.0  | 1  | 32¾ (832)            | BGN732N7C                                  | 11 (5)           | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
|                                                                     | 240/480 | 10.0 | 1  | 40¼ (1022)           | BGN740E7C                                  | 12 (6)           | N/A                            | N/A                            | C/F                            | C/F           | C/F    | C/F    |
| 48 W/in²<br>304 SS Plug<br>3-Alloy 800<br>Element<br>(7.5 W/cm²)    | 120     | 3.0  | 1  | 9¾ (248)             | BHN79N1C                                   | 8 (4)            | C/F                            | C/F                            | N/A                            | N/A           | N/A    | N/A    |
|                                                                     | 240     | 3.0  | 3  | 9¾ (248)             | BHN79N3C                                   | 8 (4)            | N/A                            | N/A                            | C3-94                          | C3-93         | N/A    | N/A    |
|                                                                     | 480     | 3.0  | 3  | 9¾ (248)             | BHN79N5C                                   | 8 (4)            | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 120     | 4.5  | 1  | 13¼ (337)            | BHN713E1C                                  | 9 (4)            | C/F                            | C/F                            | N/A                            | N/A           | N/A    | N/A    |
|                                                                     | 240     | 4.5  | 3  | 13¼ (337)            | BHN713E3C                                  | 9 (4)            | N/A                            | N/A                            | C3-94                          | C3-93         | N/A    | N/A    |
|                                                                     | 480     | 4.5  | 3  | 13¼ (337)            | BHN713E5C                                  | 9 (4)            | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 6.0  | 3  | 17¾ (451)            | BHN717N3C                                  | 10 (5)           | N/A                            | N/A                            | C3-94                          | C3-93         | N/A    | N/A    |
|                                                                     | 480     | 6.0  | 3  | 17¾ (451)            | BHN717N5C                                  | 10 (5)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 7.5  | 3  | 20¼ (514)            | BHN720E3C                                  | 11 (5)           | N/A                            | N/A                            | C3-94                          | C3-93         | N/A    | N/A    |
|                                                                     | 480     | 7.5  | 3  | 20¼ (514)            | BHN720E5C                                  | 11 (5)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 9.0  | 3  | 25¼ (641)            | BHN725E3C                                  | 12 (6)           | N/A                            | N/A                            | C3-94                          | C3-93         | N/A    | N/A    |
|                                                                     | 480     | 9.0  | 3  | 25¼ (641)            | BHN725E5C                                  | 12 (6)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 12.0 | 3  | 32¾ (832)            | BHN732N3C                                  | 12 (6)           | N/A                            | N/A                            | C3-114                         | C3-115        | N/A    | N/A    |
|                                                                     | 480     | 12.0 | 3  | 32¾ (832)            | BHN732N5C                                  | 12 (6)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 15.0 | 3  | 40¼ (1022)           | BHN740E3C                                  | 13 (6)           | N/A                            | N/A                            | C3-114                         | C3-115        | N/A    | N/A    |
|                                                                     | 480     | 15.0 | 3  | 40¼ (1022)           | BHN740E5C                                  | 13 (6)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |
|                                                                     | 240     | 18.0 | 3  | 47¾ (1213)           | BHN747N3C                                  | 14 (7)           | N/A                            | N/A                            | C3-114                         | C3-115        | N/A    | N/A    |
|                                                                     | 480     | 18.0 | 3  | 47¾ (1213)           | BHN747N5C                                  | 14 (7)           | N/A                            | N/A                            | N/A                            | N/A           | C3-116 | C3-118 |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

- ④ Wired for higher voltage  
⑤ No third party recognition

# Immersion Heaters



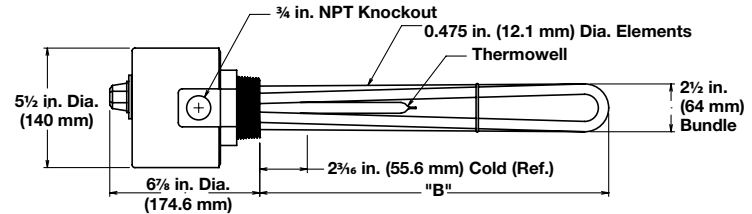
## WATROD and FIREBAR Screw Plug Immersion Heaters



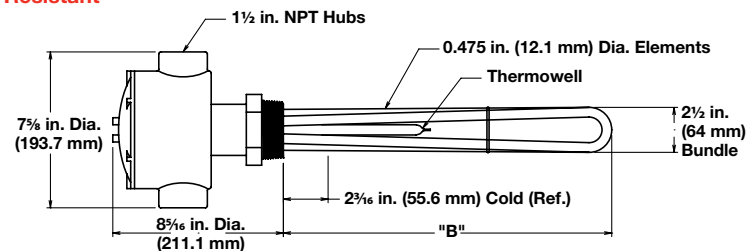
### Application: Process Water

- 2<sup>1</sup>/<sub>2</sub> inch NPT screw plug
  - WATROD elements
  - With thermostat (DPST), Type 4, 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- General purpose enclosure
  - Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

### General Purpose



### Moisture/Explosion-Resistant



| Description                                                                             | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                     |                        |            | Type 5A (60 to 250°F)                    |                        |            | Type 7A (100 to 550°F)                   |                        |            |
|-----------------------------------------------------------------------------------------|-------|-----|----|----------------------------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                         |       |     |    |                                        |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                         |       |     |    |                                        |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup><br>304 SS Plug<br>3-Alloy 800 Elements<br>(7.5 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)  | 7 (4)                | BLN79G3S4                                | C/F                    | C/F        | BLN79G3S5A                               | C/F                    | C/F        | BLN79G3S7A                               | C/F                    | C/F        |
|                                                                                         | 480   | 3.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)  | 7 (4)                | BLN79G5S4                                | C/F                    | C/F        | BLN79G5S5A                               | C/F                    | C/F        | BLN79G5S7A                               | C/F                    | C/F        |
|                                                                                         | 240   | 4.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0) | 8 (4)                | BLN712R3S4                               | C/F                    | C/F        | BLN712R3S5A                              | C/F                    | C/F        | BLN712R3S7A                              | C/F                    | C/F        |
|                                                                                         | 480   | 4.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0) | 8 (4)                | BLN712R5S4                               | C/F                    | C/F        | BLN712R5S5A                              | C/F                    | C/F        | BLN712R5S7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 6.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3) | 10 (5)               | BLN717G3S4                               | C/F                    | C/F        | BLN717G3S5A                              | C/F                    | C/F        | BLN717G3S7A                              | C/F                    | C/F        |
|                                                                                         | 480   | 6.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3) | 10 (5)               | BLN717G5S4                               | C/F                    | C/F        | BLN717G5S5A                              | C/F                    | C/F        | BLN717G5S7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 7.5 | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8) | 12 (6)               | BLN719R3S4                               | C/F                    | C/F        | BLN719R3S5A                              | C/F                    | C/F        | BLN719R3S7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 9.0 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8) | 13 (6)               | BLN724R3S4                               | C/F                    | C/F        | BLN724R3S5A                              | C/F                    | C/F        | BLN724R3S7A                              | C/F                    | C/F        |
|                                                                                         |       |     |    |                                        |                      | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup><br>304 SS Plug<br>3-Alloy 800 Elements<br>(7.5 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)  | 10 (5)               | BLN79G3C4                                | C/F                    | C/F        | BLN79G3C5A                               | C/F                    | C/F        | BLN79G3C7A                               | C/F                    | C/F        |
|                                                                                         | 480   | 3.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)  | 10 (5)               | BLN79G5C4                                | C/F                    | C/F        | BLN79G5C5A                               | C/F                    | C/F        | BLN79G5C7A                               | C/F                    | C/F        |
|                                                                                         | 240   | 4.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0) | 11 (5)               | BLN712R3C4                               | C/F                    | C/F        | BLN712R3C5A                              | C/F                    | C/F        | BLN712R3C7A                              | C/F                    | C/F        |
|                                                                                         | 480   | 4.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0) | 11 (5)               | BLN712R5C4                               | C/F                    | C/F        | BLN712R5C5A                              | C/F                    | C/F        | BLN712R5C7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 6.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3) | 13 (6)               | BLN717G3C4                               | C/F                    | C/F        | BLN717G3C5A                              | C/F                    | C/F        | BLN717G3C7A                              | C/F                    | C/F        |
|                                                                                         | 480   | 6.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3) | 13 (6)               | BLN717G5C4                               | C/F                    | C/F        | BLN717G5C5A                              | C/F                    | C/F        | BLN717G5C7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 7.5 | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8) | 15 (7)               | BLN719R3C4                               | C/F                    | C/F        | BLN719R3C5A                              | C/F                    | C/F        | BLN719R3C7A                              | C/F                    | C/F        |
|                                                                                         | 240   | 9.0 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8) | 16 (8)               | BLN724R3C4                               | C/F                    | C/F        | BLN724R3C5A                              | C/F                    | C/F        | BLN724R3C7A                              | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

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# Immersion Heaters



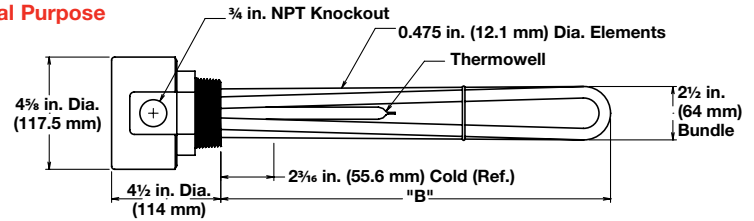
## WATROD and FIREBAR Screw Plug Immersion Heaters



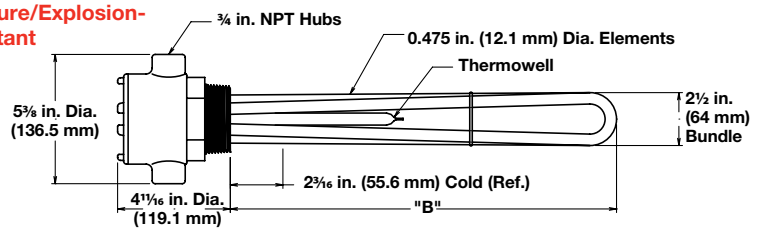
### Application: Process Water

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                        | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                    | Part<br>Number                       | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |                       | Part<br>Number ⑤                                   | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |                       |
|----------------------------------------------------------------------------------------------------|-------|------|----|-----------------------------------------|--------------------------------------|----------------------|---------------------------|-----------------------|----------------------------------------------------|----------------------|---------------------------|-----------------------|
| <b>48 W/in<sup>2</sup><br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b> |       |      |    |                                         | <b>General Purpose<br/>Enclosure</b> |                      | <b>Type J<br/>T/C</b>     | <b>Type K<br/>T/C</b> | <b>Moisture/Explosion-<br/>Resistant Enclosure</b> |                      | <b>Type J<br/>T/C</b>     | <b>Type K<br/>T/C</b> |
|                                                                                                    | 120   | 3.0  | 1  | 9 <sup>3</sup> / <sub>8</sub> (238.1)   | BLN79G1S                             | 6 (3)                | C/F                       | C/F                   | BLN79G1C                                           | 9 (4)                | C/F                       | C/F                   |
|                                                                                                    | 240   | 3.0  | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)   | BLN79G3S                             | 6 (3)                | C2-50                     | C2-92                 | BLN79G3C                                           | 9 (4)                | C3-94                     | C3-93                 |
|                                                                                                    | 480   | 3.0  | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)   | BLN79G5S                             | 6 (3)                | C2-43                     | C2-35                 | BLN79G5C                                           | 9 (4)                | C3-116                    | C3-118                |
|                                                                                                    | 120   | 4.5  | 1  | 12 <sup>7</sup> / <sub>8</sub> (327.0)  | BLN712R1S                            | 7 (4)                | C/F                       | C/F                   | BLN712R1C                                          | 10 (5)               | C/F                       | C/F                   |
|                                                                                                    | 240   | 4.5  | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0)  | BLN712R3S                            | 7 (4)                | C2-50                     | C2-92                 | BLN712R3C                                          | 10 (5)               | C3-94                     | C3-93                 |
|                                                                                                    | 480   | 4.5  | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0)  | BLN712R5S                            | 7 (4)                | C2-43                     | C2-35                 | BLN712R5C                                          | 10 (5)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 6.0  | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | BLN717G3S                            | 9 (4)                | C2-50                     | C2-92                 | BLN717G3C                                          | 12 (6)               | C3-94                     | C3-93                 |
|                                                                                                    | 480   | 6.0  | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | BLN717G5S                            | 9 (4)                | C2-43                     | C2-35                 | BLN717G5C                                          | 12 (6)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 7.5  | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8)  | BLN719R3S                            | 11 (5)               | C2-50                     | C2-92                 | BLN719R3C                                          | 14 (7)               | C3-94                     | C3-93                 |
|                                                                                                    | 480   | 7.5  | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8)  | BLN719R5S                            | 11 (5)               | C2-43                     | C2-35                 | BLN719R5C                                          | 14 (7)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 9.0  | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | BLN724R3S                            | 12 (6)               | C2-50                     | C2-92                 | BLN724R3C                                          | 15 (7)               | C3-94                     | C3-93                 |
|                                                                                                    | 480   | 9.0  | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | BLN724R5S                            | 12 (6)               | C2-43                     | C2-35                 | BLN724R5C                                          | 15 (7)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 12.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | BLN732G3S                            | 14 (7)               | C2-236                    | C2-214                | BLN732G3C                                          | 17 (8)               | C3-114                    | C3-115                |
|                                                                                                    | 480   | 12.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | BLN732G5S                            | 14 (7)               | C2-43                     | C2-35                 | BLN732G5C                                          | 17 (8)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 15.0 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | BLN739R3S                            | 15 (7)               | C2-236                    | C2-214                | BLN739R3C                                          | 18 (9)               | C3-114                    | C3-115                |
|                                                                                                    | 480   | 15.0 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | BLN739R5S                            | 15 (7)               | C2-43                     | C2-35                 | BLN739R5C                                          | 18 (9)               | C3-116                    | C3-118                |
|                                                                                                    | 240   | 18.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | BLN747G3S                            | 17 (8)               | C2-236                    | C2-214                | BLN747G3C                                          | 20 (9)               | C3-114                    | C3-115                |
|                                                                                                    | 480   | 18.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | BLN747G5S                            | 17 (8)               | C2-43                     | C2-35                 | BLN747G5C                                          | 20 (9)               | C3-116                    | C3-118                |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)



# Immersion Heaters



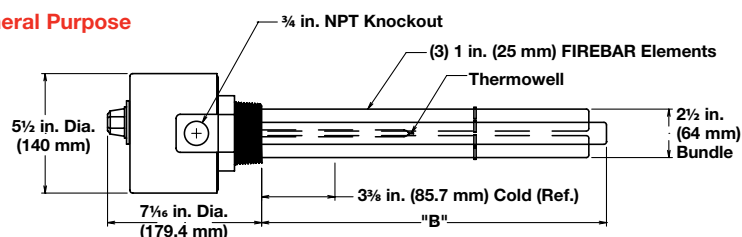
## WATROD and FIREBAR Screw Plug Immersion Heaters



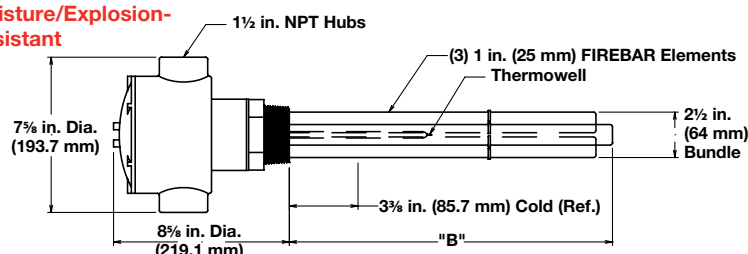
### Application: Process Water

- 2 1/2 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- General purpose enclosure
  - Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



|                                                                                            |       |      |    |                      |                      | Type 5A<br>(60 to 250°F)                     |                           |               | Type 7A<br>(100 to 550°F)                    |                           |               |
|--------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|----------------------------------------------|---------------------------|---------------|----------------------------------------------|---------------------------|---------------|
| Description                                                                                | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number                               | WATCONNECT<br>Part Number |               | Part<br>Number                               | WATCONNECT<br>Part Number |               |
|                                                                                            |       |      |    |                      |                      | General Purpose<br>Enclosure                 | Type J<br>T/C             | Type K<br>T/C | General Purpose<br>Enclosure                 | Type J<br>T/C             | Type K<br>T/C |
| 45 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(7 W/cm <sup>2</sup> ) | 240   | 6.0  | 3  | 12 (305)             | 12 (6)               | BLNF12A27S5A                                 | C/F                       | C/F           | BLNF12A27S7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 7.5  | 3  | 14 1/2 (368)         | 12 (6)               | BLNF14J27S5A                                 | C/F                       | C/F           | BLNF14J27S7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 9.0  | 3  | 17 (432)             | 13 (6)               | BLNF17A27S5A                                 | C/F                       | C/F           | BLNF17A27S7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 12.0 | 3  | 21 1/2 (546)         | 15 (7)               | BLNF21J27S5A                                 | C/F                       | C/F           | BLNF21J27S7A                                 | C/F                       | C/F           |
|                                                                                            |       |      |    |                      |                      | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C |
| 45 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(7 W/cm <sup>2</sup> ) | 240   | 6.0  | 3  | 12 (305)             | 14 (7)               | BLNF12A27C5A                                 | C/F                       | C/F           | BLNF12A27C7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 7.5  | 3  | 14 1/2 (368)         | 15 (7)               | BLNF14J27C5A                                 | C/F                       | C/F           | BLNF14J27C7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 9.0  | 3  | 17 (432)             | 16 (8)               | BLNF17A27C5A                                 | C/F                       | C/F           | BLNF17A27C7A                                 | C/F                       | C/F           |
|                                                                                            | 240   | 12.0 | 3  | 21 1/2 (546)         | 18 (9)               | BLNF21J27C5A                                 | C/F                       | C/F           | BLNF21J27C7A                                 | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters



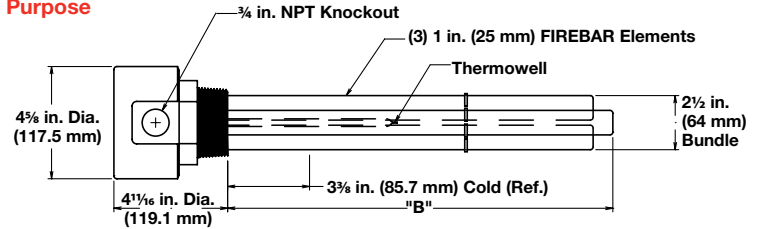
## WATROD and FIREBAR Screw Plug Immersion Heaters



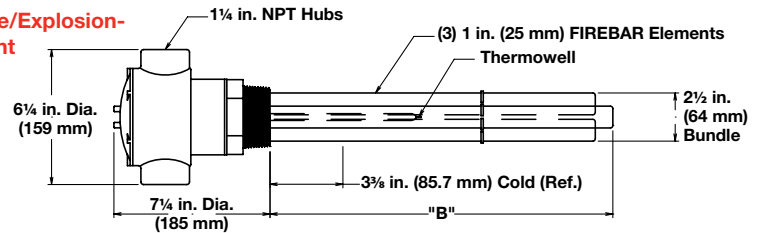
### Application: Process Water

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|--------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                            |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| 45 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(7 W/cm <sup>2</sup> ) | 240   | 6.0  | 3  | 12 (305)             | BLNF12A27S                   | 10 (5)               | C2-50                     | C2-92         | BLNF12A27C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                            | 240   | 7.5  | 3  | 14 1/2 (368)         | BLNF14J27S                   | 11 (5)               | C2-50                     | C2-92         | BLNF14J27C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                            | 240   | 9.0  | 3  | 17 (432)             | BLNF17A27S                   | 12 (6)               | C2-50                     | C2-92         | BLNF17A27C                                 | 15 (7)               | C3-94                     | C3-93         |
|                                                                                            | 240   | 12.0 | 3  | 21 1/2 (546)         | BLNF21J27S                   | 14 (7)               | C2-236                    | C2-214        | BLNF21J27C                                 | 17 (8)               | C3-114                    | C3-115        |
|                                                                                            | 480   | 12.0 | 3  | 21 1/2 (546)         | BLNF21J28S                   | 14 (7)               | C2-43                     | C2-35         | BLNF21J28C                                 | 17 (8)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 15.0 | 3  | 26 1/2 (673)         | BLNF26J27S                   | 17 (8)               | C2-236                    | C2-214        | BLNF26J27C                                 | 20 (9)               | C3-114                    | C3-115        |
|                                                                                            | 480   | 15.0 | 3  | 26 1/2 (673)         | BLNF26J28S                   | 17 (8)               | C2-43                     | C2-35         | BLNF26J28C                                 | 20 (9)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 18.0 | 3  | 31 1/2 (800)         | BLNF31J27S                   | 18 (9)               | C2-236                    | C2-214        | BLNF31J27C                                 | 21 (10)              | C3-114                    | C3-115        |
|                                                                                            | 480   | 18.0 | 3  | 31 1/2 (800)         | BLNF31J28S                   | 18 (9)               | C2-43                     | C2-35         | BLNF31J28C                                 | 21 (10)              | C3-116                    | C3-118        |
|                                                                                            | 480   | 24.0 | 3  | 41 (1041)            | BLNF41A28S                   | 20 (9)               | C2-225                    | C2-226        | BLNF41A28C                                 | 23 (11)              | C3-117                    | C3-119        |
|                                                                                            | 480   | 30.0 | 3  | 50 1/2 (1283)        | BLNF50J28S                   | 22 (10)              | C2-225                    | C2-226        | BLNF50J28C                                 | 25 (12)              | C3-117                    | C3-119        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters



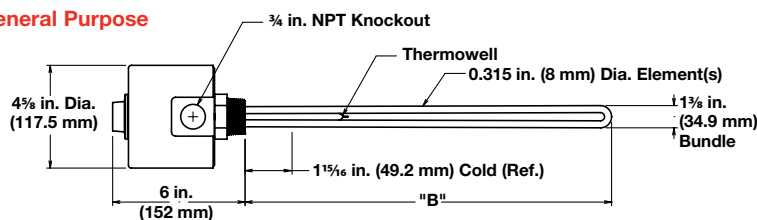
## WATROD and FIREBAR Screw Plug Immersion Heaters



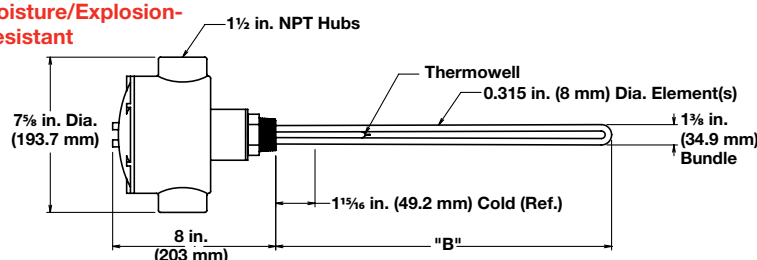
### Application: Forced Air and Caustic Solutions

- 1 1/4 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure  
(suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts   | kW  | Ph | "B" Dim.<br>in. (mm)                   | Ship Wt.<br>lbs (kg) | Type 2<br>(30 to 250°F)                     |                           |               | Type 3<br>(175 to 550°F)                    |                           |               |
|------------------------------------------------------------------------------------------------------|---------|-----|----|----------------------------------------|----------------------|---------------------------------------------|---------------------------|---------------|---------------------------------------------|---------------------------|---------------|
|                                                                                                      |         |     |    |                                        |                      | Part<br>Number                              | WATCONNECT<br>Part Number |               | Part<br>Number                              | WATCONNECT<br>Part Number |               |
|                                                                                                      |         |     |    |                                        |                      | General Purpose<br>Enclosure                | Type J<br>T/C             | Type K<br>T/C | General Purpose<br>Enclosure                | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 1.0 | 1  | 13 <sup>3</sup> / <sub>8</sub> (339.7) | 6 (3)                | <b>BEN13G6S2</b>                            | C/F                       | C/F           | <b>BEN13G6S3</b>                            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 1.5 | 1  | 19 (483.0)                             | 7 (4)                | <b>BEN19A6S2</b>                            | C/F                       | C/F           | <b>BEN19A6S3</b>                            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 2.0 | 1  | 24 <sup>3</sup> / <sub>8</sub> (619.1) | 8 (4)                | <b>BEN24G6S2</b>                            | C/F                       | C/F           | <b>BEN24G6S3</b>                            | C/F                       | C/F           |
|                                                                                                      |         |     |    |                                        |                      |                                             |                           |               |                                             |                           |               |
|                                                                                                      |         |     |    |                                        |                      | Moisture/Explosion-<br>Resistant Enclosure⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure⑤ | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 1.0 | 1  | 13 <sup>3</sup> / <sub>8</sub> (339.7) | 10 (5)               | <b>BEN13G6C2</b>                            | C/F                       | C/F           | <b>BEN13G6C3</b>                            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 1.5 | 1  | 19 (483.0)                             | 11 (5)               | <b>BEN19A6C2</b>                            | C/F                       | C/F           | <b>BEN19A6C3</b>                            | C/F                       | C/F           |
|                                                                                                      | 120/240 | 2.0 | 1  | 24 <sup>3</sup> / <sub>8</sub> (619.1) | 12 (6)               | <b>BEN24G6C2</b>                            | C/F                       | C/F           | <b>BEN24G6C3</b>                            | C/F                       | C/F           |
|                                                                                                      |         |     |    |                                        |                      |                                             |                           |               |                                             |                           |               |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

④ Wired for higher voltage

⑤ No third party recognition

# Immersion Heaters



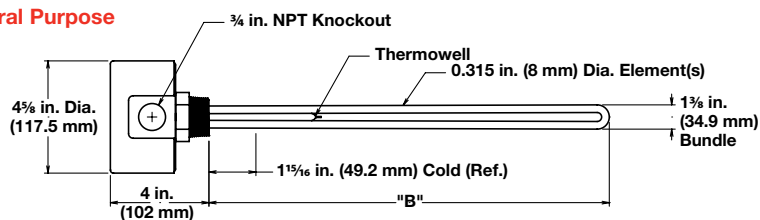
## WATROD and FIREBAR Screw Plug Immersion Heaters



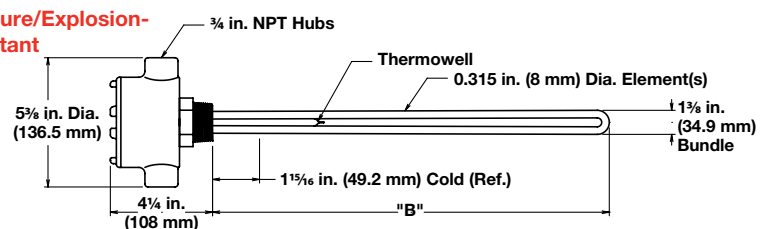
### Application: Forced Air and Caustic Solutions

- 1 1/4 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure  
(suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts       | kW  | Ph | "B" Dim.<br>in. (mm)                   | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number |               | 240V WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------------|-----|----|----------------------------------------|------------------------------|----------------------|--------------------------------|---------------|--------------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |             |     |    |                                        | General Purpose<br>Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C | Moisture Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ④<br/>304 SS Plug<br/>2-Alloy 800<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/<br>240 | 1.0 | 1  | 13 <sup>3</sup> / <sub>8</sub> (339.7) | <b>BEN13G6S</b>              | 6 (3)                | <b>C1-15</b>                   | <b>C1-12</b>  | <b>C1-17</b>                   | <b>C1-13</b>  | <b>BEN13G6C</b>                            | 9 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                                      | 120/<br>240 | 1.5 | 1  | 19 (483.0)                             | <b>BEN19A6S</b>              | 7 (4)                | <b>C1-15</b>                   | <b>C1-12</b>  | <b>C1-17</b>                   | <b>C1-13</b>  | <b>BEN19A6C</b>                            | 10 (5)               | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                                      | 120/<br>240 | 2.0 | 1  | 24 <sup>3</sup> / <sub>8</sub> (619.1) | <b>BEN24G6S</b>              | 8 (4)                | <b>C1-15</b>                   | <b>C1-12</b>  | <b>C1-17</b>                   | <b>C1-13</b>  | <b>BEN24G6C</b>                            | 11 (5)               | <b>C/F</b>                | <b>C/F</b>    |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

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# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters



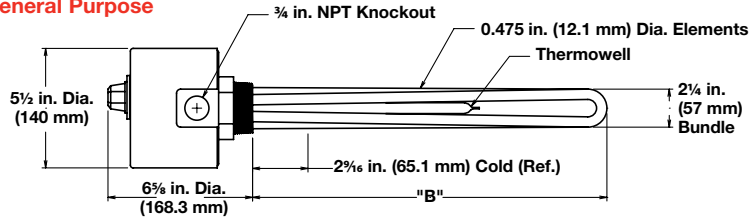
### Application: Forced Air and Caustic Solutions

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

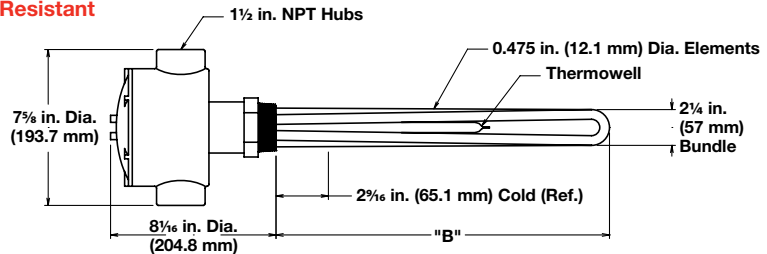
**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                                                  | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                  | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                      |                           |            | Type 5A (60 to 250°F)                     |                           |            | Type 7A (100 to 550°F)                    |                           |            |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----|----|---------------------------------------|----------------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|
|                                                                                                                              |       |     |    |                                       |                      | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            |
|                                                                                                                              |       |     |    |                                       |                      | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥</b><br><b>304 SS Plug</b><br><b>3-Alloy 800</b><br><b>Elements</b><br><b>(3.6 W/cm<sup>2</sup>)</b> | 240   | 3.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 8 (4)                | BHNA17N3S4                                | C/F                       | C/F        | BHNA17N3S5A                               | C/F                       | C/F        | BHNA17N3S7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 3.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 8 (4)                | BHNA17N5S4                                | C/F                       | C/F        | BHNA17N5S5A                               | C/F                       | C/F        | BHNA17N5S7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 4.5 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 10 (5)               | BHNA25E3S4                                | C/F                       | C/F        | BHNA25E3S5A                               | C/F                       | C/F        | BHNA25E3S7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 4.5 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 10 (5)               | BHNA25E5S4                                | C/F                       | C/F        | BHNA25E5S5A                               | C/F                       | C/F        | BHNA25E5S7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 6.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 10 (5)               | BHNA32N3S4                                | C/F                       | C/F        | BHNA32N3S5A                               | C/F                       | C/F        | BHNA32N3S7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 6.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 10 (5)               | BHNA32N5S4                                | C/F                       | C/F        | BHNA32N5S5A                               | C/F                       | C/F        | BHNA32N5S7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 7.5 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | 11 (5)               | BHNA40E3S4                                | C/F                       | C/F        | BHNA40E3S5A                               | C/F                       | C/F        | BHNA40E3S7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 9.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | 12 (6)               | BHNA47N3S4                                | C/F                       | C/F        | BHNA47N3S5A                               | C/F                       | C/F        | BHNA47N3S7A                               | C/F                       | C/F        |
|                                                                                                                              |       |     |    |                                       |                      | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥</b><br><b>304 SS Plug</b><br><b>3-Alloy 800</b><br><b>Elements</b><br><b>(3.6 W/cm<sup>2</sup>)</b> | 240   | 3.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 11 (5)               | BHNA17N3C4                                | C/F                       | C/F        | BHNA17N3C5A                               | C/F                       | C/F        | BHNA17N3C7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 3.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 11 (5)               | BHNA17N5C4                                | C/F                       | C/F        | BHNA17N5C5A                               | C/F                       | C/F        | BHNA17N5C7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 4.5 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 13 (6)               | BHNA25E3C4                                | C/F                       | C/F        | BHNA25E3C5A                               | C/F                       | C/F        | BHNA25E3C7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 4.5 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 13 (6)               | BHNA25E5C4                                | C/F                       | C/F        | BHNA25E5C5A                               | C/F                       | C/F        | BHNA25E5C7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 6.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 13 (6)               | BHNA32N3C4                                | C/F                       | C/F        | BHNA32N3C5A                               | C/F                       | C/F        | BHNA32N3C7A                               | C/F                       | C/F        |
|                                                                                                                              | 480   | 6.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 13 (6)               | BHNA32N5C4                                | C/F                       | C/F        | BHNA32N5C5A                               | C/F                       | C/F        | BHNA32N5C7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 7.5 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | 14 (7)               | BHNA40E3C4                                | C/F                       | C/F        | BHNA40E3C5A                               | C/F                       | C/F        | BHNA40E3C7A                               | C/F                       | C/F        |
|                                                                                                                              | 240   | 9.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | 15 (7)               | BHNA47N3C4                                | C/F                       | C/F        | BHNA47N3C5A                               | C/F                       | C/F        | BHNA47N3C7A                               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters

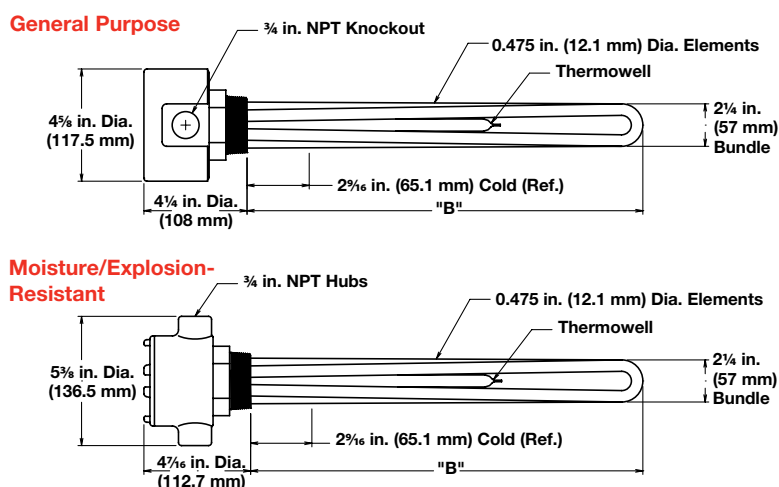


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure  
(suitable for use in non-classified areas only)



| Description                                                                                          | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                  | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------|------|----|---------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |       |      |    |                                       | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ⑥<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120   | 3.0  | 1  | 17 <sup>3</sup> / <sub>4</sub> (451)  | BHNA17N1S                    | 7 (4)                | C/F                       | C/F           | BHNA17N1C                                  | 10 (5)               | C/F                       | C/F           |
|                                                                                                      | 240   | 3.0  | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | BHNA17N3S                    | 7 (4)                | C2-50                     | C2-92         | BHNA17N3C                                  | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 3.0  | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | BHNA17N5S                    | 7 (4)                | C2-43                     | C2-35         | BHNA17N5C                                  | 10 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 120   | 4.5  | 1  | 25 <sup>1</sup> / <sub>4</sub> (641)  | BHNA25E1S                    | 8 (4)                | C/F                       | C/F           | BHNA25E1C                                  | 11 (5)               | C/F                       | C/F           |
|                                                                                                      | 240   | 4.5  | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | BHNA25E3S                    | 8 (4)                | C2-50                     | C2-92         | BHNA25E3C                                  | 11 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 4.5  | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | BHNA25E5S                    | 8 (4)                | C2-43                     | C2-35         | BHNA25E5C                                  | 11 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 6.0  | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | BHNA32N3S                    | 9 (4)                | C2-50                     | C2-92         | BHNA32N3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 6.0  | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | BHNA32N5S                    | 9 (4)                | C2-43                     | C2-35         | BHNA32N5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 7.5  | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | BHNA40E3S                    | 10 (5)               | C2-50                     | C2-92         | BHNA40E3C                                  | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 7.5  | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | BHNA40E5S                    | 10 (5)               | C2-43                     | C2-35         | BHNA40E5C                                  | 13 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 9.0  | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | BHNA47N3S                    | 11 (5)               | C2-50                     | C2-92         | BHNA47N3C                                  | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 9.0  | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | BHNA47N5S                    | 11 (5)               | C2-43                     | C2-35         | BHNA47N5C                                  | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 12.5 | 3  | 64 <sup>1</sup> / <sub>4</sub> (1632) | BHNA64E3S                    | 15 (7)               | C2-236                    | C2-214        | BHNA64E3C                                  | 18 (9)               | C3-114                    | C3-115        |
|                                                                                                      | 480   | 12.5 | 3  | 64 <sup>1</sup> / <sub>4</sub> (1632) | BHNA64E5S                    | 15 (7)               | C2-43                     | C2-35         | BHNA64E5C                                  | 18 (9)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 15.0 | 3  | 76 <sup>3</sup> / <sub>4</sub> (1950) | BHNA76E3S                    | 18 (9)               | C2-236                    | C2-214        | BHNA76E3C                                  | 21 (10)              | C3-114                    | C3-115        |
|                                                                                                      | 480   | 15.0 | 3  | 76 <sup>3</sup> / <sub>4</sub> (1950) | BHNA76E5S                    | 18 (9)               | C2-43                     | C2-35         | BHNA76E5C                                  | 21 (10)              | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

⑥ Can be rewired wye to produce  $\frac{1}{3}$  of the original kW and watt density (3-phase only)

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters



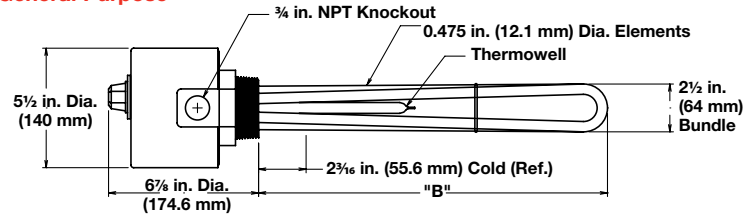
### Application: Forced Air and Caustic Solutions

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

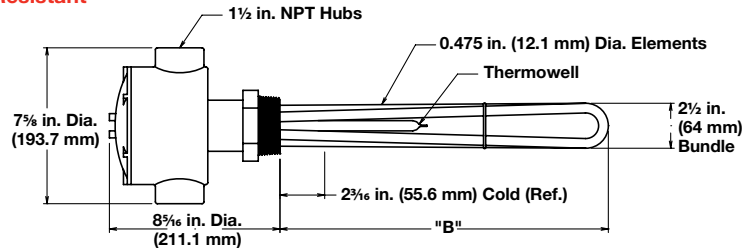
**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                      | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                    | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                      |                           |            | Type 5A (60 to 250°F)                     |                           |            | Type 7A (100 to 550°F)                    |                           |            |
|--------------------------------------------------------------------------------------------------|-------|-----|----|-----------------------------------------|----------------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|
|                                                                                                  |       |     |    |                                         |                      | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            |
|                                                                                                  |       |     |    |                                         |                      | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥<br/>304 SS Plug<br/>3-Alloy 800 Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 240   | 3.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | 10 (5)               | BLNA17G3S4                                | C/F                       | C/F        | BLNA17G3S5A                               | C/F                       | C/F        | BLNA17G3S7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 3.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | 10 (5)               | BLNA17G5S4                                | C/F                       | C/F        | BLNA17G5S5A                               | C/F                       | C/F        | BLNA17G5S7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 4.5 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | 13 (6)               | BLNA24R3S4                                | C/F                       | C/F        | BLNA24R3S5A                               | C/F                       | C/F        | BLNA24R3S7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 4.5 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | 13 (6)               | BLNA24R5S4                                | C/F                       | C/F        | BLNA24R5S5A                               | C/F                       | C/F        | BLNA24R5S7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 6.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 15 (7)               | BLNA32G3S4                                | C/F                       | C/F        | BLNA32G3S5A                               | C/F                       | C/F        | BLNA32G3S7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 6.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 15 (7)               | BLNA32G5S4                                | C/F                       | C/F        | BLNA32G5S5A                               | C/F                       | C/F        | BLNA32G5S7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 7.5 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | 16 (8)               | BLNA39R3S4                                | C/F                       | C/F        | BLNA39R3S5A                               | C/F                       | C/F        | BLNA39R3S7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 9.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | 18 (9)               | BLNA47G3S4                                | C/F                       | C/F        | BLNA47G3S5A                               | C/F                       | C/F        | BLNA47G3S7A                               | C/F                       | C/F        |
|                                                                                                  |       |     |    |                                         |                      | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥<br/>304 SS Plug<br/>3-Alloy 800 Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 240   | 3.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | 13 (6)               | BLNA17G3C4                                | C/F                       | C/F        | BLNA17G3C5A                               | C/F                       | C/F        | BLNA17G3C7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 3.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | 13 (6)               | BLNA17G5C4                                | C/F                       | C/F        | BLNA17G5C5A                               | C/F                       | C/F        | BLNA17G5C7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 4.5 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | 16 (8)               | BLNA24R3C4                                | C/F                       | C/F        | BLNA24R3C5A                               | C/F                       | C/F        | BLNA24R3C7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 4.5 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | 16 (8)               | BLNA24R5C4                                | C/F                       | C/F        | BLNA24R5C5A                               | C/F                       | C/F        | BLNA24R5C7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 6.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 18 (9)               | BLNA32G3C4                                | C/F                       | C/F        | BLNA32G3C5A                               | C/F                       | C/F        | BLNA32G3C7A                               | C/F                       | C/F        |
|                                                                                                  | 480   | 6.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 18 (9)               | BLNA32G5C4                                | C/F                       | C/F        | BLNA32G5C5A                               | C/F                       | C/F        | BLNA32G5C7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 7.5 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | 19 (9)               | BLNA39R3C4                                | C/F                       | C/F        | BLNA39R3C5A                               | C/F                       | C/F        | BLNA39R3C7A                               | C/F                       | C/F        |
|                                                                                                  | 240   | 9.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | 21 (10)              | BLNA47G3C4                                | C/F                       | C/F        | BLNA47G3C5A                               | C/F                       | C/F        | BLNA47G3C7A                               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

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# Immersion Heaters



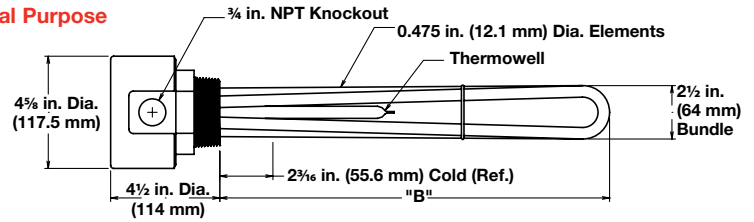
## WATROD and FIREBAR Screw Plug Immersion Heaters



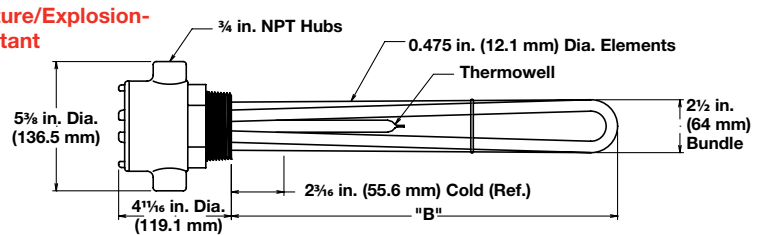
### Application: Forced Air and Caustic Solutions

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                                          | Volts | kW   | Ph | "B" Dim.<br>in. (mm)                    | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------|------|----|-----------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |       |      |    |                                         | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ⑥<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120   | 3.0  | 1  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | BLNA17G1S                    | 9 (4)                | C/F                       | C/F           | BLNA17G1C                                  | 12 (6)               | C/F                       | C/F           |
|                                                                                                      | 240   | 3.0  | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | BLNA17G3S                    | 9 (4)                | C2-50                     | C2-92         | BLNA17G3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 3.0  | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | BLNA17G5S                    | 9 (4)                | C2-43                     | C2-35         | BLNA17G5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 120   | 4.5  | 1  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | BLNA24R1S                    | 12 (6)               | C/F                       | C/F           | BLNA24R1C                                  | 15 (7)               | C/F                       | C/F           |
|                                                                                                      | 240   | 4.5  | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | BLNA24R3S                    | 12 (6)               | C2-50                     | C2-92         | BLNA24R3C                                  | 15 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 4.5  | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | BLNA24R5S                    | 12 (6)               | C2-43                     | C2-35         | BLNA24R5C                                  | 15 (7)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 6.0  | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | BLNA32G3S                    | 14 (7)               | C2-50                     | C2-92         | BLNA32G3C                                  | 17 (8)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 6.0  | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | BLNA32G5S                    | 14 (7)               | C2-43                     | C2-35         | BLNA32G5C                                  | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 7.5  | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | BLNA39R3S                    | 15 (7)               | C2-50                     | C2-92         | BLNA39R3C                                  | 18 (9)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 7.5  | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | BLNA39R5S                    | 15 (7)               | C2-43                     | C2-35         | BLNA39R5C                                  | 18 (9)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 9.0  | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | BLNA47G3S                    | 17 (8)               | C2-50                     | C2-92         | BLNA47G3C                                  | 20 (9)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 9.0  | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | BLNA47G5S                    | 17 (8)               | C2-43                     | C2-35         | BLNA47G5C                                  | 20 (9)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 12.5 | 3  | 63 <sup>7</sup> / <sub>8</sub> (1622.4) | BLNA63R3S                    | 20 (9)               | C2-236                    | C2-214        | BLNA63R3C                                  | 23 (11)              | C3-114                    | C3-115        |
|                                                                                                      | 480   | 12.5 | 3  | 63 <sup>7</sup> / <sub>8</sub> (1622.4) | BLNA63R5S                    | 20 (9)               | C2-43                     | C2-35         | BLNA63R5C                                  | 23 (11)              | C3-116                    | C3-118        |
|                                                                                                      | 240   | 15.0 | 3  | 76 <sup>3</sup> / <sub>8</sub> (1939.9) | BLNA76G3S                    | 23 (11)              | C2-236                    | C2-214        | BLNA76G3C                                  | 26 (12)              | C3-114                    | C3-115        |
|                                                                                                      | 480   | 15.0 | 3  | 76 <sup>3</sup> / <sub>8</sub> (1939.9) | BLNA76G5S                    | 23 (11)              | C2-43                     | C2-35         | BLNA76G5C                                  | 26 (12)              | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



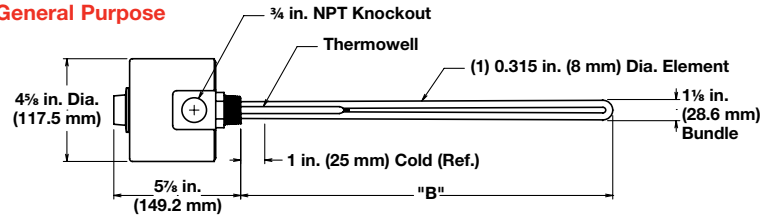
## WATROD and FIREBAR Screw Plug Immersion Heaters



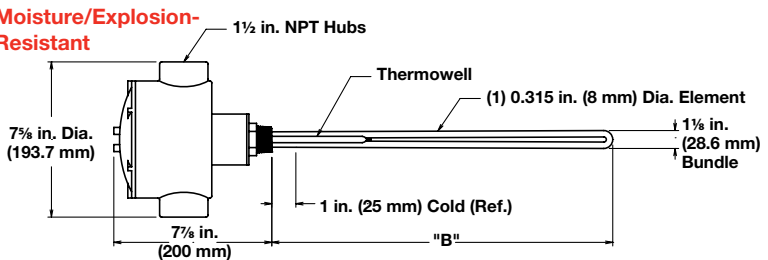
### Application: Lightweight Oils and Heat Transfer Oils

- 1 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                          | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 2 (30 to 250°F)                     |                        |            | Type 3 (175 to 550°F)                    |                        |            |
|--------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                      |       |      |    |                      |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                      |       |      |    |                      |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup><br>Steel Plug<br>1-Steel<br>Element<br>(3.6 W/cm <sup>2</sup> ) | 120   | 0.25 | 1  | 6 1/2 (165)          | 3 (2)                | BCS6J1S2                                 | C/F                    | C/F        | BCS6J1S3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.25 | 1  | 6 1/2 (165)          | 3 (2)                | BCS6J10S2                                | C/F                    | C/F        | BCS6J10S3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.35 | 1  | 9 1/4 (235)          | 4 (2)                | BCS9E1S2                                 | C/F                    | C/F        | BCS9E1S3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.35 | 1  | 9 1/4 (235)          | 4 (2)                | BCS9E10S2                                | C/F                    | C/F        | BCS9E10S3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.50 | 1  | 9 3/8 (238)          | 4 (2)                | BCS9G1S2                                 | C/F                    | C/F        | BCS9G1S3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.50 | 1  | 9 3/8 (238)          | 4 (2)                | BCS9G10S2                                | C/F                    | C/F        | BCS9G10S3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.75 | 1  | 13 1/2 (343)         | 5 (3)                | BCS13J1S2                                | C/F                    | C/F        | BCS13J1S3                                | C/F                    | C/F        |
|                                                                                      | 240   | 0.75 | 1  | 13 1/2 (343)         | 5 (3)                | BCS13J10S2                               | C/F                    | C/F        | BCS13J10S3                               | C/F                    | C/F        |
|                                                                                      | 120   | 1.00 | 1  | 16 3/4 (426)         | 6 (3)                | BCS16N1S2                                | C/F                    | C/F        | BCS16N1S3                                | C/F                    | C/F        |
|                                                                                      | 240   | 1.00 | 1  | 16 3/4 (426)         | 6 (3)                | BCS16N10S2                               | C/F                    | C/F        | BCS16N10S3                               | C/F                    | C/F        |
|                                                                                      | 120   | 1.50 | 1  | 23 3/4 (603)         | 7 (4)                | BCS23N1S2                                | C/F                    | C/F        | BCS23N1S3                                | C/F                    | C/F        |
|                                                                                      | 240   | 1.50 | 1  | 23 3/4 (603)         | 7 (4)                | BCS23N10S2                               | C/F                    | C/F        | BCS23N10S3                               | C/F                    | C/F        |
|                                                                                      |       |      |    |                      |                      | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup><br>Steel Plug<br>1-Steel<br>Element<br>(3.6 W/cm <sup>2</sup> ) | 120   | 0.25 | 1  | 6 1/2 (165)          | 3 (2)                | BCS6J1C2                                 | C/F                    | C/F        | BCS6J1C3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.25 | 1  | 6 1/2 (165)          | 3 (2)                | BCS6J10C2                                | C/F                    | C/F        | BCS6J10C3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.35 | 1  | 9 1/4 (235)          | 4 (2)                | BCS9E1C2                                 | C/F                    | C/F        | BCS9E1C3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.35 | 1  | 9 1/4 (235)          | 4 (2)                | BCS9E10C2                                | C/F                    | C/F        | BCS9E10C3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.50 | 1  | 9 3/8 (238)          | 4 (2)                | BCS9G1C2                                 | C/F                    | C/F        | BCS9G1C3                                 | C/F                    | C/F        |
|                                                                                      | 240   | 0.50 | 1  | 9 3/8 (238)          | 4 (2)                | BCS9G10C2                                | C/F                    | C/F        | BCS9G10C3                                | C/F                    | C/F        |
|                                                                                      | 120   | 0.75 | 1  | 13 1/2 (343)         | 5 (3)                | BCS13J1C2                                | C/F                    | C/F        | BCS13J1C3                                | C/F                    | C/F        |
|                                                                                      | 240   | 0.75 | 1  | 13 1/2 (343)         | 5 (3)                | BCS13J10C2                               | C/F                    | C/F        | BCS13J10C3                               | C/F                    | C/F        |
|                                                                                      | 120   | 1.00 | 1  | 16 3/4 (426)         | 6 (3)                | BCS16N1C2                                | C/F                    | C/F        | BCS16N1C3                                | C/F                    | C/F        |
|                                                                                      | 240   | 1.00 | 1  | 16 3/4 (426)         | 6 (3)                | BCS16N10C2                               | C/F                    | C/F        | BCS16N10C3                               | C/F                    | C/F        |
|                                                                                      | 120   | 1.50 | 1  | 23 3/4 (603)         | 7 (4)                | BCS23N1C2                                | C/F                    | C/F        | BCS23N1C3                                | C/F                    | C/F        |
|                                                                                      | 240   | 1.50 | 1  | 23 3/4 (603)         | 7 (4)                | BCS23N10C2                               | C/F                    | C/F        | BCS23N10C3                               | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

# Immersion Heaters



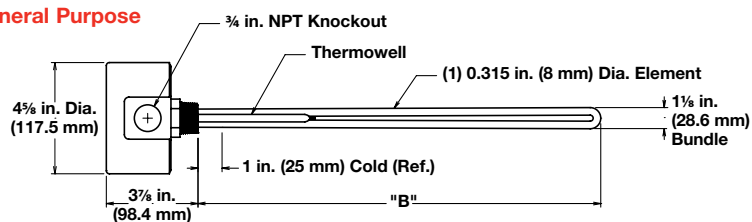
## WATROD and FIREBAR Screw Plug Immersion Heaters



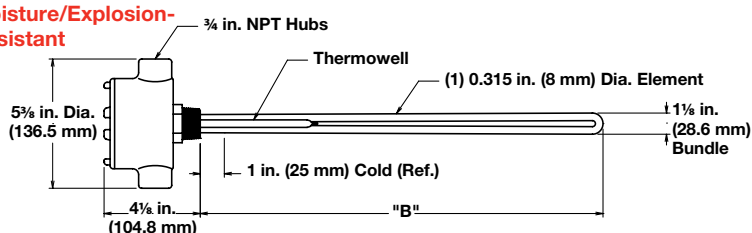
### Application: Lightweight Oils and Heat Transfer Oils

- 1 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                  | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|----------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                              |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup><br/>Steel Plug<br/>1-Steel<br/>Element<br/>(3.6 W/cm<sup>2</sup>)</b> | 120   | 0.25 | 1  | 6 1/2 (165)          | <b>BCS6J1S</b>               | 3 (2)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS6J1C</b>                             | 6 (3)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 0.25 | 1  | 6 1/2 (165)          | <b>BCS6J10S</b>              | 3 (2)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS6J10C</b>                            | 6 (3)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 120   | 0.35 | 1  | 9 1/4 (235)          | <b>BCS9E1S</b>               | 4 (2)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS9E1C</b>                             | 7 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 0.35 | 1  | 9 1/4 (235)          | <b>BCS9E10S</b>              | 4 (2)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS9E10C</b>                            | 7 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 120   | 0.50 | 1  | 9 3/8 (238)          | <b>BCS9G1S</b>               | 4 (2)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS9G1C</b>                             | 7 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 0.50 | 1  | 9 3/8 (238)          | <b>BCS9G10S</b>              | 4 (2)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS9G10C</b>                            | 7 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 120   | 0.75 | 1  | 13 1/2 (343)         | <b>BCS13J1S</b>              | 5 (3)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS13J1C</b>                            | 8 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 0.75 | 1  | 13 1/2 (343)         | <b>BCS13J10S</b>             | 5 (3)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS13J10C</b>                           | 8 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 120   | 1.00 | 1  | 16 3/4 (426)         | <b>BCS16N1S</b>              | 6 (3)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS16N1C</b>                            | 9 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 1.00 | 1  | 16 3/4 (426)         | <b>BCS16N10S</b>             | 6 (3)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS16N10C</b>                           | 9 (4)                | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 120   | 1.50 | 1  | 23 3/4 (603)         | <b>BCS23N1S</b>              | 7 (4)                | <b>C1-15</b>              | <b>C1-12</b>  | <b>BCS23N1C</b>                            | 10 (5)               | <b>C/F</b>                | <b>C/F</b>    |
|                                                                                              | 240   | 1.50 | 1  | 23 3/4 (603)         | <b>BCS23N10S</b>             | 7 (4)                | <b>C1-17</b>              | <b>C1-13</b>  | <b>BCS23N10C</b>                           | 10 (5)               | <b>C/F</b>                | <b>C/F</b>    |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

# Immersion Heaters



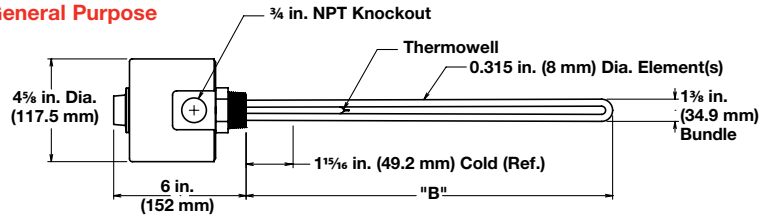
## WATROD and FIREBAR Screw Plug Immersion Heaters



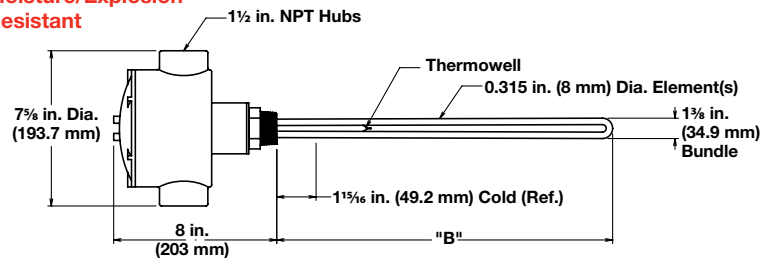
### Application: Lightweight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- WATROD elements
- With thermostat (SPST), Type 2 or 3
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                     | Volts   | kW   | Ph | "B" Dim.<br>in. (mm)                    | Ship Wt.<br>lbs (kg) | Type 2 (30 to 250°F)                                |                        |            | Type 3 (175 to 550°F)                               |                        |            |
|-------------------------------------------------------------------------------------------------|---------|------|----|-----------------------------------------|----------------------|-----------------------------------------------------|------------------------|------------|-----------------------------------------------------|------------------------|------------|
|                                                                                                 |         |      |    |                                         |                      | Part Number                                         | WATCONNECT Part Number |            | Part Number                                         | WATCONNECT Part Number |            |
|                                                                                                 |         |      |    |                                         |                      | General Purpose Enclosure                           | Type J T/C             | Type K T/C | General Purpose Enclosure                           | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ④<br/>Steel Plug<br/>2-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 0.50 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)   | 4 (2)                | BES6G6S2                                            | C/F                    | C/F        | BES6G6S3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.50 | 1  | 7 <sup>3</sup> / <sub>8</sub> (187.3)   | 4 (2)                | BES7G6S2                                            | C/F                    | C/F        | BES7G6S3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.70 | 1  | 8 <sup>7</sup> / <sub>8</sub> (225.4)   | 5 (3)                | BES8R6S2                                            | C/F                    | C/F        | BES8R6S3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.75 | 1  | 10 <sup>1</sup> / <sub>16</sub> (255.6) | 5 (3)                | BES10B6S2                                           | C/F                    | C/F        | BES10B6S3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 1.00 | 1  | 12 <sup>3</sup> / <sub>4</sub> (324.0)  | 6 (3)                | BES12N6S2                                           | C/F                    | C/F        | BES12N6S3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 1.50 | 1  | 19 <sup>3</sup> / <sub>8</sub> (492.1)  | 7 (4)                | BES19G6S2                                           | C/F                    | C/F        | BES19G6S3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 2.00 | 1  | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 8 (4)                | BES25G6S2                                           | C/F                    | C/F        | BES25G6S3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 3.00 | 1  | 36 <sup>7</sup> / <sub>8</sub> (936.6)  | 9 (4)                | BES36R6S2                                           | C/F                    | C/F        | BES36R6S3                                           | C/F                    | C/F        |
|                                                                                                 |         |      |    |                                         |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ④<br/>Steel Plug<br/>2-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 0.50 | 1  | 6 <sup>3</sup> / <sub>8</sub> (161.9)   | 8 (4)                | BES6G6C2                                            | C/F                    | C/F        | BES6G6C3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.50 | 1  | 7 <sup>3</sup> / <sub>8</sub> (187.3)   | 8 (4)                | BES7G6C2                                            | C/F                    | C/F        | BES7G6C3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.70 | 1  | 8 <sup>7</sup> / <sub>8</sub> (225.6)   | 9 (4)                | BES8R6C2                                            | C/F                    | C/F        | BES8R6C3                                            | C/F                    | C/F        |
|                                                                                                 | 120/240 | 0.75 | 1  | 10 <sup>1</sup> / <sub>16</sub> (256.0) | 9 (4)                | BES10B6C2                                           | C/F                    | C/F        | BES10B6C3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 1.00 | 1  | 12 <sup>3</sup> / <sub>4</sub> (324.0)  | 10 (5)               | BES12N6C2                                           | C/F                    | C/F        | BES12N6C3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 1.50 | 1  | 19 <sup>3</sup> / <sub>8</sub> (492.1)  | 11 (5)               | BES19G6C2                                           | C/F                    | C/F        | BES19G6C3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 2.00 | 1  | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 12 (6)               | BES25G6C2                                           | C/F                    | C/F        | BES25G6C3                                           | C/F                    | C/F        |
|                                                                                                 | 120/240 | 3.00 | 1  | 36 <sup>7</sup> / <sub>8</sub> (936.7)  | 13 (6)               | BES36R6C2                                           | C/F                    | C/F        | BES36R6C3                                           | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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④ Wired for higher voltage

⑤ No third party recognition

# Immersion Heaters



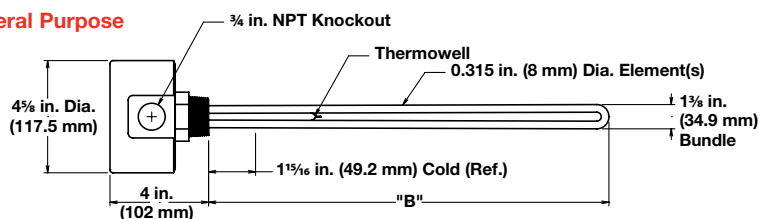
## WATROD and FIREBAR Screw Plug Immersion Heaters



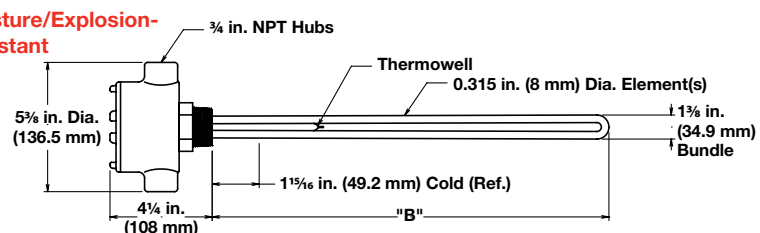
### Application: Lightweight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                    | Volts       | kW   | Ph | “B” Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number | 240V WATCONNECT<br>Part Number | Part<br>Number ⑤ | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number                  |               |               |     |
|----------------------------------------------------------------|-------------|------|----|----------------------|------------------------------|----------------------|--------------------------------|--------------------------------|------------------|----------------------|--------------------------------------------|---------------|---------------|-----|
|                                                                |             |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C                  |                  |                      | Moisture/Explosion-<br>Resistant Enclosure | Type J<br>T/C | Type K<br>T/C |     |
| 23 W/in² ④<br>Steel Plug<br>2-Steel<br>Elements<br>(3.6 W/cm²) | 120/<br>240 | 0.50 | 1  | 6³⁄₈ (161.9)         | BES6G6S                      | 4 (2)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES6G6C                                    | 7 (4)         | C/F           | C/F |
|                                                                | 120/<br>240 | 0.50 | 1  | 7³⁄₈ (187.3)         | BES7G6S                      | 4 (2)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES7G6C                                    | 7 (4)         | C/F           | C/F |
|                                                                | 120/<br>240 | 0.70 | 1  | 8⁷⁄₈ (225.4)         | BES8R6S                      | 5 (3)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES8R6C                                    | 8 (4)         | C/F           | C/F |
|                                                                | 120/<br>240 | 0.75 | 1  | 10¹⁄₁₆ (255.6)       | BES10B6S                     | 5 (3)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES10B6C                                   | 8 (4)         | C/F           | C/F |
|                                                                | 120/<br>240 | 1.00 | 1  | 12³⁄₄ (324.0)        | BES12N6S                     | 6 (3)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES12N6C                                   | 9 (4)         | C/F           | C/F |
|                                                                | 120/<br>240 | 1.50 | 1  | 19³⁄₈ (492.1)        | BES19G6S                     | 7 (4)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES19G6C                                   | 10 (5)        | C/F           | C/F |
|                                                                | 120/<br>240 | 2.00 | 1  | 25³⁄₈ (644.5)        | BES25G6S                     | 8 (4)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES25G6C                                   | 11 (5)        | C/F           | C/F |
|                                                                | 120/<br>240 | 3.00 | 1  | 36⁷⁄₈ (936.6)        | BES36R6S                     | 9 (4)                | C1-15                          | C1-12                          | C1-17            | C1-13                | BES36R6C                                   | 12 (6)        | C/F           | C/F |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

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# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

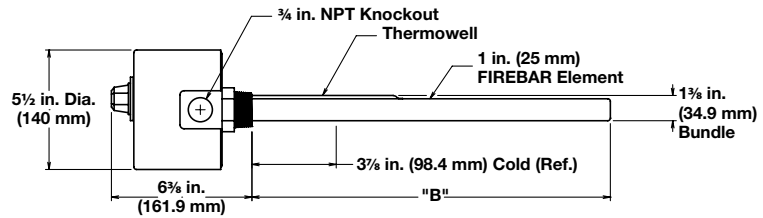


### Application: Lightweight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- With thermostat (DPST), Type 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller, please see following pages for available heaters without thermostats

- General purpose enclosure



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)     |                        |            | Type 7A (100 to 550°F)    |                        |            |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|---------------------------|------------------------|------------|---------------------------|------------------------|------------|
|                                                                                                     |       |      |    |                      |                      | Part Number               | WATCONNECT Part Number |            | Part Number               | WATCONNECT Part Number |            |
|                                                                                                     |       |      |    |                      |                      | General Purpose Enclosure | Type J T/C             | Type K T/C | General Purpose Enclosure | Type J T/C             | Type K T/C |
| <b>30 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(4.7 W/cm<sup>2</sup>)</b> | 240   | 1.70 | 3  | 16 1/8 (409.6)       | 8 (4)                | BDNF16G12S5A              | C/F                    | C/F        | BDNF16G12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 1.70 | 3  | 16 1/8 (409.6)       | 8 (4)                | BDNF16G13S5A              | C/F                    | C/F        | BDNF16G13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 2.20 | 3  | 19 1/8 (485.8)       | 9 (4)                | BDNF19G12S5A              | C/F                    | C/F        | BDNF19G12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 2.20 | 3  | 19 1/8 (485.8)       | 9 (4)                | BDNF19G13S5A              | C/F                    | C/F        | BDNF19G13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 2.80 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L12S5A              | C/F                    | C/F        | BDNF24L12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 2.80 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L13S5A              | C/F                    | C/F        | BDNF24L13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 3.50 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R12S5A              | C/F                    | C/F        | BDNF29R12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 3.50 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R13S5A              | C/F                    | C/F        | BDNF29R13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 4.25 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R12S5A              | C/F                    | C/F        | BDNF34R12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 4.25 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R13S5A              | C/F                    | C/F        | BDNF34R13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 5.70 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G12S5A              | C/F                    | C/F        | BDNF45G12S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 5.70 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G13S5A              | C/F                    | C/F        | BDNF45G13S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 7.20 | 3  | 55 5/8 (1412.9)      | 16 (8)               | BDNF55R12S5A              | C/F                    | C/F        | BDNF55R12S7A              | C/F                    | C/F        |
|                                                                                                     |       |      |    |                      |                      |                           |                        |            |                           |                        |            |
| <b>23 W/in<sup>2</sup> ⑧<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(3.6 W/cm<sup>2</sup>)</b> | 240   | 1.25 | 3  | 16 1/8 (409.6)       | 8 (4)                | BDNF16G20S5A              | C/F                    | C/F        | BDNF16G20S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 1.65 | 3  | 19 1/8 (485.8)       | 9 (4)                | BDNF19G20S5A              | C/F                    | C/F        | BDNF19G20S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 2.15 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L20S5A              | C/F                    | C/F        | BDNF24L20S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 2.15 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L19S5A              | C/F                    | C/F        | BDNF24L19S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 2.65 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R20S5A              | C/F                    | C/F        | BDNF29R20S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 2.65 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R19S5A              | C/F                    | C/F        | BDNF29R19S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 3.20 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R20S5A              | C/F                    | C/F        | BDNF34R20S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 3.20 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R19S5A              | C/F                    | C/F        | BDNF34R19S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 4.25 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G20S5A              | C/F                    | C/F        | BDNF45G20S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 4.25 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G19S5A              | C/F                    | C/F        | BDNF45G19S7A              | C/F                    | C/F        |
|                                                                                                     | 240   | 5.40 | 3  | 55 5/8 (1412.9)      | 16 (8)               | BDNF55R20S5A              | C/F                    | C/F        | BDNF55R20S7A              | C/F                    | C/F        |
|                                                                                                     | 480   | 5.40 | 3  | 55 5/8 (1412.9)      | 16 (8)               | BDNF55R19S5A              | C/F                    | C/F        | BDNF55R19S7A              | C/F                    | C/F        |
|                                                                                                     |       |      |    |                      |                      |                           |                        |            |                           |                        |            |
|                                                                                                     |       |      |    |                      |                      |                           |                        |            |                           |                        |            |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

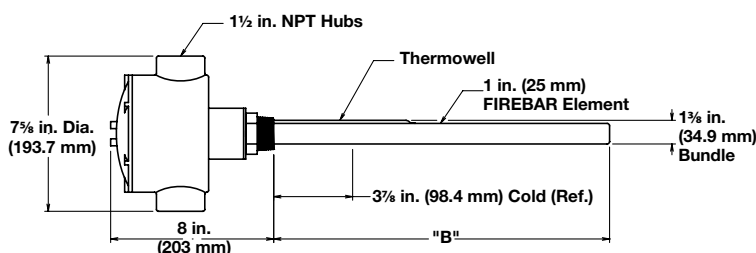
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- ③ Wired for 3-phase operation only
- ⑧ Can be wired for 1-phase operation

## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Lightweight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                           | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)                           |                        |               | Type 7A (100 to 550°F)                          |                        |               |
|-------------------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|-------------------------------------------------|------------------------|---------------|-------------------------------------------------|------------------------|---------------|
|                                                                                                       |       |      |    |                      |                      | Part Number                                     | WATCONNECT Part Number |               | Part Number                                     | WATCONNECT Part Number |               |
|                                                                                                       |       |      |    |                      |                      | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C |
| <b>30 W/in² ③</b><br><b>304 SS Plug</b><br><b>1-Alloy 800</b><br><b>Element</b><br><b>(4.7 W/cm²)</b> | 240   | 1.70 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G12C5A                                    | C/F                    | C/F           | BDNF16G12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 1.70 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G13C5A                                    | C/F                    | C/F           | BDNF16G13C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 2.20 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G12C5A                                    | C/F                    | C/F           | BDNF19G12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 2.20 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G13C5A                                    | C/F                    | C/F           | BDNF19G13C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 2.80 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L12C5A                                    | C/F                    | C/F           | BDNF24L12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 2.80 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L13C5A                                    | C/F                    | C/F           | BDNF24L13C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 3.50 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R12C5A                                    | C/F                    | C/F           | BDNF29R12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 3.50 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R13C5A                                    | C/F                    | C/F           | BDNF29R13C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 4.25 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R12C5A                                    | C/F                    | C/F           | BDNF34R12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 4.25 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R13C5A                                    | C/F                    | C/F           | BDNF34R13C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 5.70 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G12C5A                                    | C/F                    | C/F           | BDNF45G12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 5.70 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G13C5A                                    | C/F                    | C/F           | BDNF45G13C7A                                    | C/F                    | C/F           |
| <b>23 W/in² ⑧</b><br><b>304 SS Plug</b><br><b>1-Alloy 800</b><br><b>Element</b><br><b>(3.6 W/cm²)</b> | 240   | 7.20 | 3  | 55 5/8 (1412.9)      | 19 (9)               | BDNF55R12C5A                                    | C/F                    | C/F           | BDNF55R12C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 1.25 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G20C5A                                    | C/F                    | C/F           | BDNF16G20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 1.65 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G20C5A                                    | C/F                    | C/F           | BDNF19G20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 2.15 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L20C5A                                    | C/F                    | C/F           | BDNF24L20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 2.15 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L19C5A                                    | C/F                    | C/F           | BDNF24L19C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 2.65 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R20C5A                                    | C/F                    | C/F           | BDNF29R20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 2.65 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R19C5A                                    | C/F                    | C/F           | BDNF29R19C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 3.20 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R20C5A                                    | C/F                    | C/F           | BDNF34R20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 3.20 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R19C5A                                    | C/F                    | C/F           | BDNF34R19C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 4.25 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G20C5A                                    | C/F                    | C/F           | BDNF45G20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 4.25 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G19C5A                                    | C/F                    | C/F           | BDNF45G19C7A                                    | C/F                    | C/F           |
|                                                                                                       | 240   | 5.40 | 3  | 55 5/8 (1412.9)      | 19 (9)               | BDNF55R20C5A                                    | C/F                    | C/F           | BDNF55R20C7A                                    | C/F                    | C/F           |
|                                                                                                       | 480   | 5.40 | 3  | 55 5/8 (1412.9)      | 19 (9)               | BDNF55R19C5A                                    | C/F                    | C/F           | BDNF55R19C7A                                    | C/F                    | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

- ③ Wired for 3-phase operation only
- ⑤ No third party recognition
- ⑧ Can be wired for 1-phase operation



# Immersion Heaters



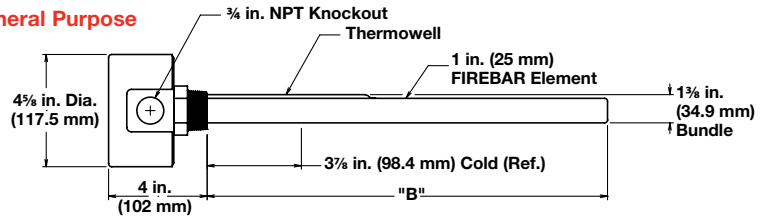
## WATROD and FIREBAR Screw Plug Immersion Heaters



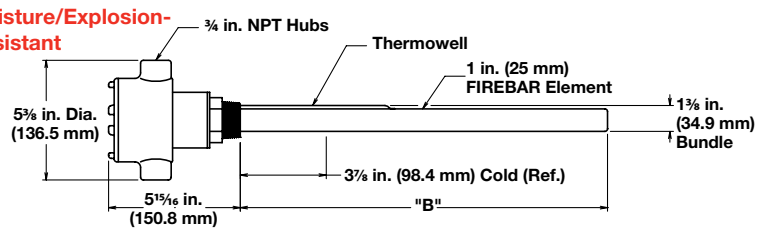
### Application: Lightweight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                     |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>30 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(4.7 W/cm<sup>2</sup>)</b> | 240   | 1.70 | 3  | 16 1/8 (409.6)       | BDNF16G12S                   | 7 (4)                | C2-50                     | C2-92         | BDNF16G12C                                 | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 1.70 | 3  | 16 1/8 (409.6)       | BDNF16G13S                   | 7 (4)                | C2-43                     | C2-35         | BDNF16G13C                                 | 10 (5)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 2.20 | 3  | 19 1/8 (485.8)       | BDNF19G12S                   | 8 (4)                | C2-50                     | C2-92         | BDNF19G12C                                 | 11 (5)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 2.20 | 3  | 19 1/8 (485.8)       | BDNF19G13S                   | 8 (4)                | C2-43                     | C2-35         | BDNF19G13C                                 | 11 (5)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 2.80 | 3  | 24 3/8 (619.1)       | BDNF24L12S                   | 9 (4)                | C2-50                     | C2-92         | BDNF24L12C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 2.80 | 3  | 24 3/8 (619.1)       | BDNF24L13S                   | 9 (4)                | C2-43                     | C2-35         | BDNF24L13C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 3.50 | 3  | 29 5/8 (752.5)       | BDNF29R12S                   | 10 (5)               | C2-50                     | C2-92         | BDNF29R12C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 3.50 | 3  | 29 5/8 (752.5)       | BDNF29R13S                   | 10 (5)               | C2-43                     | C2-35         | BDNF29R13C                                 | 13 (6)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 4.25 | 3  | 34 5/8 (879.5)       | BDNF34R12S                   | 11 (5)               | C2-50                     | C2-92         | BDNF34R12C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 4.25 | 3  | 34 5/8 (879.5)       | BDNF34R13S                   | 11 (5)               | C2-43                     | C2-35         | BDNF34R13C                                 | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 5.70 | 3  | 45 1/8 (1146.2)      | BDNF45G12S                   | 13 (6)               | C2-50                     | C2-92         | BDNF45G12C                                 | 16 (8)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 5.70 | 3  | 45 1/8 (1146.2)      | BDNF45G13S                   | 13 (6)               | C2-43                     | C2-35         | BDNF45G13C                                 | 16 (8)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 7.20 | 3  | 55 5/8 (1412.9)      | BDNF55R12S                   | 15 (7)               | C2-50                     | C2-92         | BDNF55R12C                                 | 18 (9)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 7.20 | 3  | 55 5/8 (1412.9)      | BDNF55R13S                   | 15 (7)               | C2-43                     | C2-35         | BDNF55R13C                                 | 18 (9)               | C3-116                    | C3-118        |
| <b>23 W/in<sup>2</sup> ⑧<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(3.6 W/cm<sup>2</sup>)</b> | 240   | 1.25 | 3  | 16 1/8 (409.6)       | BDNF16G20S                   | 7 (4)                | C2-50                     | C2-92         | BDNF16G20C                                 | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                     | 240   | 1.65 | 3  | 19 1/8 (485.8)       | BDNF19G20S                   | 8 (4)                | C2-50                     | C2-92         | BDNF19G20C                                 | 11 (5)               | C3-94                     | C3-93         |
|                                                                                                     | 240   | 2.15 | 3  | 24 3/8 (619.1)       | BDNF24L20S                   | 9 (4)                | C2-50                     | C2-92         | BDNF24L20C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 2.15 | 3  | 24 3/8 (619.1)       | BDNF24L19S                   | 9 (4)                | C2-43                     | C2-35         | BDNF24L19C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 2.65 | 3  | 29 5/8 (752.5)       | BDNF29R20S                   | 10 (5)               | C2-50                     | C2-92         | BDNF29R20C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 2.65 | 3  | 29 5/8 (752.5)       | BDNF29R19S                   | 10 (5)               | C2-43                     | C2-35         | BDNF29R19C                                 | 13 (6)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 3.20 | 3  | 34 5/8 (879.5)       | BDNF34R20S                   | 11 (5)               | C2-50                     | C2-92         | BDNF34R20C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 3.20 | 3  | 34 5/8 (879.5)       | BDNF34R19S                   | 11 (5)               | C2-43                     | C2-35         | BDNF34R19C                                 | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 4.25 | 3  | 45 1/8 (1146.2)      | BDNF45G20S                   | 13 (6)               | C2-50                     | C2-92         | BDNF45G20C                                 | 16 (8)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 4.25 | 3  | 45 1/8 (1146.2)      | BDNF45G19S                   | 13 (6)               | C2-43                     | C2-35         | BDNF45G19C                                 | 16 (8)               | C3-116                    | C3-118        |
|                                                                                                     | 240   | 5.40 | 3  | 55 5/8 (1412.9)      | BDNF55R20S                   | 15 (7)               | C2-50                     | C2-92         | BDNF55R20C                                 | 18 (9)               | C3-94                     | C3-93         |
|                                                                                                     | 480   | 5.40 | 3  | 55 5/8 (1412.9)      | BDNF55R19S                   | 15 (7)               | C2-43                     | C2-35         | BDNF55R19C                                 | 18 (9)               | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

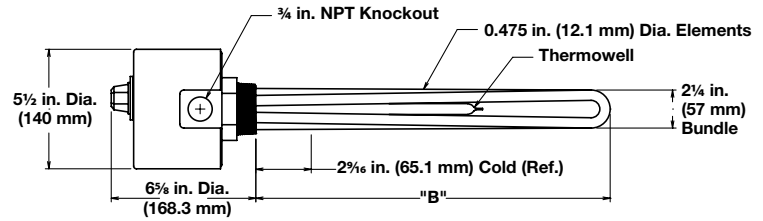


### Application: Lightweight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure



| Description                                                                                     | Volts   | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)      |                           |            | Type 5A (60 to 250°F)     |                           |            | Type 7A (100 to 550°F)    |                           |            |
|-------------------------------------------------------------------------------------------------|---------|-----|----|----------------------|----------------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|
|                                                                                                 |         |     |    |                      |                      | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            |
|                                                                                                 |         |     |    |                      |                      | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C |
| <b>23 W/in<sup>2</sup> ④<br/>Steel Plug<br/>2-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 1.0 | 1  | 9 1/2 (241)          | 5 (3)                | BGS79J6S4                 | C/F                       | C/F        | BGS79J6S5A                | C/F                       | C/F        | BGS79J6S7A                | C/F                       | C/F        |
|                                                                                                 | 240/480 | 1.0 | 1  | 9 1/2 (241)          | 5 (3)                | BGS79J7S4                 | C/F                       | C/F        | BGS79J7S5A                | C/F                       | C/F        | BGS79J7S7A                | C/F                       | C/F        |
|                                                                                                 | 120/240 | 1.5 | 1  | 13 1/2 (343)         | 6 (3)                | BGS713J6S4                | C/F                       | C/F        | BGS713J6S5A               | C/F                       | C/F        | BGS713J6S7A               | C/F                       | C/F        |
|                                                                                                 | 240/480 | 1.5 | 1  | 13 1/2 (343)         | 6 (3)                | BGS713J7S4                | C/F                       | C/F        | BGS713J7S5A               | C/F                       | C/F        | BGS713J7S7A               | C/F                       | C/F        |
|                                                                                                 | 120/240 | 2.0 | 1  | 17 1/2 (445)         | 7 (4)                | BGS717J6S4                | C/F                       | C/F        | BGS717J6S5A               | C/F                       | C/F        | BGS717J6S7A               | C/F                       | C/F        |
|                                                                                                 | 240/480 | 2.0 | 1  | 17 1/2 (445)         | 7 (4)                | BGS717J7S4                | C/F                       | C/F        | BGS717J7S5A               | C/F                       | C/F        | BGS717J7S7A               | C/F                       | C/F        |
|                                                                                                 | 120/240 | 2.5 | 1  | 20 1/2 (521)         | 8 (4)                | BGS720J6S4                | C/F                       | C/F        | BGS720J6S5A               | C/F                       | C/F        | BGS720J6S7A               | C/F                       | C/F        |
|                                                                                                 | 240/480 | 2.5 | 1  | 20 1/2 (521)         | 8 (4)                | BGS720J7S4                | C/F                       | C/F        | BGS720J7S5A               | C/F                       | C/F        | BGS720J7S7A               | C/F                       | C/F        |
|                                                                                                 | 120/240 | 3.0 | 1  | 25 (635)             | 8 (4)                | BGS725A6S4                | C/F                       | C/F        | BGS725A6S5A               | C/F                       | C/F        | BGS725A6S7A               | C/F                       | C/F        |
|                                                                                                 | 240/480 | 3.0 | 1  | 25 (635)             | 8 (4)                | BGS725A7S4                | C/F                       | C/F        | BGS725A7S5A               | C/F                       | C/F        | BGS725A7S7A               | C/F                       | C/F        |
|                                                                                                 | 120/240 | 4.0 | 1  | 32 1/2 (826)         | 9 (4)                | BGS732J6S4                | C/F                       | C/F        | BGS732J6S5A               | C/F                       | C/F        | BGS732J6S7A               | C/F                       | C/F        |
|                                                                                                 | 120/240 | 5.0 | 1  | 40 (1016)            | 10 (5)               | BGS740A6S4                | C/F                       | C/F        | BGS740A6S5A               | C/F                       | C/F        | BGS740A6S7A               | C/F                       | C/F        |
| <b>23 W/in<sup>2</sup><br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b>   | 120     | 1.5 | 1  | 9 1/2 (241)          | 6 (3)                | BHS79J1S4                 | C/F                       | C/F        | BHS79J1S5A                | C/F                       | C/F        | BHS79J1S7A                | C/F                       | C/F        |
|                                                                                                 | 240     | 1.5 | 3  | 9 1/2 (241)          | 6 (3)                | BHS79J3S4                 | C/F                       | C/F        | BHS79J3S5A                | C/F                       | C/F        | BHS79J3S7A                | C/F                       | C/F        |
|                                                                                                 | 480     | 1.5 | 3  | 9 1/2 (241)          | 6 (3)                | BHS79J13S4                | C/F                       | C/F        | BHS79J13S5A               | C/F                       | C/F        | BHS79J13S7A               | C/F                       | C/F        |
|                                                                                                 | 240     | 3.0 | 3  | 17 1/2 (445)         | 8 (4)                | BHS717J3S4                | C/F                       | C/F        | BHS717J3S5A               | C/F                       | C/F        | BHS717J3S7A               | C/F                       | C/F        |
|                                                                                                 | 480     | 3.0 | 3  | 17 1/2 (445)         | 8 (4)                | BHS717J5S4                | C/F                       | C/F        | BHS717J5S5A               | C/F                       | C/F        | BHS717J5S7A               | C/F                       | C/F        |
|                                                                                                 | 240     | 4.5 | 3  | 25 (635)             | 10 (5)               | BHS725A3S4                | C/F                       | C/F        | BHS725A3S5A               | C/F                       | C/F        | BHS725A3S7A               | C/F                       | C/F        |
|                                                                                                 | 480     | 4.5 | 3  | 25 (635)             | 10 (5)               | BHS725A5S4                | C/F                       | C/F        | BHS725A5S5A               | C/F                       | C/F        | BHS725A5S7A               | C/F                       | C/F        |
|                                                                                                 | 240     | 6.0 | 3  | 32 1/2 (826)         | 13 (6)               | BHS732J3S4                | C/F                       | C/F        | BHS732J3S5A               | C/F                       | C/F        | BHS732J3S7A               | C/F                       | C/F        |
|                                                                                                 | 480     | 6.0 | 3  | 32 1/2 (826)         | 13 (6)               | BHS732J5S4                | C/F                       | C/F        | BHS732J5S5A               | C/F                       | C/F        | BHS732J5S7A               | C/F                       | C/F        |
|                                                                                                 | 240     | 7.5 | 3  | 40 (1016)            | 14 (7)               | BHS740A3S4                | C/F                       | C/F        | BHS740A3S5A               | C/F                       | C/F        | BHS740A3S7A               | C/F                       | C/F        |
|                                                                                                 | 480     | 7.5 | 3  | 40 (1016)            | 14 (7)               | BHS740A5S4                | C/F                       | C/F        | BHS740A5S5A               | C/F                       | C/F        | BHS740A5S7A               | C/F                       | C/F        |
|                                                                                                 | 240     | 9.0 | 3  | 47 1/2 (1207)        | 14 (7)               | BHS747J3S4                | C/F                       | C/F        | BHS747J3S5A               | C/F                       | C/F        | BHS747J3S7A               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

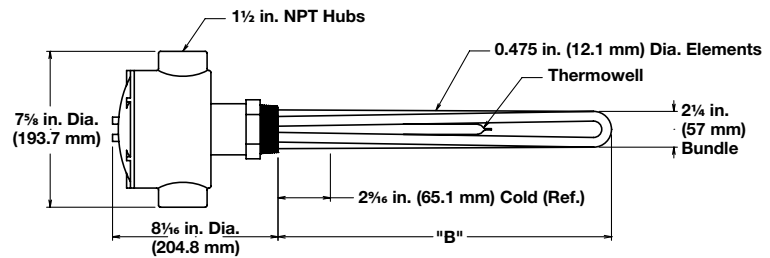
## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Lightweight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                     | Volts       | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                                |                           |               | Type 5A (60 to 250°F)                               |                           |               | Type 7A (100 to 550°F)                              |                           |               |
|-------------------------------------------------------------------------------------------------|-------------|-----|----|----------------------|----------------------|-----------------------------------------------------|---------------------------|---------------|-----------------------------------------------------|---------------------------|---------------|-----------------------------------------------------|---------------------------|---------------|
|                                                                                                 |             |     |    |                      |                      | Part<br>Number                                      | WATCONNECT<br>Part Number |               | Part<br>Number                                      | WATCONNECT<br>Part Number |               | Part<br>Number                                      | WATCONNECT<br>Part Number |               |
|                                                                                                 |             |     |    |                      |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ④<br/>Steel Plug<br/>2-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/<br>240 | 1.0 | 1  | 9 1/2 (241)          | 8 (4)                | BGS79J6C4                                           | C/F                       | C/F           | BGS79J6C5A                                          | C/F                       | C/F           | BGS79J6C7A                                          | C/F                       | C/F           |
|                                                                                                 | 240/<br>480 | 1.0 | 1  | 9 1/2 (241)          | 8 (4)                | BGS79J7C4                                           | C/F                       | C/F           | BGS79J7C5A                                          | C/F                       | C/F           | BGS79J7C7A                                          | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 1.5 | 1  | 13 1/2 (343)         | 9 (4)                | BGS713J6C4                                          | C/F                       | C/F           | BGS713J6C5A                                         | C/F                       | C/F           | BGS713J6C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240/<br>480 | 1.5 | 1  | 13 1/2 (343)         | 9 (4)                | BGS713J7C4                                          | C/F                       | C/F           | BGS713J7C5A                                         | C/F                       | C/F           | BGS713J7C7A                                         | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 2.0 | 1  | 17 1/2 (445)         | 10 (5)               | BGS717J6C4                                          | C/F                       | C/F           | BGS717J6C5A                                         | C/F                       | C/F           | BGS717J6C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240/<br>480 | 2.0 | 1  | 17 1/2 (445)         | 10 (5)               | BGS717J7C4                                          | C/F                       | C/F           | BGS717J7C5A                                         | C/F                       | C/F           | BGS717J7C7A                                         | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 2.5 | 1  | 20 1/2 (521)         | 11 (5)               | BGS720J6C4                                          | C/F                       | C/F           | BGS720J6C5A                                         | C/F                       | C/F           | BGS720J6C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240/<br>480 | 2.5 | 1  | 20 1/2 (521)         | 11 (5)               | BGS720J7C4                                          | C/F                       | C/F           | BGS720J7C5A                                         | C/F                       | C/F           | BGS720J7C7A                                         | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 3.0 | 1  | 25 (635)             | 11 (5)               | BGS725A6C4                                          | C/F                       | C/F           | BGS725A6C5A                                         | C/F                       | C/F           | BGS725A6C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240/<br>480 | 3.0 | 1  | 25 (635)             | 11 (5)               | BGS725A7C4                                          | C/F                       | C/F           | BGS725A7C5A                                         | C/F                       | C/F           | BGS725A7C7A                                         | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 4.0 | 1  | 32 1/2 (826)         | 12 (6)               | BGS732J6C4                                          | C/F                       | C/F           | BGS732J6C5A                                         | C/F                       | C/F           | BGS732J6C7A                                         | C/F                       | C/F           |
|                                                                                                 | 120/<br>240 | 5.0 | 1  | 40 (1016)            | 13 (6)               | BGS740A6C4                                          | C/F                       | C/F           | BGS740A6C5A                                         | C/F                       | C/F           | BGS740A6C7A                                         | C/F                       | C/F           |
| <b>23 W/in<sup>2</sup><br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b>   | 120         | 1.5 | 1  | 9 1/2 (241)          | 9 (4)                | BHS79J1C4                                           | C/F                       | C/F           | BHS79J1C5A                                          | C/F                       | C/F           | BHS79J1C7A                                          | C/F                       | C/F           |
|                                                                                                 | 240         | 1.5 | 3  | 9 1/2 (241)          | 9 (4)                | BHS79J3C4                                           | C/F                       | C/F           | BHS79J3C5A                                          | C/F                       | C/F           | BHS79J3C7A                                          | C/F                       | C/F           |
|                                                                                                 | 480         | 1.5 | 3  | 9 1/2 (241)          | 9 (4)                | BHS79J13C4                                          | C/F                       | C/F           | BHS79J13C5A                                         | C/F                       | C/F           | BHS79J13C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240         | 3.0 | 3  | 17 1/2 (445)         | 11 (5)               | BHS717J3C4                                          | C/F                       | C/F           | BHS717J3C5A                                         | C/F                       | C/F           | BHS717J3C7A                                         | C/F                       | C/F           |
|                                                                                                 | 480         | 3.0 | 3  | 17 1/2 (445)         | 11 (5)               | BHS717J5C4                                          | C/F                       | C/F           | BHS717J5C5A                                         | C/F                       | C/F           | BHS717J5C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240         | 4.5 | 3  | 25 (635)             | 13 (6)               | BHS725A3C4                                          | C/F                       | C/F           | BHS725A3C5A                                         | C/F                       | C/F           | BHS725A3C7A                                         | C/F                       | C/F           |
|                                                                                                 | 480         | 4.5 | 3  | 25 (635)             | 13 (6)               | BHS725A5C4                                          | C/F                       | C/F           | BHS725A5C5A                                         | C/F                       | C/F           | BHS725A5C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240         | 6.0 | 3  | 32 1/2 (826)         | 16 (8)               | BHS732J3C4                                          | C/F                       | C/F           | BHS732J3C5A                                         | C/F                       | C/F           | BHS732J3C7A                                         | C/F                       | C/F           |
|                                                                                                 | 480         | 6.0 | 3  | 32 1/2 (826)         | 16 (8)               | BHS732J5C4                                          | C/F                       | C/F           | BHS732J5C5A                                         | C/F                       | C/F           | BHS732J5C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240         | 7.5 | 3  | 40 (1016)            | 17 (8)               | BHS740A3C4                                          | C/F                       | C/F           | BHS740A3C5A                                         | C/F                       | C/F           | BHS740A3C7A                                         | C/F                       | C/F           |
|                                                                                                 | 480         | 7.5 | 3  | 40 (1016)            | 17 (8)               | BHS740A5C4                                          | C/F                       | C/F           | BHS740A5C5A                                         | C/F                       | C/F           | BHS740A5C7A                                         | C/F                       | C/F           |
|                                                                                                 | 240         | 9.0 | 3  | 47 1/2 (1207)        | 17 (8)               | BHS747J3C4                                          | C/F                       | C/F           | BHS747J3C5A                                         | C/F                       | C/F           | BHS747J3C7A                                         | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

④ Wired for higher voltage

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters

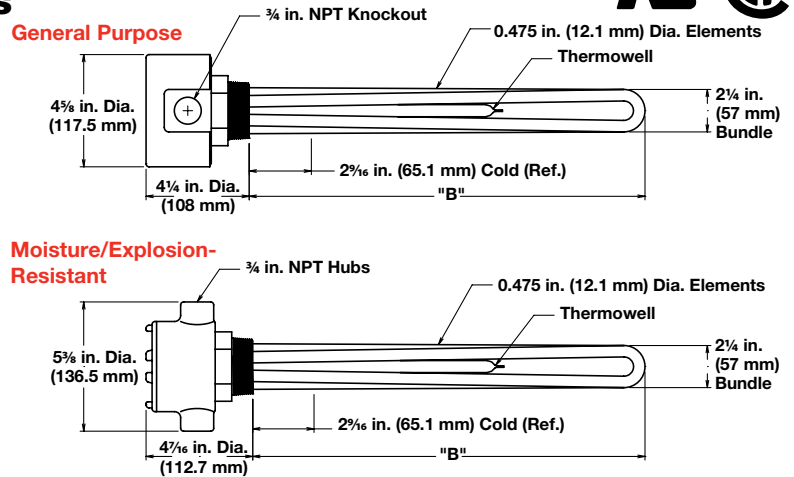


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                     | Volts   | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number |               | 240V WATCONNECT<br>Part Number |               | 480V WATCONNECT<br>Part Number |               |
|-------------------------------------------------------------------------------------------------|---------|------|----|----------------------|------------------------------|----------------------|--------------------------------|---------------|--------------------------------|---------------|--------------------------------|---------------|
|                                                                                                 |         |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C                  | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ④<br/>Steel Plug<br/>2-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b> | 120/240 | 1.0  | 1  | 9 1/2 (241)          | BGS79J6S                     | 4 (2)                | C1-15                          | C1-12         | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 1.0  | 1  | 9 1/2 (241)          | BGS79J7S                     | 4 (2)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 1.5  | 1  | 13 1/2 (343)         | BGS713J6S                    | 5 (3)                | C1-15                          | C1-12         | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 1.5  | 1  | 13 1/2 (343)         | BGS713J7S                    | 5 (3)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 2.0  | 1  | 17 1/2 (445)         | BGS717J6S                    | 6 (3)                | C1-15                          | C1-12         | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 2.0  | 1  | 17 1/2 (445)         | BGS717J7S                    | 6 (3)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 2.5  | 1  | 20 1/2 (521)         | BGS720J6S                    | 7 (4)                | C/F                            | C/F           | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 2.5  | 1  | 20 1/2 (521)         | BGS720J7S                    | 7 (4)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 3.0  | 1  | 25 (635)             | BGS725A6S                    | 7 (4)                | C/F                            | C/F           | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 3.0  | 1  | 25 (635)             | BGS725A7S                    | 7 (4)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 4.0  | 1  | 32 1/2 (826)         | BGS732J6S                    | 8 (4)                | C/F                            | C/F           | C1-17                          | C1-13         | N/A                            | N/A           |
|                                                                                                 | 240/480 | 4.0  | 1  | 32 1/2 (826)         | BGS732J7S                    | 8 (4)                | N/A                            | N/A           | C1-17                          | C1-13         | C/F                            | C/F           |
|                                                                                                 | 120/240 | 5.0  | 1  | 40 (1016)            | BGS740A6S                    | 9 (4)                | C/F                            | C/F           | C/F                            | C/F           | N/A                            | N/A           |
|                                                                                                 | 240/480 | 5.0  | 1  | 40 (1016)            | BGS740A7S                    | 9 (4)                | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
|                                                                                                 | 240/480 | 6.0  | 1  | 47 1/2 (1207)        | BGS747J7S                    | 10 (5)               | N/A                            | N/A           | C/F                            | C/F           | C/F                            | C/F           |
| <b>23 W/in<sup>2</sup><br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(3.6 W/cm<sup>2</sup>)</b>   | 120     | 1.5  | 1  | 9 1/2 (241)          | BHS79J1S                     | 5 (3)                | C1-15                          | C1-12         | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                 | 240     | 1.5  | 3  | 9 1/2 (241)          | BHS79J3S                     | 5 (3)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 1.5  | 3  | 9 1/2 (241)          | BHS79J13S                    | 5 (3)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 120     | 3.0  | 1  | 17 1/2 (445)         | BHS717J1S                    | 7 (4)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                 | 240     | 3.0  | 3  | 17 1/2 (445)         | BHS717J3S                    | 7 (4)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 3.0  | 3  | 17 1/2 (445)         | BHS717J5S                    | 7 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 120     | 4.5  | 1  | 25 (635)             | BHS725A1S                    | 9 (4)                | C/F                            | C/F           | N/A                            | N/A           | N/A                            | N/A           |
|                                                                                                 | 240     | 4.5  | 3  | 25 (635)             | BHS725A3S                    | 9 (4)                | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 4.5  | 3  | 25 (635)             | BHS725A5S                    | 9 (4)                | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 240     | 6.0  | 3  | 32 1/2 (826)         | BHS732J3S                    | 12 (6)               | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 6.0  | 3  | 32 1/2 (826)         | BHS732J5S                    | 12 (6)               | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 240     | 7.5  | 3  | 40 (1016)            | BHS740A3S                    | 13 (6)               | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 7.5  | 3  | 40 (1016)            | BHS740A5S                    | 13 (6)               | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 240     | 9.0  | 3  | 47 1/2 (1207)        | BHS747J3S                    | 13 (6)               | N/A                            | N/A           | C2-50                          | C2-92         | N/A                            | N/A           |
|                                                                                                 | 480     | 9.0  | 3  | 47 1/2 (1207)        | BHS747J5S                    | 13 (6)               | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |
|                                                                                                 | 240     | 12.5 | 3  | 64 (1626)            | BHS764A3S                    | 17 (8)               | N/A                            | N/A           | C2-236                         | C2-214        | N/A                            | N/A           |
|                                                                                                 | 480     | 12.5 | 3  | 64 (1626)            | BHS764A5S                    | 17 (8)               | N/A                            | N/A           | N/A                            | N/A           | C2-43                          | C2-35         |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

- ④ Wired for higher voltage  
⑤ No third party recognition

# Immersion Heaters

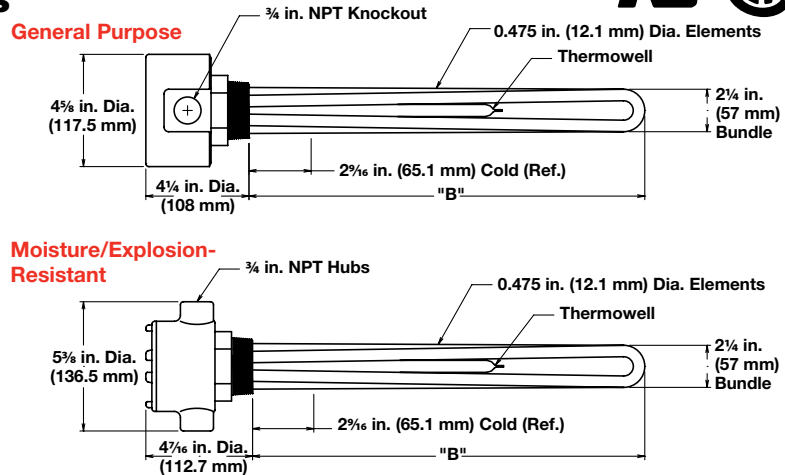


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                    | Volts   | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number                              | Ship Wt.<br>lbs (kg) | 120V WATCONNECT<br>Part Number | 240V WATCONNECT<br>Part Number | 480V WATCONNECT<br>Part Number |               |               |               |
|----------------------------------------------------------------|---------|------|----|----------------------|---------------------------------------------|----------------------|--------------------------------|--------------------------------|--------------------------------|---------------|---------------|---------------|
|                                                                |         |      |    |                      | Moisture/Explosion-<br>Resistant Enclosures |                      | Type J<br>T/C                  | Type K<br>T/C                  | Type J<br>T/C                  | Type K<br>T/C | Type J<br>T/C | Type K<br>T/C |
| 23 W/in² ④<br>Steel Plug<br>2-Steel<br>Elements<br>(3.6 W/cm²) | 120/240 | 1.0  | 1  | 9½ (241)             | BGS79J6C                                    | 7 (4)                | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 1.0  | 1  | 9½ (241)             | BGS79J7C                                    | 7 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 1.5  | 1  | 13½ (343)            | BGS713J6C                                   | 8 (4)                | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 1.5  | 1  | 13½ (343)            | BGS713J7C                                   | 8 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 2.0  | 1  | 17½ (445)            | BGS717J6C                                   | 9 (4)                | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 2.0  | 1  | 17½ (445)            | BGS717J7C                                   | 9 (4)                | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 2.5  | 1  | 20½ (521)            | BGS720J6C                                   | 10 (5)               | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 2.5  | 1  | 20½ (521)            | BGS720J7C                                   | 10 (5)               | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 3.0  | 1  | 25 (635)             | BGS725A6C                                   | 10 (5)               | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 3.0  | 1  | 25 (635)             | BGS725A7C                                   | 10 (5)               | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 4.0  | 1  | 32½ (826)            | BGS732J6C                                   | 11 (5)               | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 4.0  | 1  | 32½ (826)            | BGS732J7C                                   | 11 (5)               | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 120/240 | 5.0  | 1  | 40 (1016)            | BGS740A6C                                   | 12 (6)               | C/F                            | C/F                            | C/F                            | C/F           | N/A           | N/A           |
|                                                                | 240/480 | 5.0  | 1  | 40 (1016)            | BGS740A7C                                   | 12 (6)               | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
|                                                                | 240/480 | 6.0  | 1  | 47½ (1207)           | BGS747J7C                                   | 13 (6)               | N/A                            | N/A                            | C/F                            | C/F           | C/F           | C/F           |
| 23 W/in²<br>Steel Plug<br>3-Steel<br>Elements<br>(3.6 W/cm²)   | 120     | 1.5  | 1  | 9½ (241)             | BHS79J1C                                    | 8 (4)                | C/F                            | C/F                            | N/A                            | N/A           | N/A           | N/A           |
|                                                                | 240     | 1.5  | 3  | 9½ (241)             | BHS79J3C                                    | 8 (4)                | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 1.5  | 3  | 9½ (241)             | BHS79J13C                                   | 8 (4)                | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 120     | 3.0  | 1  | 17½ (445)            | BHS717J1C                                   | 10 (5)               | C/F                            | C/F                            | N/A                            | N/A           | N/A           | N/A           |
|                                                                | 240     | 3.0  | 3  | 17½ (445)            | BHS717J3C                                   | 10 (5)               | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 3.0  | 3  | 17½ (445)            | BHS717J5C                                   | 10 (5)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 120     | 4.5  | 1  | 25 (635)             | BHS725A1C                                   | 12 (6)               | C/F                            | C/F                            | N/A                            | N/A           | N/A           | N/A           |
|                                                                | 240     | 4.5  | 3  | 25 (635)             | BHS725A3C                                   | 12 (6)               | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 4.5  | 3  | 25 (635)             | BHS725A5C                                   | 12 (6)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 240     | 6.0  | 3  | 32½ (826)            | BHS732J3C                                   | 15 (7)               | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 6.0  | 3  | 32½ (826)            | BHS732J5C                                   | 15 (7)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 240     | 7.5  | 3  | 40 (1016)            | BHS740A3C                                   | 16 (8)               | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 7.5  | 3  | 40 (1016)            | BHS740A5C                                   | 16 (8)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 240     | 9.0  | 3  | 47½ (1207)           | BHS747J3C                                   | 16 (8)               | N/A                            | N/A                            | C3-94                          | C3-93         | N/A           | N/A           |
|                                                                | 480     | 9.0  | 3  | 47½ (1207)           | BHS747J5C                                   | 16 (8)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |
|                                                                | 240     | 12.5 | 3  | 64 (1626)            | BHS764A3C                                   | 20 (9)               | N/A                            | N/A                            | C3-114                         | C3-115        | N/A           | N/A           |
|                                                                | 480     | 12.5 | 3  | 64 (1626)            | BHS764A5C                                   | 20 (9)               | N/A                            | N/A                            | N/A                            | N/A           | C3-116        | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)  
N/A - Not available

- ④ Wired for higher voltage  
⑤ No third party recognition



# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters



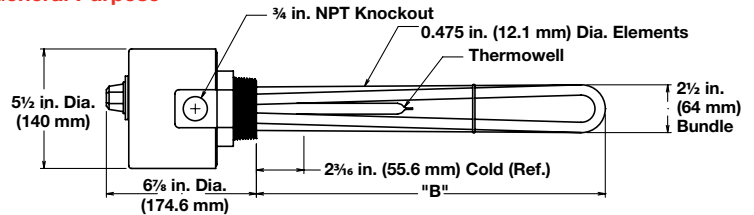
### Application: Lightweight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

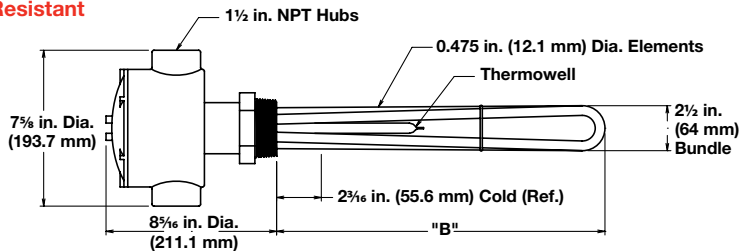
**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                            | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                      |                           |            | Type 5A (60 to 250°F)                     |                           |            | Type 7A (100 to 550°F)                    |                           |            |
|----------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|-------------------------------------------|---------------------------|------------|
|                                                                                        |       |     |    |                      |                      | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            | Part Number                               | WATCONNECT<br>Part Number |            |
|                                                                                        |       |     |    |                      |                      | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C | General Purpose Enclosure                 | Type J T/C                | Type K T/C |
| 23 W/in <sup>2</sup> ®<br>Steel Plug<br>3-Steel<br>Elements<br>(3.6 Wcm <sup>2</sup> ) | 240   | 3.0 | 3  | 17 1/4 (438)         | 10 (5)               | BLS717E3S4                                | C/F                       | C/F        | BLS717E3S5A                               | C/F                       | C/F        | BLS717E3S7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 3.0 | 3  | 17 1/4 (438)         | 10 (5)               | BLS717E5S4                                | C/F                       | C/F        | BLS717E5S5A                               | C/F                       | C/F        | BLS717E5S7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 4.5 | 3  | 24 3/4 (629)         | 13 (6)               | BLS724N3S4                                | C/F                       | C/F        | BLS724N3S5A                               | C/F                       | C/F        | BLS724N3S7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 4.5 | 3  | 24 3/4 (629)         | 13 (6)               | BLS724N5S4                                | C/F                       | C/F        | BLS724N5S5A                               | C/F                       | C/F        | BLS724N5S7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 6.0 | 3  | 32 1/4 (819)         | 15 (7)               | BLS732E3S4                                | C/F                       | C/F        | BLS732E3S5A                               | C/F                       | C/F        | BLS732E3S7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 6.0 | 3  | 32 1/4 (819)         | 15 (7)               | BLS732E5S4                                | C/F                       | C/F        | BLS732E5S5A                               | C/F                       | C/F        | BLS732E5S7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 7.5 | 3  | 39 3/4 (1010)        | 16 (8)               | BLS739N3S4                                | C/F                       | C/F        | BLS739N3S5A                               | C/F                       | C/F        | BLS739N3S7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 7.5 | 3  | 39 3/4 (1010)        | 16 (8)               | BLS739N5S4                                | C/F                       | C/F        | BLS739N5S5A                               | C/F                       | C/F        | BLS739N5S7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 9.0 | 3  | 47 1/4 (1200)        | 18 (9)               | BLS747E3S4                                | C/F                       | C/F        | BLS747E3S5A                               | C/F                       | C/F        | BLS747E3S7A                               | C/F                       | C/F        |
|                                                                                        |       |     |    |                      |                      | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C | Moisture/ Explosion-Resistant Enclosure ⑤ | Type J T/C                | Type K T/C |
| 23 W/in <sup>2</sup> ®<br>Steel Plug<br>3-Steel<br>Elements<br>(3.6 Wcm <sup>2</sup> ) | 240   | 3.0 | 3  | 17 1/4 (438)         | 13 (6)               | BLS717E3C4                                | C/F                       | C/F        | BLS717E3C5A                               | C/F                       | C/F        | BLS717E3C7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 3.0 | 3  | 17 1/4 (438)         | 13 (6)               | BLS717E5C4                                | C/F                       | C/F        | BLS717E5C5A                               | C/F                       | C/F        | BLS717E5C7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 4.5 | 3  | 24 3/4 (629)         | 16 (8)               | BLS724N3C4                                | C/F                       | C/F        | BLS724N3C5A                               | C/F                       | C/F        | BLS724N3C7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 4.5 | 3  | 24 3/4 (629)         | 16 (8)               | BLS724N5C4                                | C/F                       | C/F        | BLS724N5C5A                               | C/F                       | C/F        | BLS724N5C7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 6.0 | 3  | 32 1/4 (819)         | 18 (9)               | BLS732E3C4                                | C/F                       | C/F        | BLS732E3C5A                               | C/F                       | C/F        | BLS732E3C7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 6.0 | 3  | 32 1/4 (819)         | 18 (9)               | BLS732E5C4                                | C/F                       | C/F        | BLS732E5C5A                               | C/F                       | C/F        | BLS732E5C7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 7.5 | 3  | 39 3/4 (1010)        | 19 (9)               | BLS739N3C4                                | C/F                       | C/F        | BLS739N3C5A                               | C/F                       | C/F        | BLS739N3C7A                               | C/F                       | C/F        |
|                                                                                        | 480   | 7.5 | 3  | 39 3/4 (1010)        | 19 (9)               | BLS739N5C4                                | C/F                       | C/F        | BLS739N5C5A                               | C/F                       | C/F        | BLS739N5C7A                               | C/F                       | C/F        |
|                                                                                        | 240   | 9.0 | 3  | 47 1/4 (1200)        | 21 (10)              | BLS747E3C4                                | C/F                       | C/F        | BLS747E3C5A                               | C/F                       | C/F        | BLS747E3C7A                               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

⑤ No third party recognition

⑥ Can be rewired to produce 1/3 of original kW and watt density (3-phase only)

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



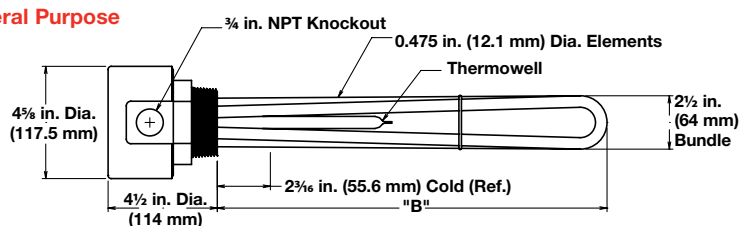
## WATROD and FIREBAR Screw Plug Immersion Heaters



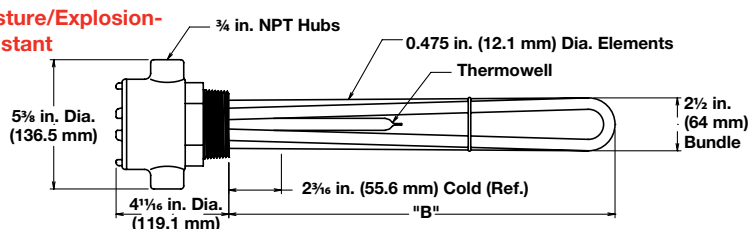
### Application: Lightweight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                    | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                            | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|---------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture /Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>23 W/in<sup>2</sup> ⑥<br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(3.6 Wcm<sup>2</sup>)</b> | 120   | 3.0  | 1  | 17 1/4 (438)         | <b>BLS717E1S</b>             | 9 (4)                | C/F                       | C/F           | <b>BLS717E1C</b>                            | 12 (6)               | C/F                       | C/F           |
|                                                                                                | 240   | 3.0  | 3  | 17 1/4 (438)         | <b>BLS717E3S</b>             | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS717E3C</b>                            | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 3.0  | 3  | 17 1/4 (438)         | <b>BLS717E5S</b>             | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS717E5C</b>                            | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 120   | 4.5  | 1  | 24 3/4 (629)         | <b>BLS724N1S</b>             | 12 (6)               | C/F                       | C/F           | <b>BLS724N1C</b>                            | 15 (7)               | C/F                       | C/F           |
|                                                                                                | 240   | 4.5  | 3  | 24 3/4 (629)         | <b>BLS724N3S</b>             | 12 (6)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS724N3C</b>                            | 15 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 4.5  | 3  | 24 3/4 (629)         | <b>BLS724N5S</b>             | 12 (6)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS724N5C</b>                            | 15 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 6.0  | 3  | 32 1/4 (819)         | <b>BLS732E3S</b>             | 14 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS732E3C</b>                            | 17 (8)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 6.0  | 3  | 32 1/4 (819)         | <b>BLS732E5S</b>             | 14 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS732E5C</b>                            | 17 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 7.5  | 3  | 39 3/4 (1010)        | <b>BLS739N3S</b>             | 15 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS739N3C</b>                            | 18 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 7.5  | 3  | 39 3/4 (1010)        | <b>BLS739N5S</b>             | 15 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS739N5C</b>                            | 18 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 9.0  | 3  | 47 1/4 (1200)        | <b>BLS747E3S</b>             | 17 (8)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS747E3C</b>                            | 20 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 9.0  | 3  | 47 1/4 (1200)        | <b>BLS747E5S</b>             | 17 (8)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS747E5C</b>                            | 20 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 12.5 | 3  | 63 3/4 (1619)        | <b>BLS763N3S</b>             | 20 (9)               | <b>C2-236</b>             | <b>C2-214</b> | <b>BLS763N3C</b>                            | 23 (11)              | <b>C3-114</b>             | <b>C3-115</b> |
|                                                                                                | 480   | 12.5 | 3  | 63 3/4 (1619)        | <b>BLS763N5S</b>             | 20 (9)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS763N5C</b>                            | 23 (11)              | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 15.0 | 3  | 76 1/4 (1937)        | <b>BLS776E3S</b>             | 23 (11)              | <b>C2-236</b>             | <b>C2-214</b> | <b>BLS776E3C</b>                            | 26 (12)              | <b>C3-114</b>             | <b>C3-115</b> |
|                                                                                                | 480   | 15.0 | 3  | 76 1/4 (1937)        | <b>BLS776E5S</b>             | 23 (11)              | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS776E5C</b>                            | 26 (12)              | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑤ No third party recognition

⑥ Can be rewired to produce 1/3 of original kW and watt density (3-phase only)



# Immersion Heaters



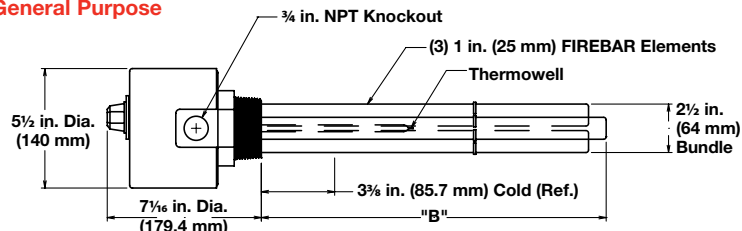
## WATROD and FIREBAR Screw Plug Immersion Heaters



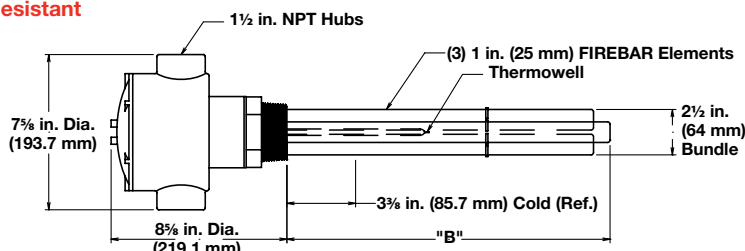
### Application: Lightweight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- General purpose enclosure
  - Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                  | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)                           |                        |            | Type 7A (100 to 550°F)                          |                        |            |
|----------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|-------------------------------------------------|------------------------|------------|-------------------------------------------------|------------------------|------------|
|                                                                                              |       |     |    |                      |                      | Part Number                                     | WATCONNECT Part Number |            | Part Number                                     | WATCONNECT Part Number |            |
|                                                                                              |       |     |    |                      |                      | General Purpose Enclosure                       | Type J T/C             | Type K T/C | General Purpose Enclosure                       | Type J T/C             | Type K T/C |
| 30 W/in <sup>2</sup> ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(4.7 W/cm <sup>2</sup> ) | 240   | 5.0 | 3  | 15 1/8 (384.2)       | 12 (6)               | BLNF15C12S5A                                    | C/F                    | C/F        | BLNF15C12S7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 5.0 | 3  | 15 1/8 (384.2)       | 12 (6)               | BLNF15C13S5A                                    | C/F                    | C/F        | BLNF15C13S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 6.5 | 3  | 18 1/8 (460.4)       | 13 (6)               | BLNF18C12S5A                                    | C/F                    | C/F        | BLNF18C12S7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 6.5 | 3  | 18 1/8 (460.4)       | 13 (6)               | BLNF18C13S5A                                    | C/F                    | C/F        | BLNF18C13S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 8.5 | 3  | 23 1/8 (587.4)       | 15 (7)               | BLNF23C12S5A                                    | C/F                    | C/F        | BLNF23C12S7A                                    | C/F                    | C/F        |
| 23 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(3.6 W/cm <sup>2</sup> ) | 240   | 3.8 | 3  | 15 1/8 (384.2)       | 12 (6)               | BLNF15C20S5A                                    | C/F                    | C/F        | BLNF15C20S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 4.9 | 3  | 18 1/8 (460.4)       | 13 (6)               | BLNF18C20S5A                                    | C/F                    | C/F        | BLNF18C20S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 6.4 | 3  | 23 1/8 (587.4)       | 15 (7)               | BLNF23C20S5A                                    | C/F                    | C/F        | BLNF23C20S7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 6.4 | 3  | 23 1/8 (587.4)       | 15 (7)               | BLNF23C19S5A                                    | C/F                    | C/F        | BLNF23C19S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 7.9 | 3  | 28 5/8 (727.1)       | 18 (9)               | BLNF28L20S5A                                    | C/F                    | C/F        | BLNF28L20S7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 9.6 | 3  | 33 5/8 (854.1)       | 19 (9)               | BLNF33L20S5A                                    | C/F                    | C/F        | BLNF33L20S7A                                    | C/F                    | C/F        |
|                                                                                              |       |     |    |                      |                      | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C |
| 30 W/in <sup>2</sup> ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(4.7 W/cm <sup>2</sup> ) | 240   | 5.0 | 3  | 15 1/8 (384.2)       | 14 (7)               | BLNF15C12C5A                                    | C/F                    | C/F        | BLNF15C12C7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 5.0 | 3  | 15 1/8 (384.2)       | 14 (7)               | BLNF15C13C5A                                    | C/F                    | C/F        | BLNF15C13C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 6.5 | 3  | 18 1/8 (460.4)       | 16 (8)               | BLNF18C12C5A                                    | C/F                    | C/F        | BLNF18C12C7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 6.5 | 3  | 18 1/8 (460.4)       | 16 (8)               | BLNF18C13C5A                                    | C/F                    | C/F        | BLNF18C13C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 8.5 | 3  | 23 1/8 (587.4)       | 18 (9)               | BLNF23C12C5A                                    | C/F                    | C/F        | BLNF23C12C7A                                    | C/F                    | C/F        |
| 23 W/in <sup>2</sup> ⑧<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(3.6 W/cm <sup>2</sup> ) | 240   | 3.8 | 3  | 15 1/8 (384.2)       | 14 (7)               | BLNF15C20C5A                                    | C/F                    | C/F        | BLNF15C20C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 4.9 | 3  | 18 1/8 (460.4)       | 16 (8)               | BLNF18C20C5A                                    | C/F                    | C/F        | BLNF18C20C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 6.4 | 3  | 23 1/8 (587.4)       | 18 (9)               | BLNF23C20C5A                                    | C/F                    | C/F        | BLNF23C20C7A                                    | C/F                    | C/F        |
|                                                                                              | 480   | 6.4 | 3  | 23 1/8 (587.4)       | 18 (9)               | BLNF23C19C5A                                    | C/F                    | C/F        | BLNF23C19C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 7.9 | 3  | 28 5/8 (727.1)       | 21 (10)              | BLNF28L20C5A                                    | C/F                    | C/F        | BLNF28L20C7A                                    | C/F                    | C/F        |
|                                                                                              | 240   | 9.6 | 3  | 33 5/8 (854.1)       | 22 (10)              | BLNF33L20C5A                                    | C/F                    | C/F        | BLNF33L20C7A                                    | C/F                    | C/F        |

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# Immersion Heaters



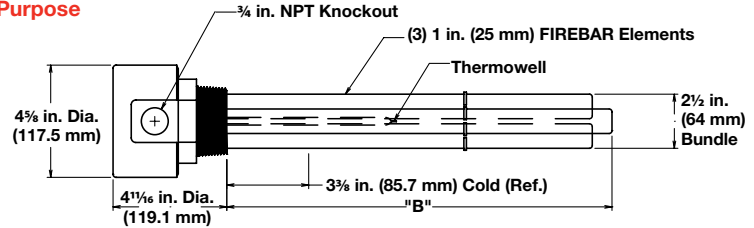
## WATROD and FIREBAR Screw Plug Immersion Heaters



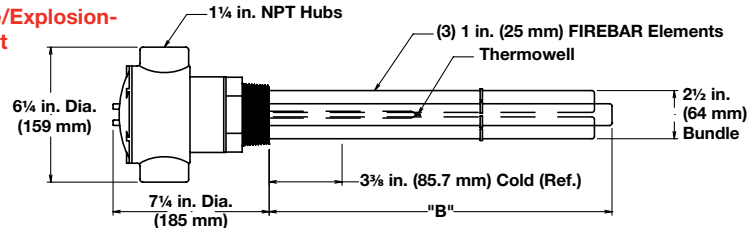
### Application: Lightweight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                            | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|--------------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                        |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>30 W/in² ③</b><br><b>304 SS Plug</b><br><b>3-Alloy 800</b><br><b>Elements</b><br><b>(4.7 W/cm²)</b> | 240   | 5.0  | 3  | 15 1/8 (384.2)       | BLNF15C12S                   | 11 (5)               | C2-50                     | C2-92         | BLNF15C12C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                        | 480   | 5.0  | 3  | 15 1/8 (384.2)       | BLNF15C13S                   | 11 (5)               | C2-43                     | C2-35         | BLNF15C13C                                 | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 6.5  | 3  | 18 1/8 (460.4)       | BLNF18C12S                   | 12 (6)               | C2-50                     | C2-92         | BLNF18C12C                                 | 15 (7)               | C3-94                     | C3-93         |
|                                                                                                        | 480   | 6.5  | 3  | 18 1/8 (460.4)       | BLNF18C13S                   | 12 (6)               | C2-43                     | C2-35         | BLNF18C13C                                 | 15 (7)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 8.5  | 3  | 23 1/8 (587.4)       | BLNF23C12S                   | 14 (7)               | C2-50                     | C2-92         | BLNF23C12C                                 | 17 (8)               | C3-94                     | C3-93         |
|                                                                                                        | 480   | 8.5  | 3  | 23 1/8 (587.4)       | BLNF23C13S                   | 14 (7)               | C2-43                     | C2-35         | BLNF23C13C                                 | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 10.5 | 3  | 28 5/8 (727.1)       | BLNF28L12S                   | 17 (8)               | C2-236                    | C2-214        | BLNF28L12C                                 | 20 (9)               | C3-114                    | C3-115        |
|                                                                                                        | 480   | 10.5 | 3  | 28 5/8 (727.1)       | BLNF28L13S                   | 17 (8)               | C2-43                     | C2-35         | BLNF28L13C                                 | 20 (9)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 12.8 | 3  | 33 5/8 (854.1)       | BLNF33L12S                   | 18 (9)               | C2-236                    | C2-214        | BLNF33L12C                                 | 21 (10)              | C3-114                    | C3-115        |
|                                                                                                        | 480   | 12.8 | 3  | 33 5/8 (854.1)       | BLNF33L13S                   | 18 (9)               | C2-43                     | C2-35         | BLNF33L13C                                 | 21 (10)              | C3-116                    | C3-118        |
|                                                                                                        | 240   | 17.0 | 3  | 44 1/8 (1120.8)      | BLNF44C12S                   | 20 (9)               | C2-236                    | C2-214        | BLNF44C12C                                 | 23 (11)              | C3-114                    | C3-115        |
|                                                                                                        | 480   | 17.0 | 3  | 44 1/8 (1120.8)      | BLNF44C13S                   | 20 (9)               | C2-43                     | C2-35         | BLNF44C13C                                 | 23 (11)              | C3-116                    | C3-118        |
|                                                                                                        | 480   | 21.5 | 3  | 54 5/8 (1387.5)      | BLNF54L13S                   | 22 (10)              | C2-225                    | C2-226        | BLNF54L13C                                 | 25 (12)              | C3-117                    | C3-119        |
| <b>23 W/in² ⑧</b><br><b>304 SS Plug</b><br><b>3-Alloy 800</b><br><b>Elements</b><br><b>(3.6 W/cm²)</b> | 240   | 3.8  | 3  | 15 1/8 (384.2)       | BLNF15C20S                   | 11 (5)               | C2-50                     | C2-92         | BLNF15C20C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                        | 240   | 4.9  | 3  | 18 1/8 (460.4)       | BLNF18C20S                   | 12 (6)               | C2-50                     | C2-92         | BLNF18C20C                                 | 15 (7)               | C3-94                     | C3-93         |
|                                                                                                        | 240   | 6.4  | 3  | 23 1/8 (587.4)       | BLNF23C20S                   | 14 (7)               | C2-50                     | C2-92         | BLNF23C20C                                 | 17 (8)               | C3-94                     | C3-93         |
|                                                                                                        | 480   | 6.4  | 3  | 23 1/8 (587.4)       | BLNF23C19S                   | 14 (7)               | C2-43                     | C2-35         | BLNF23C19C                                 | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 7.9  | 3  | 28 5/8 (727.1)       | BLNF28L20S                   | 17 (8)               | C2-50                     | C2-92         | BLNF28L20C                                 | 20 (9)               | C3-94                     | C3-93         |
|                                                                                                        | 480   | 7.9  | 3  | 28 5/8 (727.1)       | BLNF28L19S                   | 17 (8)               | C2-43                     | C2-35         | BLNF28L19C                                 | 20 (9)               | C3-116                    | C3-118        |
|                                                                                                        | 240   | 9.6  | 3  | 33 5/8 (854.1)       | BLNF33L20S                   | 18 (9)               | C2-50                     | C2-92         | BLNF33L20C                                 | 21 (10)              | C3-94                     | C3-93         |
|                                                                                                        | 480   | 9.6  | 3  | 33 5/8 (854.1)       | BLNF33L19S                   | 18 (9)               | C2-43                     | C2-35         | BLNF33L19C                                 | 21 (10)              | C3-116                    | C3-118        |
|                                                                                                        | 240   | 12.8 | 3  | 44 1/8 (1120.8)      | BLNF44C20S                   | 20 (9)               | C2-236                    | C2-214        | BLNF44C20C                                 | 23 (11)              | C3-114                    | C3-115        |
|                                                                                                        | 480   | 12.8 | 3  | 44 1/8 (1120.8)      | BLNF44C19S                   | 20 (9)               | C2-43                     | C2-35         | BLNF44C19C                                 | 23 (11)              | C3-116                    | C3-118        |
|                                                                                                        | 240   | 16.1 | 3  | 54 5/8 (1387.5)      | BLNF54L20S                   | 22 (10)              | C2-236                    | C2-214        | BLNF54L20C                                 | 25 (12)              | C3-114                    | C3-115        |
|                                                                                                        | 480   | 16.1 | 3  | 54 5/8 (1387.5)      | BLNF54L19S                   | 22 (10)              | C2-43                     | C2-35         | BLNF54L19C                                 | 25 (12)              | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

⑧ Can be wired for 1-phase operation

# Immersion Heaters

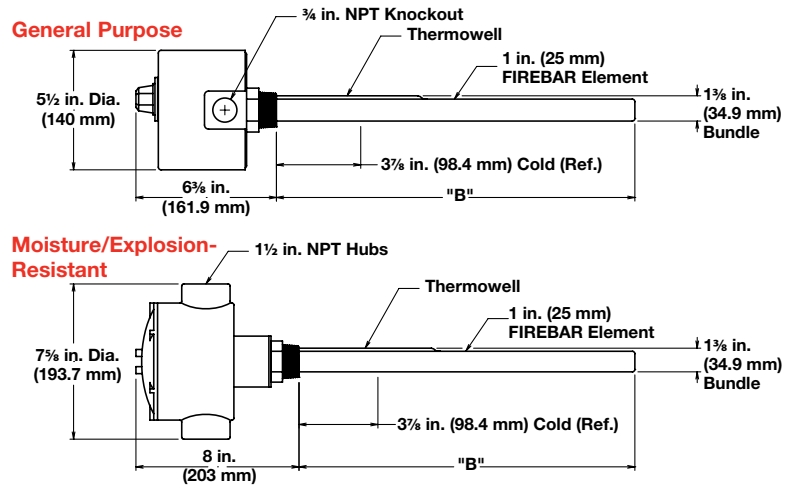


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- With thermostat (DPST), Type 5A or 7A
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                 | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60 to 250°F)                    |                        |            | Type 7A (100 to 550°F)                   |                        |            |
|---------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                             |       |      |    |                      |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                             |       |      |    |                      |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 15 W/in <sup>2</sup> ③<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(2.3 W/cm <sup>2</sup> ) | 240   | 0.67 | 3  | 13 (330)             | 7 (4)                | BDNF13A29S5A                             | C/F                    | C/F        | BDNF13A29S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 0.83 | 3  | 15 1/2 (394)         | 8 (4)                | BDNF15J29S5A                             | C/F                    | C/F        | BDNF15J29S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.00 | 3  | 18 (457)             | 9 (4)                | BDNF18A29S5A                             | C/F                    | C/F        | BDNF18A29S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.33 | 3  | 22 1/2 (572)         | 10 (5)               | BDNF22J29S5A                             | C/F                    | C/F        | BDNF22J29S7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 1.33 | 3  | 22 1/2 (572)         | 10 (5)               | BDNF22J30S5A                             | C/F                    | C/F        | BDNF22J30S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.67 | 3  | 27 1/2 (699)         | 11 (5)               | BDNF27J29S5A                             | C/F                    | C/F        | BDNF27J29S7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 1.67 | 3  | 27 1/2 (699)         | 11 (5)               | BDNF27J30S5A                             | C/F                    | C/F        | BDNF27J30S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 2.00 | 3  | 32 1/2 (826)         | 12 (6)               | BDNF32J29S5A                             | C/F                    | C/F        | BDNF32J29S7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 2.00 | 3  | 32 1/2 (826)         | 12 (6)               | BDNF32J30S5A                             | C/F                    | C/F        | BDNF32J30S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 2.67 | 3  | 42 (1067)            | 14 (7)               | BDNF42A29S5A                             | C/F                    | C/F        | BDNF42A29S7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 2.67 | 3  | 42 (1067)            | 14 (7)               | BDNF42A30S5A                             | C/F                    | C/F        | BDNF42A30S7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 3.33 | 3  | 51 1/2 (1308)        | 16 (8)               | BDNF51J29S5A                             | C/F                    | C/F        | BDNF51J29S7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 3.33 | 3  | 51 1/2 (1308)        | 16 (8)               | BDNF51J30S5A                             | C/F                    | C/F        | BDNF51J30S7A                             | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
| 15 W/in <sup>2</sup> ③<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(2.3 W/cm <sup>2</sup> ) | 240   | 0.67 | 3  | 13 (330)             | 10 (5)               | BDNF13A29C5A                             | C/F                    | C/F        | BDNF13A29C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 0.83 | 3  | 15 1/2 (394)         | 11 (5)               | BDNF15J29C5A                             | C/F                    | C/F        | BDNF15J29C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.00 | 3  | 18 (457)             | 12 (6)               | BDNF18A29C5A                             | C/F                    | C/F        | BDNF18A29C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.33 | 3  | 22 1/2 (572)         | 13 (6)               | BDNF22J29C5A                             | C/F                    | C/F        | BDNF22J29C7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 1.33 | 3  | 22 1/2 (572)         | 13 (6)               | BDNF22J30C5A                             | C/F                    | C/F        | BDNF22J30C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 1.67 | 3  | 27 1/2 (699)         | 14 (7)               | BDNF27J29C5A                             | C/F                    | C/F        | BDNF27J29C7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 1.67 | 3  | 27 1/2 (699)         | 14 (7)               | BDNF27J30C5A                             | C/F                    | C/F        | BDNF27J30C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 2.00 | 3  | 32 1/2 (826)         | 15 (7)               | BDNF32J29C5A                             | C/F                    | C/F        | BDNF32J29C7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 2.00 | 3  | 32 1/2 (826)         | 15 (7)               | BDNF32J30C5A                             | C/F                    | C/F        | BDNF32J30C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 2.67 | 3  | 42 (1067)            | 17 (8)               | BDNF42A29C5A                             | C/F                    | C/F        | BDNF42A29C7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 2.67 | 3  | 42 (1067)            | 17 (8)               | BDNF42A30C5A                             | C/F                    | C/F        | BDNF42A30C7A                             | C/F                    | C/F        |
|                                                                                             | 240   | 3.33 | 3  | 51 1/2 (1308)        | 19 (9)               | BDNF51J29C5A                             | C/F                    | C/F        | BDNF51J29C7A                             | C/F                    | C/F        |
|                                                                                             | 480   | 3.33 | 3  | 51 1/2 (1308)        | 19 (9)               | BDNF51J30C5A                             | C/F                    | C/F        | BDNF51J30C7A                             | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

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# Immersion Heaters



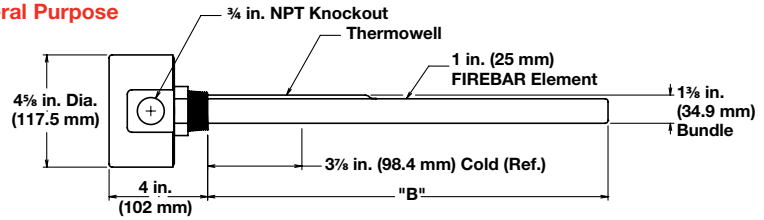
## WATROD and FIREBAR Screw Plug Immersion Heaters



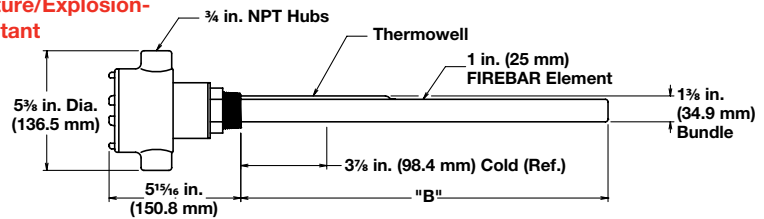
### Application: Medium Weight Oils and Heat Transfer Oils

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                     |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>15 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>1-Alloy 800<br/>Element<br/>(2.3 W/cm<sup>2</sup>)</b> | 240   | 0.67 | 3  | 13 (330)             | <b>BDNF13A29S</b>            | 6 (3)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF13A29C</b>                          | 9 (4)                | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 240   | 0.83 | 3  | 15 1/2 (394)         | <b>BDNF15J29S</b>            | 7 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF15J29C</b>                          | 10 (5)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 240   | 1.00 | 3  | 18 (457)             | <b>BDNF18A29S</b>            | 8 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF18A29C</b>                          | 11 (5)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 240   | 1.33 | 3  | 22 1/2 (572)         | <b>BDNF22J29S</b>            | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF22J29C</b>                          | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 1.33 | 3  | 22 1/2 (572)         | <b>BDNF22J30S</b>            | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BDNF22J30C</b>                          | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 1.67 | 3  | 27 1/2 (699)         | <b>BDNF27J29S</b>            | 10 (5)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF27J29C</b>                          | 13 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 1.67 | 3  | 27 1/2 (699)         | <b>BDNF27J30S</b>            | 10 (5)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BDNF27J30C</b>                          | 13 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 2.00 | 3  | 32 1/2 (826)         | <b>BDNF32J29S</b>            | 11 (5)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF32J29C</b>                          | 14 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 2.00 | 3  | 32 1/2 (826)         | <b>BDNF32J30S</b>            | 11 (5)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BDNF32J30C</b>                          | 14 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 2.67 | 3  | 42 (1067)            | <b>BDNF42A29S</b>            | 13 (6)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF42A29C</b>                          | 16 (8)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 2.67 | 3  | 42 (1067)            | <b>BDNF42A30S</b>            | 13 (6)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BDNF42A30C</b>                          | 16 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 3.33 | 3  | 51 1/2 (1308)        | <b>BDNF51J29S</b>            | 15 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BDNF51J29C</b>                          | 18 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 3.33 | 3  | 51 1/2 (1308)        | <b>BDNF51J30S</b>            | 15 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BDNF51J30C</b>                          | 18 (9)               | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

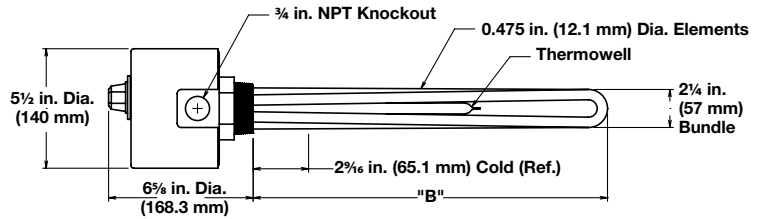


### Application: Medium Weight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.

- General purpose enclosure



| Description                                                                                          | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                  | Ship Wt.<br>lbs (kg) | Type 4 (30-110°F)         |                           |            | Type 5A (60 to 250°F)     |                           |            | Type 7A (100 to 550°F)    |                           |            |
|------------------------------------------------------------------------------------------------------|-------|-----|----|---------------------------------------|----------------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|
|                                                                                                      |       |     |    |                                       |                      | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            |
|                                                                                                      |       |     |    |                                       |                      | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C |
| <b>16 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)   | 6 (3)                | BHN79N12S4                | C/F                       | C/F        | BHN79N12S5A               | C/F                       | C/F        | BHN79N12S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 1.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)   | 6 (3)                | BHN79N13S4                | C/F                       | C/F        | BHN79N13S5A               | C/F                       | C/F        | BHN79N13S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | 7 (4)                | BHN713E12S4               | C/F                       | C/F        | BHN713E12S5A              | C/F                       | C/F        | BHN713E12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | 7 (4)                | BHN713E13S4               | C/F                       | C/F        | BHN713E13S5A              | C/F                       | C/F        | BHN713E13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 2.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 8 (4)                | BHN717N12S4               | C/F                       | C/F        | BHN717N12S5A              | C/F                       | C/F        | BHN717N12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 2.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | 8 (4)                | BHN717N13S4               | C/F                       | C/F        | BHN717N13S5A              | C/F                       | C/F        | BHN717N13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 2.5 | 3  | 20 <sup>1</sup> / <sub>4</sub> (514)  | 9 (4)                | BHN720E12S4               | C/F                       | C/F        | BHN720E12S5A              | C/F                       | C/F        | BHN720E12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 2.5 | 3  | 20 <sup>1</sup> / <sub>4</sub> (514)  | 9 (4)                | BHN720E13S4               | C/F                       | C/F        | BHN720E13S5A              | C/F                       | C/F        | BHN720E13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 3.0 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 10 (5)               | BHN725E12S4               | C/F                       | C/F        | BHN725E12S5A              | C/F                       | C/F        | BHN725E12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 3.0 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | 10 (5)               | BHN725E13S4               | C/F                       | C/F        | BHN725E13S5A              | C/F                       | C/F        | BHN725E13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 4.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 10 (5)               | BHN732N12S4               | C/F                       | C/F        | BHN732N12S5A              | C/F                       | C/F        | BHN732N12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 4.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | 10 (5)               | BHN732N13S4               | C/F                       | C/F        | BHN732N13S5A              | C/F                       | C/F        | BHN732N13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 5.0 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | 11 (5)               | BHN740E12S4               | C/F                       | C/F        | BHN740E12S5A              | C/F                       | C/F        | BHN740E12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 5.0 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | 11 (5)               | BHN740E13S4               | C/F                       | C/F        | BHN740E13S5A              | C/F                       | C/F        | BHN740E13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 6.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | 12 (6)               | BHN747N12S4               | C/F                       | C/F        | BHN747N12S5A              | C/F                       | C/F        | BHN747N12S7A              | C/F                       | C/F        |
|                                                                                                      | 480   | 6.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | 12 (6)               | BHN747N13S4               | C/F                       | C/F        | BHN747N13S5A              | C/F                       | C/F        | BHN747N13S7A              | C/F                       | C/F        |
| <b>15 W/in<sup>2</sup><br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(2.3 W/cm<sup>2</sup>)</b>        | 240   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | 7 (4)                | BHSS13E3S4                | C/F                       | C/F        | BHSS13E3S5A               | C/F                       | C/F        | BHSS13E3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | 7 (4)                | BHSS13E13S4               | C/F                       | C/F        | BHSS13E13S5A              | C/F                       | C/F        | BHSS13E13S7A              | C/F                       | C/F        |
|                                                                                                      | 240   | 2.0 | 3  | 17 <sup>1</sup> / <sub>2</sub> (445)  | 8 (4)                | BHSS17J3S4                | C/F                       | C/F        | BHSS17J3S5A               | C/F                       | C/F        | BHSS17J3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 2.0 | 3  | 17 <sup>1</sup> / <sub>2</sub> (445)  | 8 (4)                | BHSS17J5S4                | C/F                       | C/F        | BHSS17J5S5A               | C/F                       | C/F        | BHSS17J5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 2.5 | 3  | 20 <sup>1</sup> / <sub>2</sub> (521)  | 9 (4)                | BHSS20J3S4                | C/F                       | C/F        | BHSS20J3S5A               | C/F                       | C/F        | BHSS20J3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 2.5 | 3  | 20 <sup>1</sup> / <sub>2</sub> (521)  | 9 (4)                | BHSS20J5S4                | C/F                       | C/F        | BHSS20J5S5A               | C/F                       | C/F        | BHSS20J5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 3.0 | 3  | 25 (635)                              | 10 (5)               | BHSS25A3S4                | C/F                       | C/F        | BHSS25A3S5A               | C/F                       | C/F        | BHSS25A3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 3.0 | 3  | 25 (635)                              | 10 (5)               | BHSS25A5S4                | C/F                       | C/F        | BHSS25A5S5A               | C/F                       | C/F        | BHSS25A5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 4.0 | 3  | 32 <sup>1</sup> / <sub>2</sub> (826)  | 13 (6)               | BHSS32J3S4                | C/F                       | C/F        | BHSS32J3S5A               | C/F                       | C/F        | BHSS32J3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 4.0 | 3  | 32 <sup>1</sup> / <sub>2</sub> (826)  | 13 (6)               | BHSS32J5S4                | C/F                       | C/F        | BHSS32J5S5A               | C/F                       | C/F        | BHSS32J5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 5.0 | 3  | 40 (1016)                             | 14 (7)               | BHSS40A3S4                | C/F                       | C/F        | BHSS40A3S5A               | C/F                       | C/F        | BHSS40A3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 5.0 | 3  | 40 (1016)                             | 14 (7)               | BHSS40A5S4                | C/F                       | C/F        | BHSS40A5S5A               | C/F                       | C/F        | BHSS40A5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 6.0 | 3  | 47 <sup>1</sup> / <sub>2</sub> (1207) | 14 (7)               | BHSS47J3S4                | C/F                       | C/F        | BHSS47J3S5A               | C/F                       | C/F        | BHSS47J3S7A               | C/F                       | C/F        |
|                                                                                                      | 480   | 6.0 | 3  | 47 <sup>1</sup> / <sub>2</sub> (1207) | 14 (7)               | BHSS47J5S4                | C/F                       | C/F        | BHSS47J5S5A               | C/F                       | C/F        | BHSS47J5S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 7.5 | 3  | 58 <sup>1</sup> / <sub>2</sub> (1486) | 17 (8)               | BHSS58J3S4                | C/F                       | C/F        | BHSS58J3S5A               | C/F                       | C/F        | BHSS58J3S7A               | C/F                       | C/F        |
|                                                                                                      | 240   | 9.0 | 3  | 69 <sup>3</sup> / <sub>4</sub> (1772) | 21 (10)              | BHSS69N3S4                | C/F                       | C/F        | BHSS69N3S5A               | C/F                       | C/F        | BHSS69N3S7A               | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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- ③ Wired for 3-phase operation only

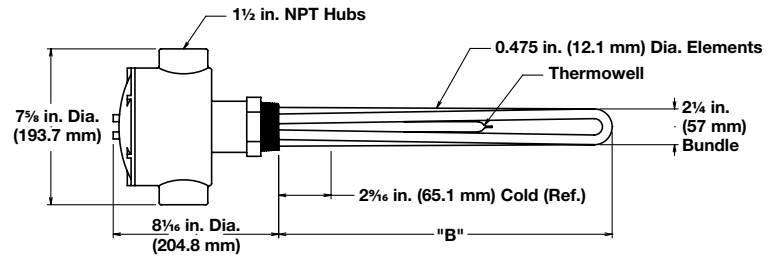


## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Medium Weight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A

**Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.



- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)

| Description                                                                    | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30 to 110°F)                                |                        |               | Type 5A (60 to 250°F)                               |                        |               | Type 7A (100 to 550°F)                              |                        |               |
|--------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|-----------------------------------------------------|------------------------|---------------|-----------------------------------------------------|------------------------|---------------|-----------------------------------------------------|------------------------|---------------|
|                                                                                |       |     |    |                      |                      | Part Number                                         | WATCONNECT Part Number |               | Part Number                                         | WATCONNECT Part Number |               | Part Number                                         | WATCONNECT Part Number |               |
|                                                                                |       |     |    |                      |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C |
| <b>16 W/in² ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(2.3 W/cm²)</b> | 240   | 1.0 | 3  | 9 3/4 (248)          | 9 (4)                | BHN79N12C4                                          | C/F                    | C/F           | BHN79N12C5A                                         | C/F                    | C/F           | BHN79N12C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 1.0 | 3  | 9 3/4 (248)          | 9 (4)                | BHN79N13C4                                          | C/F                    | C/F           | BHN79N13C5A                                         | C/F                    | C/F           | BHN79N13C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 1.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHN713E12C4                                         | C/F                    | C/F           | BHN713E12C5A                                        | C/F                    | C/F           | BHN713E12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 1.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHN713E13C4                                         | C/F                    | C/F           | BHN713E13C5A                                        | C/F                    | C/F           | BHN713E13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 2.0 | 3  | 17 3/4 (451)         | 11 (5)               | BHN717N12C4                                         | C/F                    | C/F           | BHN717N12C5A                                        | C/F                    | C/F           | BHN717N12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 2.0 | 3  | 17 3/4 (451)         | 11 (5)               | BHN717N13C4                                         | C/F                    | C/F           | BHN717N13C5A                                        | C/F                    | C/F           | BHN717N13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 2.5 | 3  | 20 1/4 (514)         | 12 (6)               | BHN720E12C4                                         | C/F                    | C/F           | BHN720E12C5A                                        | C/F                    | C/F           | BHN720E12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 2.5 | 3  | 20 1/4 (514)         | 12 (6)               | BHN720E13C4                                         | C/F                    | C/F           | BHN720E13C5A                                        | C/F                    | C/F           | BHN720E13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 3.0 | 3  | 25 1/4 (641)         | 13 (6)               | BHN725E12C4                                         | C/F                    | C/F           | BHN725E12C5A                                        | C/F                    | C/F           | BHN725E12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 3.0 | 3  | 25 1/4 (641)         | 13 (6)               | BHN725E13C4                                         | C/F                    | C/F           | BHN725E13C5A                                        | C/F                    | C/F           | BHN725E13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 4.0 | 3  | 32 3/4 (832)         | 13 (6)               | BHN732N12C4                                         | C/F                    | C/F           | BHN732N12C5A                                        | C/F                    | C/F           | BHN732N12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 4.0 | 3  | 32 3/4 (832)         | 13 (6)               | BHN732N13C4                                         | C/F                    | C/F           | BHN732N13C5A                                        | C/F                    | C/F           | BHN732N13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 5.0 | 3  | 40 1/4 (1022)        | 14 (7)               | BHN740E12C4                                         | C/F                    | C/F           | BHN740E12C5A                                        | C/F                    | C/F           | BHN740E12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 5.0 | 3  | 40 1/4 (1022)        | 14 (7)               | BHN740E13C4                                         | C/F                    | C/F           | BHN740E13C5A                                        | C/F                    | C/F           | BHN740E13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 6.0 | 3  | 47 3/4 (1213)        | 15 (7)               | BHN747N12C4                                         | C/F                    | C/F           | BHN747N12C5A                                        | C/F                    | C/F           | BHN747N12C7A                                        | C/F                    | C/F           |
|                                                                                | 480   | 6.0 | 3  | 47 3/4 (1213)        | 15 (7)               | BHN747N13C4                                         | C/F                    | C/F           | BHN747N13C5A                                        | C/F                    | C/F           | BHN747N13C7A                                        | C/F                    | C/F           |
| <b>15 W/in²<br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(2.3 W/cm²)</b>        | 240   | 1.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHSS13E3C4                                          | C/F                    | C/F           | BHSS13E3C5A                                         | C/F                    | C/F           | BHSS13E3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 1.5 | 3  | 13 1/4 (337)         | 10 (5)               | BHSS13E13C4                                         | C/F                    | C/F           | BHSS13E13C5A                                        | C/F                    | C/F           | BHSS13E13C7A                                        | C/F                    | C/F           |
|                                                                                | 240   | 2.0 | 3  | 17 1/2 (445)         | 11 (5)               | BHSS17J3C4                                          | C/F                    | C/F           | BHSS17J3C5A                                         | C/F                    | C/F           | BHSS17J3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 2.0 | 3  | 17 1/2 (445)         | 11 (5)               | BHSS17J5C4                                          | C/F                    | C/F           | BHSS17J5C5A                                         | C/F                    | C/F           | BHSS17J5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 2.5 | 3  | 20 1/2 (521)         | 12 (6)               | BHSS20J3C4                                          | C/F                    | C/F           | BHSS20J3C5A                                         | C/F                    | C/F           | BHSS20J3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 2.5 | 3  | 20 1/2 (521)         | 12 (6)               | BHSS20J5C4                                          | C/F                    | C/F           | BHSS20J5C5A                                         | C/F                    | C/F           | BHSS20J5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 3.0 | 3  | 25 (635)             | 13 (6)               | BHSS25A3C4                                          | C/F                    | C/F           | BHSS25A3C5A                                         | C/F                    | C/F           | BHSS25A3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 3.0 | 3  | 25 (635)             | 13 (6)               | BHSS25A5C4                                          | C/F                    | C/F           | BHSS25A5C5A                                         | C/F                    | C/F           | BHSS25A5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 4.0 | 3  | 32 1/2 (826)         | 16 (8)               | BHSS32J3C4                                          | C/F                    | C/F           | BHSS32J3C5A                                         | C/F                    | C/F           | BHSS32J3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 4.0 | 3  | 32 1/2 (826)         | 16 (8)               | BHSS32J5C4                                          | C/F                    | C/F           | BHSS32J5C5A                                         | C/F                    | C/F           | BHSS32J5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 5.0 | 3  | 40 (1016)            | 17 (8)               | BHSS40A3C4                                          | C/F                    | C/F           | BHSS40A3C5A                                         | C/F                    | C/F           | BHSS40A3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 5.0 | 3  | 40 (1016)            | 17 (8)               | BHSS40A5C4                                          | C/F                    | C/F           | BHSS40A5C5A                                         | C/F                    | C/F           | BHSS40A5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 6.0 | 3  | 47 1/2 (1207)        | 17 (8)               | BHSS47J3C4                                          | C/F                    | C/F           | BHSS47J3C5A                                         | C/F                    | C/F           | BHSS47J3C7A                                         | C/F                    | C/F           |
|                                                                                | 480   | 6.0 | 3  | 47 1/2 (1207)        | 17 (8)               | BHSS47J5C4                                          | C/F                    | C/F           | BHSS47J5C5A                                         | C/F                    | C/F           | BHSS47J5C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 7.5 | 3  | 58 1/2 (1486)        | 20 (9)               | BHSS58J3C4                                          | C/F                    | C/F           | BHSS58J3C5A                                         | C/F                    | C/F           | BHSS58J3C7A                                         | C/F                    | C/F           |
|                                                                                | 240   | 9.0 | 3  | 69 3/4 (1772)        | 24 (11)              | BHSS69N3C4                                          | C/F                    | C/F           | BHSS69N3C5A                                         | C/F                    | C/F           | BHSS69N3C7A                                         | C/F                    | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

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# Immersion Heaters



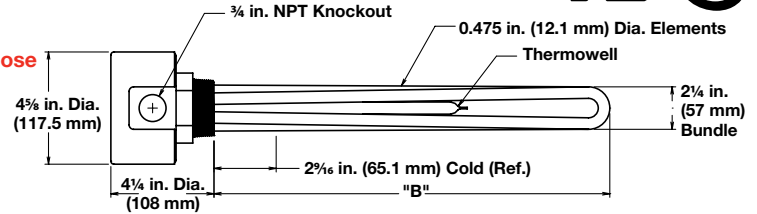
## WATROD and FIREBAR Screw Plug Immersion Heaters



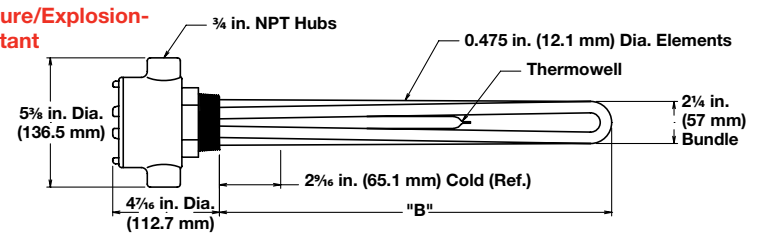
### Application: Medium Weight Oils and Heat Transfer Oils

- 2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                  | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------|-----|----|---------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |       |     |    |                                       | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>16 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)   | BHN79N12S                    | 5 (3)                | C2-50                     | C2-92         | BHN79N12C                                  | 8 (4)                | C3-94                     | C3-93         |
|                                                                                                      | 480   | 1.0 | 3  | 9 <sup>3</sup> / <sub>4</sub> (248)   | BHN79N13S                    | 5 (3)                | C2-43                     | C2-35         | BHN79N13C                                  | 8 (4)                | C3-116                    | C3-118        |
|                                                                                                      | 240   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | BHN713E12S                   | 6 (3)                | C2-50                     | C2-92         | BHN713E12C                                 | 9 (4)                | C3-94                     | C3-93         |
|                                                                                                      | 480   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | BHN713E13S                   | 6 (3)                | C2-43                     | C2-35         | BHN713E13C                                 | 9 (4)                | C3-116                    | C3-118        |
|                                                                                                      | 240   | 2.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | BHN717N12S                   | 7 (4)                | C2-50                     | C2-92         | BHN717N12C                                 | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 2.0 | 3  | 17 <sup>3</sup> / <sub>4</sub> (451)  | BHN717N13S                   | 7 (4)                | C2-43                     | C2-35         | BHN717N13C                                 | 10 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 2.5 | 3  | 20 <sup>1</sup> / <sub>4</sub> (514)  | BHN720E12S                   | 8 (4)                | C2-50                     | C2-92         | BHN720E12C                                 | 11 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 2.5 | 3  | 20 <sup>1</sup> / <sub>4</sub> (514)  | BHN720E13S                   | 8 (4)                | C2-43                     | C2-35         | BHN720E13C                                 | 11 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 3.0 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | BHN725E12S                   | 9 (4)                | C2-50                     | C2-92         | BHN725E12C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 3.0 | 3  | 25 <sup>1</sup> / <sub>4</sub> (641)  | BHN725E13S                   | 9 (4)                | C2-43                     | C2-35         | BHN725E13C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 4.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | BHN732N12S                   | 9 (4)                | C2-50                     | C2-92         | BHN732N12C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 4.0 | 3  | 32 <sup>3</sup> / <sub>4</sub> (832)  | BHN732N13S                   | 9 (4)                | C2-43                     | C2-35         | BHN732N13C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 5.0 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | BHN740E12S                   | 10 (5)               | C2-50                     | C2-92         | BHN740E12C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 5.0 | 3  | 40 <sup>1</sup> / <sub>4</sub> (1022) | BHN740E13S                   | 10 (5)               | C2-43                     | C2-35         | BHN740E13C                                 | 13 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 6.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | BHN747N12S                   | 11 (5)               | C2-50                     | C2-92         | BHN747N12C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 6.0 | 3  | 47 <sup>3</sup> / <sub>4</sub> (1213) | BHN747N13S                   | 11 (5)               | C2-43                     | C2-35         | BHN747N13C                                 | 14 (7)               | C3-116                    | C3-118        |
| <b>15 W/in<sup>2</sup><br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(2.3 W/cm<sup>2</sup>)</b>        | 240   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | BHSS13E3S                    | 6 (3)                | C2-50                     | C2-92         | BHSS13E3C                                  | 9 (4)                | C3-94                     | C3-93         |
|                                                                                                      | 480   | 1.5 | 3  | 13 <sup>1</sup> / <sub>4</sub> (337)  | BHSS13E13S                   | 6 (3)                | C2-43                     | C2-35         | BHSS13E13C                                 | 9 (4)                | C3-116                    | C3-118        |
|                                                                                                      | 240   | 2.0 | 3  | 17 <sup>1</sup> / <sub>2</sub> (445)  | BHSS17J3S                    | 7 (4)                | C2-50                     | C2-92         | BHSS17J3C                                  | 10 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 2.0 | 3  | 17 <sup>1</sup> / <sub>2</sub> (445)  | BHSS17J5S                    | 7 (4)                | C2-43                     | C2-35         | BHSS17J5C                                  | 10 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 2.5 | 3  | 20 <sup>1</sup> / <sub>2</sub> (521)  | BHSS20J3S                    | 8 (4)                | C2-50                     | C2-92         | BHSS20J3C                                  | 11 (5)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 2.5 | 3  | 20 <sup>1</sup> / <sub>2</sub> (521)  | BHSS20J5S                    | 8 (4)                | C2-43                     | C2-35         | BHSS20J5C                                  | 11 (5)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 3.0 | 3  | 25 (635)                              | BHSS25A3S                    | 9 (4)                | C2-50                     | C2-92         | BHSS25A3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 3.0 | 3  | 25 (635)                              | BHSS25A5S                    | 9 (4)                | C2-43                     | C2-35         | BHSS25A5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 4.0 | 3  | 32 <sup>1</sup> / <sub>2</sub> (826)  | BHSS32J3S                    | 9 (4)                | C2-50                     | C2-92         | BHSS32J3C                                  | 12 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 4.0 | 3  | 32 <sup>1</sup> / <sub>2</sub> (826)  | BHSS32J5S                    | 9 (4)                | C2-43                     | C2-35         | BHSS32J5C                                  | 12 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 5.0 | 3  | 40 (1016)                             | BHSS40A3S                    | 10 (5)               | C2-50                     | C2-92         | BHSS40A3C                                  | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 5.0 | 3  | 40 (1016)                             | BHSS40A5S                    | 10 (5)               | C2-43                     | C2-35         | BHSS40A5C                                  | 13 (6)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 6.0 | 3  | 47 <sup>1</sup> / <sub>2</sub> (1207) | BHSS47J3S                    | 11 (5)               | C2-50                     | C2-92         | BHSS47J3C                                  | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 6.0 | 3  | 47 <sup>1</sup> / <sub>2</sub> (1207) | BHSS47J5S                    | 11 (5)               | C2-43                     | C2-35         | BHSS47J5C                                  | 14 (7)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 7.5 | 3  | 58 <sup>1</sup> / <sub>2</sub> (1486) | BHSS58J3S                    | 14 (7)               | C2-50                     | C2-92         | BHSS58J3C                                  | 17 (8)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 7.5 | 3  | 58 <sup>1</sup> / <sub>2</sub> (1486) | BHSS58J5S                    | 14 (7)               | C2-43                     | C2-35         | BHSS58J5C                                  | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 9.0 | 3  | 69 <sup>3</sup> / <sub>4</sub> (1772) | BHSS69N3S                    | 16 (8)               | C2-50                     | C2-92         | BHSS69N3C                                  | 19 (9)               | C3-94                     | C3-93         |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only    ⑤ No third party recognition



# Immersion Heaters

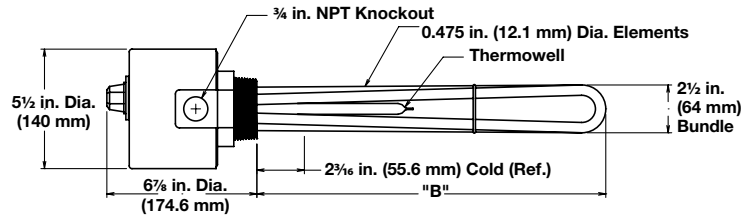


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A
- General purpose enclosure



| Description                                                                                      | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30-110°F)         |                           |            | Type 5A (60-250°F)        |                           |            | Type 7A (100-550°F)       |                           |            |
|--------------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|---------------------------|---------------------------|------------|
|                                                                                                  |       |     |    |                      |                      | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            | Part Number               | WATCONNECT<br>Part Number |            |
|                                                                                                  |       |     |    |                      |                      | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C | General Purpose Enclosure | Type J T/C                | Type K T/C |
| <b>16 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800 Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 9 3/8 (238.1)        | 7 (4)                | BLN79G12S4                | C/F                       | C/F        | BLN79G12S5A               | C/F                       | C/F        | BLN79G12S7A               | C/F                       | C/F        |
|                                                                                                  | 480   | 1.0 | 3  | 9 3/8 (238.1)        | 7 (4)                | BLN79G13S4                | C/F                       | C/F        | BLN79G13S5A               | C/F                       | C/F        | BLN79G13S7A               | C/F                       | C/F        |
|                                                                                                  | 240   | 1.5 | 3  | 12 7/8 (327.0)       | 8 (4)                | BLN712R12S4               | C/F                       | C/F        | BLN712R12S5A              | C/F                       | C/F        | BLN712R12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 1.5 | 3  | 12 7/8 (327.0)       | 8 (4)                | BLN712R13S4               | C/F                       | C/F        | BLN712R13S5A              | C/F                       | C/F        | BLN712R13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 2.0 | 3  | 17 3/8 (441.3)       | 10 (5)               | BLN717G12S4               | C/F                       | C/F        | BLN717G12S5A              | C/F                       | C/F        | BLN717G12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 2.0 | 3  | 17 3/8 (441.3)       | 10 (5)               | BLN717G13S4               | C/F                       | C/F        | BLN717G13S5A              | C/F                       | C/F        | BLN717G13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 2.5 | 3  | 19 7/8 (504.8)       | 12 (6)               | BLN719R12S4               | C/F                       | C/F        | BLN719R12S5A              | C/F                       | C/F        | BLN719R12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 2.5 | 3  | 19 7/8 (504.8)       | 12 (6)               | BLN719R13S4               | C/F                       | C/F        | BLN719R13S5A              | C/F                       | C/F        | BLN719R13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 3.0 | 3  | 24 7/8 (631.8)       | 13 (6)               | BLN724R12S4               | C/F                       | C/F        | BLN724R12S5A              | C/F                       | C/F        | BLN724R12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 3.0 | 3  | 24 7/8 (631.8)       | 13 (6)               | BLN724R13S4               | C/F                       | C/F        | BLN724R13S5A              | C/F                       | C/F        | BLN724R13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 4.0 | 3  | 32 3/8 (822.3)       | 15 (7)               | BLN732G12S4               | C/F                       | C/F        | BLN732G12S5A              | C/F                       | C/F        | BLN732G12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 4.0 | 3  | 32 3/8 (822.3)       | 15 (7)               | BLN732G13S4               | C/F                       | C/F        | BLN732G13S5A              | C/F                       | C/F        | BLN732G13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 5.0 | 3  | 39 7/8 (1012.8)      | 16 (8)               | BLN739R12S4               | C/F                       | C/F        | BLN739R12S5A              | C/F                       | C/F        | BLN739R12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 5.0 | 3  | 39 7/8 (1012.8)      | 16 (8)               | BLN739R13S4               | C/F                       | C/F        | BLN739R13S5A              | C/F                       | C/F        | BLN739R13S7A              | C/F                       | C/F        |
|                                                                                                  | 240   | 6.0 | 3  | 47 3/8 (1203.3)      | 18 (9)               | BLN747G12S4               | C/F                       | C/F        | BLN747G12S5A              | C/F                       | C/F        | BLN747G12S7A              | C/F                       | C/F        |
|                                                                                                  | 480   | 6.0 | 3  | 47 3/8 (1203.3)      | 18 (9)               | BLN747G13S4               | C/F                       | C/F        | BLN747G13S5A              | C/F                       | C/F        | BLN747G13S7A              | C/F                       | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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③ Wired for 3-phase operation only

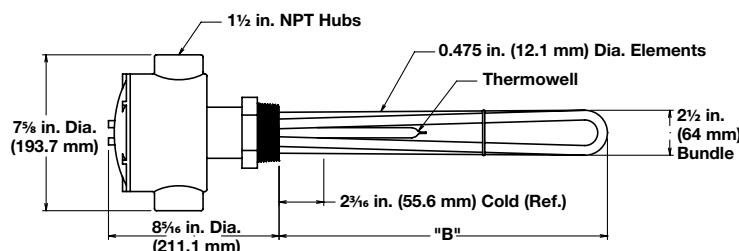
# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Application: Medium Weight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A
- Moisture/explosion-resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                              | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30-110°F)                                   |                        |               | Type 5A (60-250°F)                                  |                        |               | Type 7A (100-550°F)                                 |                        |               |
|----------------------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|-----------------------------------------------------|------------------------|---------------|-----------------------------------------------------|------------------------|---------------|-----------------------------------------------------|------------------------|---------------|
|                                                                                                          |       |     |    |                      |                      | Part Number                                         | WATCONNECT Part Number |               | Part Number                                         | WATCONNECT Part Number |               | Part Number                                         | WATCONNECT Part Number |               |
|                                                                                                          |       |     |    |                      |                      | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C | Moisture/<br>Explosion-<br>Resistant<br>Enclosure ⑤ | Type J<br>T/C          | Type K<br>T/C |
| <b>16 W/in<sup>2</sup> ③<br/>304 SS<br/>Plug<br/>3-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 9 3/8 (238.1)        | 10 (5)               | BLN79G12C4                                          | C/F                    | C/F           | BLN79G12C5A                                         | C/F                    | C/F           | BLN79G12C7A                                         | C/F                    | C/F           |
|                                                                                                          | 480   | 1.0 | 3  | 9 3/8 (238.1)        | 10 (5)               | BLN79G13C4                                          | C/F                    | C/F           | BLN79G13C5A                                         | C/F                    | C/F           | BLN79G13C7A                                         | C/F                    | C/F           |
|                                                                                                          | 240   | 1.5 | 3  | 12 7/8 (327.0)       | 11 (5)               | BLN712R12C4                                         | C/F                    | C/F           | BLN712R12C5A                                        | C/F                    | C/F           | BLN712R12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 1.5 | 3  | 12 7/8 (327.0)       | 11 (5)               | BLN712R13C4                                         | C/F                    | C/F           | BLN712R13C5A                                        | C/F                    | C/F           | BLN712R13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 2.0 | 3  | 17 3/8 (441.3)       | 13 (6)               | BLN717G12C4                                         | C/F                    | C/F           | BLN717G12C5A                                        | C/F                    | C/F           | BLN717G12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 2.0 | 3  | 17 3/8 (441.3)       | 13 (6)               | BLN717G13C4                                         | C/F                    | C/F           | BLN717G13C5A                                        | C/F                    | C/F           | BLN717G13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 2.5 | 3  | 19 7/8 (504.8)       | 15 (7)               | BLN719R12C4                                         | C/F                    | C/F           | BLN719R12C5A                                        | C/F                    | C/F           | BLN719R12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 2.5 | 3  | 19 7/8 (504.8)       | 15 (7)               | BLN719R13C4                                         | C/F                    | C/F           | BLN719R13C5A                                        | C/F                    | C/F           | BLN719R13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 3.0 | 3  | 24 7/8 (631.8)       | 16 (8)               | BLN724R12C4                                         | C/F                    | C/F           | BLN724R12C5A                                        | C/F                    | C/F           | BLN724R12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 3.0 | 3  | 24 7/8 (631.8)       | 16 (8)               | BLN724R13C4                                         | C/F                    | C/F           | BLN724R13C5A                                        | C/F                    | C/F           | BLN724R13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 4.0 | 3  | 32 3/8 (822.3)       | 18 (9)               | BLN732G12C4                                         | C/F                    | C/F           | BLN732G12C5A                                        | C/F                    | C/F           | BLN732G12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 4.0 | 3  | 32 3/8 (822.3)       | 18 (9)               | BLN732G13C4                                         | C/F                    | C/F           | BLN732G13C5A                                        | C/F                    | C/F           | BLN732G13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 5.0 | 3  | 39 7/8 (1012.8)      | 19 (9)               | BLN739R12C4                                         | C/F                    | C/F           | BLN739R12C5A                                        | C/F                    | C/F           | BLN739R12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 5.0 | 3  | 39 7/8 (1012.8)      | 19 (9)               | BLN739R13C4                                         | C/F                    | C/F           | BLN739R13C5A                                        | C/F                    | C/F           | BLN739R13C7A                                        | C/F                    | C/F           |
|                                                                                                          | 240   | 6.0 | 3  | 47 3/8 (1203.3)      | 21 (10)              | BLN747G12C4                                         | C/F                    | C/F           | BLN747G12C5A                                        | C/F                    | C/F           | BLN747G12C7A                                        | C/F                    | C/F           |
|                                                                                                          | 480   | 6.0 | 3  | 47 3/8 (1203.3)      | 21 (10)              | BLN747G13C4                                         | C/F                    | C/F           | BLN747G13C5A                                        | C/F                    | C/F           | BLN747G13C7A                                        | C/F                    | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

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⑤ No third party recognition

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# Immersion Heaters

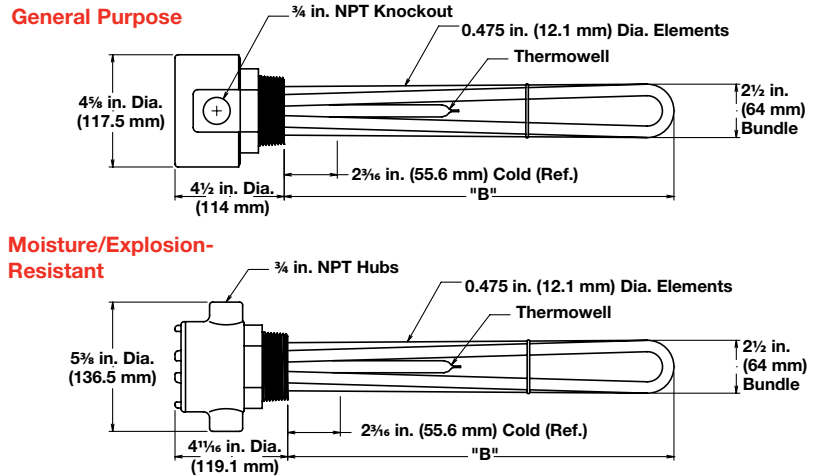


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                          | Volts | kW  | Ph | "B" Dim.<br>in. (mm)                    | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------|-----|----|-----------------------------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |       |     |    |                                         | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>16 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)   | <b>BLN79G12S</b>             | 6 (3)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN79G12C</b>                           | 9 (4)                | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 1.0 | 3  | 9 <sup>3</sup> / <sub>8</sub> (238.1)   | <b>BLN79G13S</b>             | 6 (3)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN79G13C</b>                           | 9 (4)                | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 1.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0)  | <b>BLN712R12S</b>            | 7 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN712R12C</b>                          | 10 (5)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 1.5 | 3  | 12 <sup>7</sup> / <sub>8</sub> (327.0)  | <b>BLN712R13S</b>            | 7 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN712R13C</b>                          | 10 (5)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 2.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | <b>BLN717G12S</b>            | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN717G12C</b>                          | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 2.0 | 3  | 17 <sup>3</sup> / <sub>8</sub> (441.3)  | <b>BLN717G13S</b>            | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN717G13C</b>                          | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 2.5 | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8)  | <b>BLN719R12S</b>            | 11 (5)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN719R12C</b>                          | 14 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 2.5 | 3  | 19 <sup>7</sup> / <sub>8</sub> (504.8)  | <b>BLN719R13S</b>            | 11 (5)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN719R13C</b>                          | 14 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 3.0 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | <b>BLN724R12S</b>            | 12 (6)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN724R12C</b>                          | 15 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 3.0 | 3  | 24 <sup>7</sup> / <sub>8</sub> (631.8)  | <b>BLN724R13S</b>            | 12 (6)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN724R13C</b>                          | 15 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 4.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | <b>BLN732G12S</b>            | 14 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN732G12C</b>                          | 17 (8)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 4.0 | 3  | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | <b>BLN732G13S</b>            | 14 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN732G13C</b>                          | 17 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 5.0 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | <b>BLN739R12S</b>            | 15 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN739R12C</b>                          | 18 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 5.0 | 3  | 39 <sup>7</sup> / <sub>8</sub> (1012.8) | <b>BLN739R13S</b>            | 15 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN739R13C</b>                          | 18 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                      | 240   | 6.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | <b>BLN747G12S</b>            | 17 (8)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLN747G12C</b>                          | 20 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                      | 480   | 6.0 | 3  | 47 <sup>3</sup> / <sub>8</sub> (1203.3) | <b>BLN747G13S</b>            | 17 (8)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLN747G13C</b>                          | 20 (9)               | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



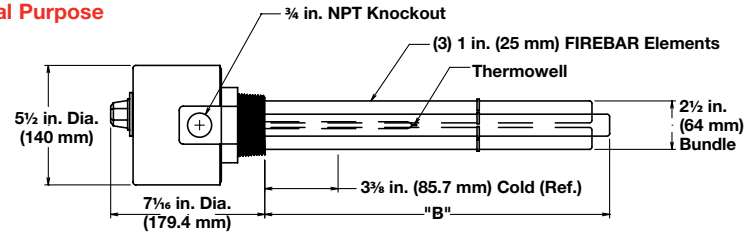
## WATROD and FIREBAR Screw Plug Immersion Heaters



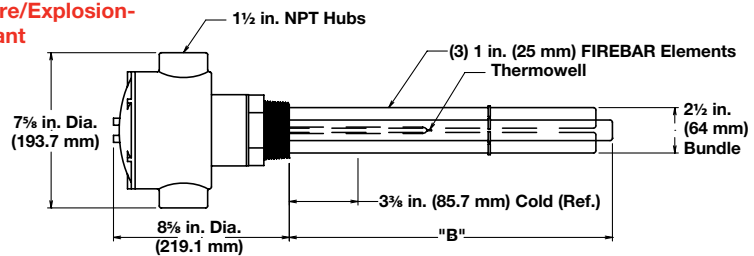
### Application: Medium Weight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
  - FIREBAR elements
  - With thermostat (DPST), Type 5A or 7A
- Note:** Higher amperage products require a pilot duty thermostat with separate power controller. Please see following pages for available heaters without thermostats.
- General purpose enclosure
  - Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



|                                                                     |       |      |    |                      |                      | Type 5A (60-250°F)                           |                           |               | Type 7A (100-550°F)                          |                           |               |
|---------------------------------------------------------------------|-------|------|----|----------------------|----------------------|----------------------------------------------|---------------------------|---------------|----------------------------------------------|---------------------------|---------------|
| Description                                                         | Volts | kW   | Ph | “B” Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number                               | WATCONNECT<br>Part Number |               | Part<br>Number                               | WATCONNECT<br>Part Number |               |
|                                                                     |       |      |    |                      |                      | General Purpose<br>Enclosure                 | Type J<br>T/C             | Type K<br>T/C | General Purpose<br>Enclosure                 | Type J<br>T/C             | Type K<br>T/C |
| 15 W/in² ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(2.3 W/cm²) | 240   | 2.0  | 3  | 12 (305)             | 11 (5)               | BLNF12A29S5A                                 | C/F                       | C/F           | BLNF12A29S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 2.5  | 3  | 14½ (368)            | 12 (6)               | BLNF14J29S5A                                 | C/F                       | C/F           | BLNF14J29S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 3.0  | 3  | 17 (432)             | 13 (6)               | BLNF17A29S5A                                 | C/F                       | C/F           | BLNF17A29S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 4.0  | 3  | 21½ (546)            | 15 (7)               | BLNF21J29S5A                                 | C/F                       | C/F           | BLNF21J29S7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 4.0  | 3  | 21½ (546)            | 15 (7)               | BLNF21J30S5A                                 | C/F                       | C/F           | BLNF21J30S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 5.0  | 3  | 26½ (673)            | 18 (9)               | BLNF26J29S5A                                 | C/F                       | C/F           | BLNF26J29S7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 5.0  | 3  | 26½ (673)            | 18 (9)               | BLNF26J30S5A                                 | C/F                       | C/F           | BLNF26J30S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 6.0  | 3  | 31½ (800)            | 19 (9)               | BLNF31J29S5A                                 | C/F                       | C/F           | BLNF31J29S7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 6.0  | 3  | 31½ (800)            | 19 (9)               | BLNF31J30S5A                                 | C/F                       | C/F           | BLNF31J30S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 8.0  | 3  | 41 (1041)            | 21 (10)              | BLNF41A29S5A                                 | C/F                       | C/F           | BLNF41A29S7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 10.0 | 3  | 50½ (1283)           | 23 (11)              | BLNF50J29S5A                                 | C/F                       | C/F           | BLNF50J29S7A                                 | C/F                       | C/F           |
|                                                                     |       |      |    |                      |                      |                                              |                           |               |                                              |                           |               |
|                                                                     |       |      |    |                      |                      | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure ⑤ | Type J<br>T/C             | Type K<br>T/C |
| 15 W/in² ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(2.3 W/cm²) | 240   | 2.0  | 3  | 12 (305)             | 14 (7)               | BLNF12A29C5A                                 | C/F                       | C/F           | BLNF12A29C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 2.5  | 3  | 14½ (368)            | 15 (7)               | BLNF14J29C5A                                 | C/F                       | C/F           | BLNF14J29C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 3.0  | 3  | 17 (432)             | 16 (8)               | BLNF17A29C5A                                 | C/F                       | C/F           | BLNF17A29C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 4.0  | 3  | 21½ (546)            | 18 (9)               | BLNF21J29C5A                                 | C/F                       | C/F           | BLNF21J29C7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 4.0  | 3  | 21½ (546)            | 18 (9)               | BLNF21J30C5A                                 | C/F                       | C/F           | BLNF21J30C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 5.0  | 3  | 26½ (673)            | 21 (10)              | BLNF26J29C5A                                 | C/F                       | C/F           | BLNF26J29C7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 5.0  | 3  | 26½ (673)            | 21 (10)              | BLNF26J30C5A                                 | C/F                       | C/F           | BLNF26J30C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 6.0  | 3  | 31½ (800)            | 22 (10)              | BLNF31J29C5A                                 | C/F                       | C/F           | BLNF31J29C7A                                 | C/F                       | C/F           |
|                                                                     | 480   | 6.0  | 3  | 31½ (800)            | 22 (10)              | BLNF31J30C5A                                 | C/F                       | C/F           | BLNF31J30C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 8.0  | 3  | 41 (1041)            | 24 (11)              | BLNF41A29C5A                                 | C/F                       | C/F           | BLNF41A29C7A                                 | C/F                       | C/F           |
|                                                                     | 240   | 10.0 | 3  | 50½ (1283)           | 26 (11)              | BLNF50J29C5A                                 | C/F                       | C/F           | BLNF50J29C7A                                 | C/F                       | C/F           |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



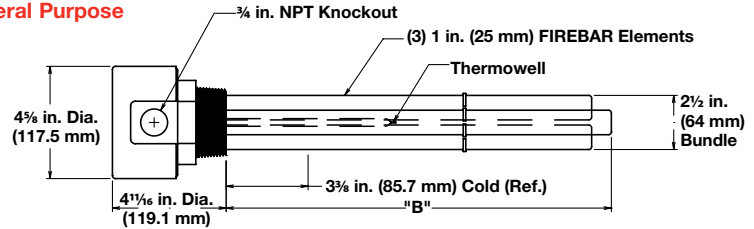
## WATROD and FIREBAR Screw Plug Immersion Heaters



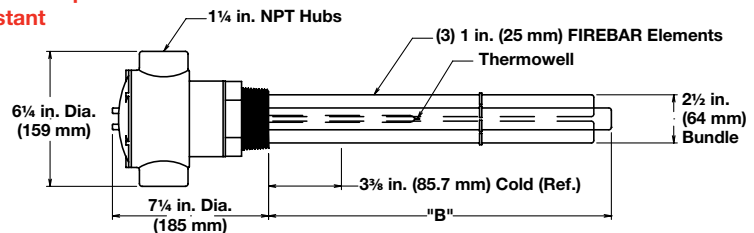
### Application: Medium Weight Oils and Heat Transfer Oils

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure  
(suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                          | Volts | kW   | Ph | "B" Dim.<br>In. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                      |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>15 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(2.3 W/cm<sup>2</sup>)</b> | 240   | 2.0  | 3  | 12 (305)             | BLNF12A29S                   | 10 (5)               | C2-50                     | C2-92         | BLNF12A29C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                                      | 240   | 2.5  | 3  | 14 1/2 (368)         | BLNF14J29S                   | 11 (5)               | C2-50                     | C2-92         | BLNF14J29C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 240   | 3.0  | 3  | 17 (432)             | BLNF17A29S                   | 12 (6)               | C2-50                     | C2-92         | BLNF17A29C                                 | 15 (7)               | C3-94                     | C3-93         |
|                                                                                                      | 240   | 4.0  | 3  | 21 1/2 (546)         | BLNF21J29S                   | 14 (7)               | C2-50                     | C2-92         | BLNF21J29C                                 | 17 (8)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 4.0  | 3  | 21 1/2 (546)         | BLNF21J30S                   | 14 (7)               | C2-43                     | C2-35         | BLNF21J30C                                 | 17 (8)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 5.0  | 3  | 26 1/2 (673)         | BLNF26J29S                   | 17 (8)               | C2-50                     | C2-92         | BLNF26J29C                                 | 20 (9)               | C3-94                     | C3-93         |
|                                                                                                      | 480   | 5.0  | 3  | 26 1/2 (673)         | BLNF26J30S                   | 17 (8)               | C2-43                     | C2-35         | BLNF26J30C                                 | 20 (9)               | C3-116                    | C3-118        |
|                                                                                                      | 240   | 6.0  | 3  | 31 1/2 (800)         | BLNF31J29S                   | 18 (9)               | C2-50                     | C2-92         | BLNF31J29C                                 | 21 (10)              | C3-94                     | C3-93         |
|                                                                                                      | 480   | 6.0  | 3  | 31 1/2 (800)         | BLNF31J30S                   | 18 (9)               | C2-43                     | C2-35         | BLNF31J30C                                 | 21 (10)              | C3-116                    | C3-118        |
|                                                                                                      | 240   | 8.0  | 3  | 41 (1041)            | BLNF41A29S                   | 20 (9)               | C2-50                     | C2-92         | BLNF41A29C                                 | 23 (11)              | C3-94                     | C3-93         |
|                                                                                                      | 480   | 8.0  | 3  | 41 (1041)            | BLNF41A30S                   | 20 (9)               | C2-43                     | C2-35         | BLNF41A30C                                 | 23 (11)              | C3-116                    | C3-118        |
|                                                                                                      | 240   | 10.0 | 3  | 50 1/2 (1283)        | BLNF50J29S                   | 22 (10)              | C2-50                     | C2-92         | BLNF50J29C                                 | 25 (12)              | C3-94                     | C3-93         |
|                                                                                                      | 480   | 10.0 | 3  | 50 1/2 (1283)        | BLNF50J30S                   | 22 (10)              | C2-43                     | C2-35         | BLNF50J30C                                 | 25 (12)              | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



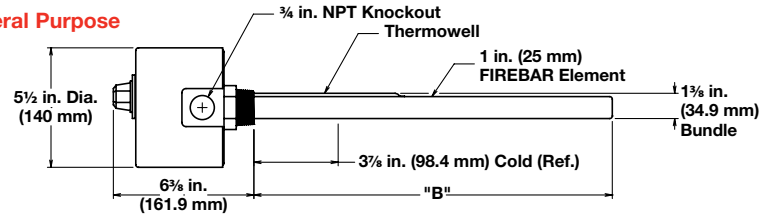
## WATROD and FIREBAR Screw Plug Immersion Heaters



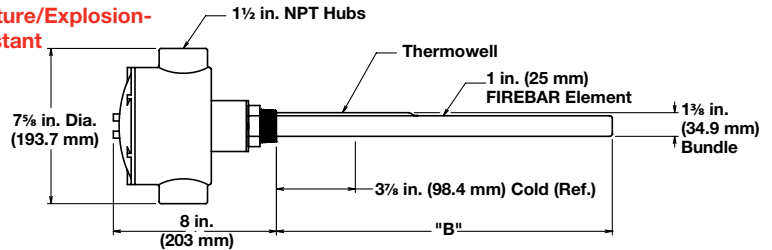
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- With thermostat (DPST), Type 5A or 7A
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                                | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60-250°F)                              |                        |            | Type 7A (100-550°F)                             |                        |            |
|--------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|-------------------------------------------------|------------------------|------------|-------------------------------------------------|------------------------|------------|
|                                                                                            |       |      |    |                      |                      | Part Number                                     | WATCONNECT Part Number |            | Part Number                                     | WATCONNECT Part Number |            |
|                                                                                            |       |      |    |                      |                      | General Purpose                                 | Type J T/C             | Type K T/C | General Purpose                                 | Type J T/C             | Type K T/C |
| 8 W/in <sup>2</sup> ③<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(1.3 W/cm <sup>2</sup> ) | 240   | 0.43 | 3  | 16 1/8 (409.6)       | 8 (4)                | BDNF16G22S5A                                    | C/F                    | C/F        | BDNF16G22S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.55 | 3  | 19 1/8 (485.8)       | 9 (4)                | BDNF19G22S5A                                    | C/F                    | C/F        | BDNF19G22S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.70 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L22S5A                                    | C/F                    | C/F        | BDNF24L22S7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 0.70 | 3  | 24 3/8 (619.1)       | 10 (5)               | BDNF24L21S5A                                    | C/F                    | C/F        | BDNF24L21S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.88 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R22S5A                                    | C/F                    | C/F        | BDNF29R22S7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 0.88 | 3  | 29 5/8 (752.5)       | 11 (5)               | BDNF29R21S5A                                    | C/F                    | C/F        | BDNF29R21S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.08 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R22S5A                                    | C/F                    | C/F        | BDNF34R22S7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.08 | 3  | 34 5/8 (879.5)       | 12 (6)               | BDNF34R21S5A                                    | C/F                    | C/F        | BDNF34R21S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.40 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G22S5A                                    | C/F                    | C/F        | BDNF45G22S7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.40 | 3  | 45 1/8 (1146.2)      | 14 (7)               | BDNF45G21S5A                                    | C/F                    | C/F        | BDNF45G21S7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.80 | 3  | 55 5/8 (1412.9)      | 16 (8)               | BDNF55R22S5A                                    | C/F                    | C/F        | BDNF55R22S7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.80 | 3  | 55 5/8 (1412.9)      | 16 (8)               | BDNF55R21S5A                                    | C/F                    | C/F        | BDNF55R21S7A                                    | C/F                    | C/F        |
|                                                                                            |       |      |    |                      |                      | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C |
| 8 W/in <sup>2</sup> ③<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(1.3 W/cm <sup>2</sup> ) | 240   | 0.43 | 3  | 16 1/8 (409.6)       | 11 (5)               | BDNF16G22C5A                                    | C/F                    | C/F        | BDNF16G22C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.55 | 3  | 19 1/8 (485.8)       | 12 (6)               | BDNF19G22C5A                                    | C/F                    | C/F        | BDNF19G22C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.70 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L22C5A                                    | C/F                    | C/F        | BDNF24L22C7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 0.70 | 3  | 24 3/8 (619.1)       | 13 (6)               | BDNF24L21C5A                                    | C/F                    | C/F        | BDNF24L21C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 0.88 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R22C5A                                    | C/F                    | C/F        | BDNF29R22C7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 0.88 | 3  | 29 5/8 (752.5)       | 14 (7)               | BDNF29R21C5A                                    | C/F                    | C/F        | BDNF29R21C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.08 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R22C5A                                    | C/F                    | C/F        | BDNF34R22C7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.08 | 3  | 34 5/8 (879.5)       | 15 (7)               | BDNF34R21C5A                                    | C/F                    | C/F        | BDNF34R21C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.40 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G22C5A                                    | C/F                    | C/F        | BDNF45G22C7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.40 | 3  | 45 1/8 (1146.2)      | 17 (8)               | BDNF45G21C5A                                    | C/F                    | C/F        | BDNF45G21C7A                                    | C/F                    | C/F        |
|                                                                                            | 240   | 1.80 | 3  | 55 5/8 (1412.9)      | 19 (9)               | BDNF55R22C5A                                    | C/F                    | C/F        | BDNF55R22C7A                                    | C/F                    | C/F        |
|                                                                                            | 480   | 1.80 | 3  | 55 5/8 (1412.9)      | 19 (9)               | BDNF55R21C5A                                    | C/F                    | C/F        | BDNF55R21C7A                                    | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



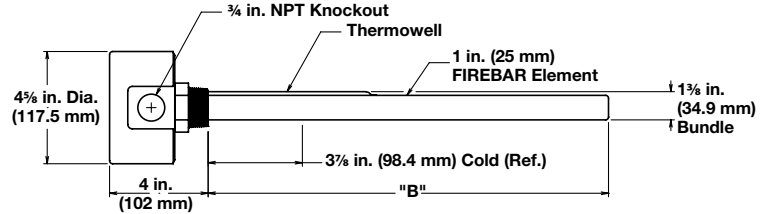
## WATROD and FIREBAR Screw Plug Immersion Heaters



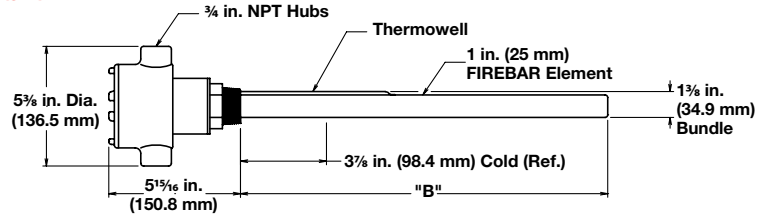
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 1 1/4 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|--------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                            |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| 8 W/in <sup>2</sup> ③<br>304 SS Plug<br>1-Alloy 800<br>Element<br>(1.3 W/cm <sup>2</sup> ) | 240   | 0.43 | 3  | 16 1/8 (409.6)       | BDNF16G22S                   | 7 (4)                | C2-50                     | C2-92         | BDNF16G22C                                 | 10 (5)               | C3-94                     | C3-93         |
|                                                                                            | 240   | 0.55 | 3  | 19 1/8 (485.8)       | BDNF19G22S                   | 8 (4)                | C2-50                     | C2-92         | BDNF19G22C                                 | 11 (5)               | C3-94                     | C3-93         |
|                                                                                            | 240   | 0.70 | 3  | 24 3/8 (619.1)       | BDNF24L22S                   | 9 (4)                | C2-50                     | C2-92         | BDNF24L22C                                 | 12 (6)               | C3-94                     | C3-93         |
|                                                                                            | 480   | 0.70 | 3  | 24 3/8 (619.1)       | BDNF24L21S                   | 9 (4)                | C2-43                     | C2-35         | BDNF24L21C                                 | 12 (6)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 0.88 | 3  | 29 5/8 (752.5)       | BDNF29R22S                   | 10 (5)               | C2-50                     | C2-92         | BDNF29R22C                                 | 13 (6)               | C3-94                     | C3-93         |
|                                                                                            | 480   | 0.88 | 3  | 29 5/8 (752.5)       | BDNF29R21S                   | 10 (5)               | C2-43                     | C2-35         | BDNF29R21C                                 | 13 (6)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 1.08 | 3  | 34 5/8 (879.5)       | BDNF34R22S                   | 11 (5)               | C2-50                     | C2-92         | BDNF34R22C                                 | 14 (7)               | C3-94                     | C3-93         |
|                                                                                            | 480   | 1.08 | 3  | 34 5/8 (879.5)       | BDNF34R21S                   | 11 (5)               | C2-43                     | C2-35         | BDNF34R21C                                 | 14 (7)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 1.40 | 3  | 45 1/8 (1146.2)      | BDNF45G22S                   | 13 (6)               | C2-50                     | C2-92         | BDNF45G22C                                 | 16 (8)               | C3-94                     | C3-93         |
|                                                                                            | 480   | 1.40 | 3  | 45 1/8 (1146.2)      | BDNF45G21S                   | 13 (6)               | C2-43                     | C2-35         | BDNF45G21C                                 | 16 (8)               | C3-116                    | C3-118        |
|                                                                                            | 240   | 1.80 | 3  | 55 5/8 (1412.9)      | BDNF55R22S                   | 15 (7)               | C2-50                     | C2-92         | BDNF55R22C                                 | 18 (9)               | C3-94                     | C3-93         |
|                                                                                            | 480   | 1.80 | 3  | 55 5/8 (1412.9)      | BDNF55R21S                   | 15 (7)               | C2-43                     | C2-35         | BDNF55R21C                                 | 18 (9)               | C3-116                    | C3-118        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition



# Immersion Heaters



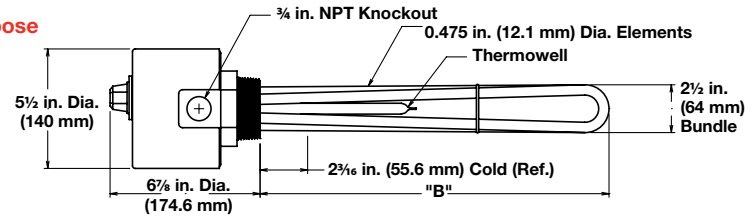
## WATROD and FIREBAR Screw Plug Immersion Heaters



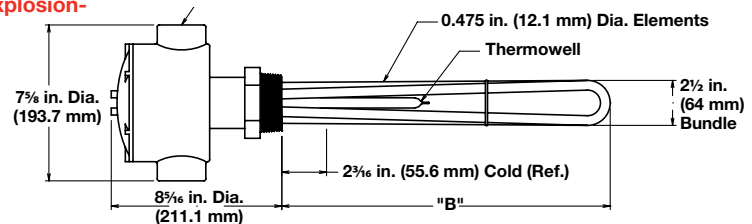
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 2 1/2 inch NPT screw plug
- WATROD elements
- With thermostat (DPST), Type 4, 5A or 7A
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

General Purpose



Moisture/Explosion-Resistant



| Description                                                                            | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 4 (30-110°F)                        |                        |            | Type 5A (60-250°F)                       |                        |            | Type 7A (100-550°F)                      |                        |            |
|----------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|------------------------------------------|------------------------|------------|
|                                                                                        |       |     |    |                      |                      | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            | Part Number                              | WATCONNECT Part Number |            |
|                                                                                        |       |     |    |                      |                      | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C | General Purpose Enclosure                | Type J T/C             | Type K T/C |
| 8 W/in <sup>2</sup> ③<br>Steel Plug<br>3-Steel<br>Elements<br>(1.3 W/cm <sup>2</sup> ) | 240   | 1.0 | 3  | 17 1/4 (438)         | 10 (5)               | BLS717E12S4                              | C/F                    | C/F        | BLS717E12S5A                             | C/F                    | C/F        | BLS717E12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 1.0 | 3  | 17 1/4 (438)         | 10 (5)               | BLS717E13S4                              | C/F                    | C/F        | BLS717E13S5A                             | C/F                    | C/F        | BLS717E13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 1.5 | 3  | 24 3/4 (629)         | 13 (6)               | BLS724N12S4                              | C/F                    | C/F        | BLS724N12S5A                             | C/F                    | C/F        | BLS724N12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 1.5 | 3  | 24 3/4 (629)         | 13 (6)               | BLS724N13S4                              | C/F                    | C/F        | BLS724N13S5A                             | C/F                    | C/F        | BLS724N13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 2.0 | 3  | 32 1/4 (819)         | 15 (7)               | BLS732E12S4                              | C/F                    | C/F        | BLS732E12S5A                             | C/F                    | C/F        | BLS732E12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 2.0 | 3  | 32 1/4 (819)         | 15 (7)               | BLS732E13S4                              | C/F                    | C/F        | BLS732E13S5A                             | C/F                    | C/F        | BLS732E13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 2.5 | 3  | 39 3/4 (1010)        | 16 (8)               | BLS739N12S4                              | C/F                    | C/F        | BLS739N12S5A                             | C/F                    | C/F        | BLS739N12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 2.5 | 3  | 39 3/4 (1010)        | 16 (8)               | BLS739N13S4                              | C/F                    | C/F        | BLS739N13S5A                             | C/F                    | C/F        | BLS739N13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 3.0 | 3  | 47 1/4 (1200)        | 18 (9)               | BLS747E12S4                              | C/F                    | C/F        | BLS747E12S5A                             | C/F                    | C/F        | BLS747E12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 3.0 | 3  | 47 1/4 (1200)        | 18 (9)               | BLS747E13S4                              | C/F                    | C/F        | BLS747E13S5A                             | C/F                    | C/F        | BLS747E13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 4.0 | 3  | 63 3/4 (1619)        | 21 (10)              | BLS763N12S4                              | C/F                    | C/F        | BLS763N12S5A                             | C/F                    | C/F        | BLS763N12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 4.0 | 3  | 63 3/4 (1619)        | 21 (10)              | BLS763N13S4                              | C/F                    | C/F        | BLS763N13S5A                             | C/F                    | C/F        | BLS763N13S7                              | C/F                    | C/F        |
|                                                                                        | 240   | 5.0 | 3  | 76 1/4 (1937)        | 24 (11)              | BLS776E12S4                              | C/F                    | C/F        | BLS776E12S5A                             | C/F                    | C/F        | BLS776E12S7                              | C/F                    | C/F        |
|                                                                                        | 480   | 5.0 | 3  | 76 1/4 (1937)        | 24 (11)              | BLS776E13S4                              | C/F                    | C/F        | BLS776E13S5A                             | C/F                    | C/F        | BLS776E13S7                              | C/F                    | C/F        |
| 8 W/in <sup>2</sup> ③<br>Steel Plug<br>3-Steel<br>Elements<br>(1.3 W/cm <sup>2</sup> ) | 240   | 1.0 | 3  | 17 1/4 (438)         | 13 (6)               | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/Explosion-Resistant Enclosure ⑤ | Type J T/C             | Type K T/C |
|                                                                                        | 480   | 1.0 | 3  | 17 1/4 (438)         | 13 (6)               | BLS717E12C4                              | C/F                    | C/F        | BLS717E12C5A                             | C/F                    | C/F        | BLS717E12C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 1.5 | 3  | 24 3/4 (629)         | 16 (8)               | BLS724N12C4                              | C/F                    | C/F        | BLS724N12C5A                             | C/F                    | C/F        | BLS724N12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 1.5 | 3  | 24 3/4 (629)         | 16 (8)               | BLS724N13C4                              | C/F                    | C/F        | BLS724N13C5A                             | C/F                    | C/F        | BLS724N13C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 2.0 | 3  | 32 1/4 (819)         | 18 (9)               | BLS732E12C4                              | C/F                    | C/F        | BLS732E12C5A                             | C/F                    | C/F        | BLS732E12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 2.0 | 3  | 32 1/4 (819)         | 18 (9)               | BLS732E13C4                              | C/F                    | C/F        | BLS732E13C5A                             | C/F                    | C/F        | BLS732E13C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 2.5 | 3  | 39 3/4 (1010)        | 19 (9)               | BLS739N12C4                              | C/F                    | C/F        | BLS739N12C5A                             | C/F                    | C/F        | BLS739N12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 2.5 | 3  | 39 3/4 (1010)        | 19 (9)               | BLS739N13C4                              | C/F                    | C/F        | BLS739N13C5A                             | C/F                    | C/F        | BLS739N13C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 3.0 | 3  | 47 1/4 (1200)        | 21 (10)              | BLS747E12C4                              | C/F                    | C/F        | BLS747E12C5A                             | C/F                    | C/F        | BLS747E12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 3.0 | 3  | 47 1/4 (1200)        | 21 (10)              | BLS747E13C4                              | C/F                    | C/F        | BLS747E13C5A                             | C/F                    | C/F        | BLS747E13C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 4.0 | 3  | 63 3/4 (1619)        | 24 (11)              | BLS763N12C4                              | C/F                    | C/F        | BLS763N12C5A                             | C/F                    | C/F        | BLS763N12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 4.0 | 3  | 63 3/4 (1619)        | 24 (11)              | BLS763N13C4                              | C/F                    | C/F        | BLS763N13C5A                             | C/F                    | C/F        | BLS763N13C7A                             | C/F                    | C/F        |
|                                                                                        | 240   | 5.0 | 3  | 76 1/4 (1937)        | 27 (13)              | BLS776E12C4                              | C/F                    | C/F        | BLS776E12C5A                             | C/F                    | C/F        | BLS776E12C7A                             | C/F                    | C/F        |
|                                                                                        | 480   | 5.0 | 3  | 76 1/4 (1937)        | 27 (13)              | BLS776E13C4                              | C/F                    | C/F        | BLS776E13C5A                             | C/F                    | C/F        | BLS776E13C7A                             | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

- ③ Wired for 3-phase operation only  
⑤ No third party recognition

C/F - Contact factory, go to  
[www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters

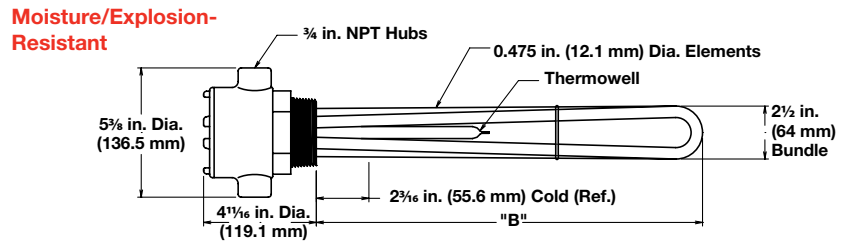
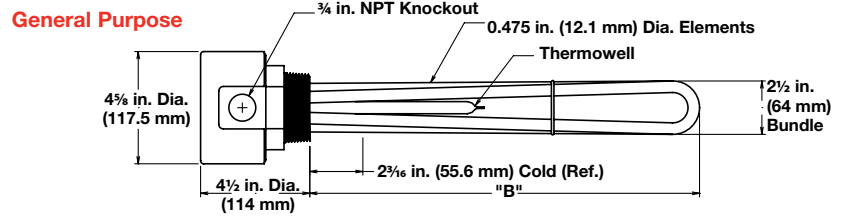


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 2 1/2 inch NPT screw plug
- WATROD elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)



| Description                                                                                    | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------------|-------|-----|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                |       |     |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>8 W/in<sup>2</sup> ③<br/>Steel Plug<br/>3-Steel<br/>Elements<br/>(1.3 W/cm<sup>2</sup>)</b> | 240   | 1.0 | 3  | 17 1/4 (438)         | <b>BLS717E12S</b>            | 9 (4)                | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS717E12C</b>                          | 12 (6)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 1.0 | 3  | 17 1/4 (438)         | <b>BLS717E13S</b>            | 9 (4)                | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS717E13C</b>                          | 12 (6)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 1.5 | 3  | 24 3/4 (629)         | <b>BLS724N12S</b>            | 12 (6)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS724N12C</b>                          | 15 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 1.5 | 3  | 24 3/4 (629)         | <b>BLS724N13S</b>            | 12 (6)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS724N13C</b>                          | 15 (7)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 2.0 | 3  | 32 1/4 (819)         | <b>BLS732E12S</b>            | 14 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS732E12C</b>                          | 17 (8)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 2.0 | 3  | 32 1/4 (819)         | <b>BLS732E13S</b>            | 14 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS732E13C</b>                          | 17 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 2.5 | 3  | 39 3/4 (1010)        | <b>BLS739N12S</b>            | 15 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS739N12C</b>                          | 18 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 2.5 | 3  | 39 3/4 (1010)        | <b>BLS739N13S</b>            | 15 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS739N13C</b>                          | 18 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 3.0 | 3  | 47 1/4 (1200)        | <b>BLS747E12S</b>            | 17 (8)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS747E12C</b>                          | 20 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 3.0 | 3  | 47 1/4 (1200)        | <b>BLS747E13S</b>            | 17 (8)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS747E13C</b>                          | 20 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 4.0 | 3  | 63 3/4 (1619)        | <b>BLS763N12S</b>            | 20 (9)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS763N12C</b>                          | 23 (11)              | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 4.0 | 3  | 63 3/4 (1619)        | <b>BLS763N13S</b>            | 20 (9)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS763N13C</b>                          | 23 (11)              | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                | 240   | 5.0 | 3  | 76 1/4 (1937)        | <b>BLS776E12S</b>            | 23 (11)              | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLS776E12C</b>                          | 26 (12)              | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                | 480   | 5.0 | 3  | 76 1/4 (1937)        | <b>BLS776E13S</b>            | 23 (11)              | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLS776E13C</b>                          | 26 (12)              | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



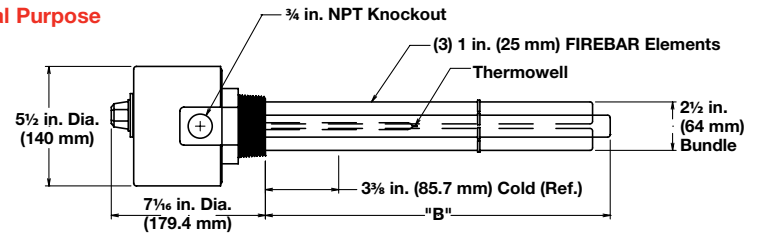
## WATROD and FIREBAR Screw Plug Immersion Heaters



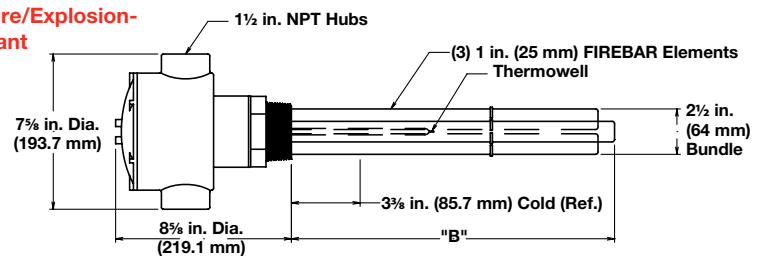
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- With thermostat (DPST), Type 5A or 7A
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure (suitable for use in non-classified areas only)

#### General Purpose



#### Moisture/Explosion-Resistant



| Description                                                                                 | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Type 5A (60-250°F)                              |                        |            | Type 7A (100-550°F)                             |                        |            |
|---------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|-------------------------------------------------|------------------------|------------|-------------------------------------------------|------------------------|------------|
|                                                                                             |       |      |    |                      |                      | Part Number                                     | WATCONNECT Part Number |            | Part Number                                     | WATCONNECT Part Number |            |
|                                                                                             |       |      |    |                      |                      | General Purpose Enclosure                       | Type J T/C             | Type K T/C | General Purpose Enclosure                       | Type J T/C             | Type K T/C |
| 8 W/in <sup>2</sup> ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(1.3 W/cm <sup>2</sup> ) | 240   | 1.25 | 3  | 15 1/8 (384.2)       | 11 (5)               | BLNF15C22S5A                                    | C/F                    | C/F        | BLNF15C22S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 1.63 | 3  | 18 1/8 (460.4)       | 13 (6)               | BLNF18C22S5A                                    | C/F                    | C/F        | BLNF18C22S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 2.13 | 3  | 23 1/8 (587.4)       | 15 (7)               | BLNF23C22S5A                                    | C/F                    | C/F        | BLNF23C22S7A                                    | C/F                    | C/F        |
|                                                                                             | 480   | 2.13 | 3  | 23 1/8 (587.4)       | 15 (7)               | BLNF23C21S5A                                    | C/F                    | C/F        | BLNF23C21S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 2.63 | 3  | 28 5/8 (727.1)       | 18 (9)               | BLNF28L22S5A                                    | C/F                    | C/F        | BLNF28L22S7A                                    | C/F                    | C/F        |
|                                                                                             | 480   | 2.63 | 3  | 28 5/8 (727.1)       | 18 (9)               | BLNF28L21S5A                                    | C/F                    | C/F        | BLNF28L21S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 3.19 | 3  | 33 5/8 (854.1)       | 19 (9)               | BLNF33L22S5A                                    | C/F                    | C/F        | BLNF33L22S7A                                    | C/F                    | C/F        |
|                                                                                             | 480   | 3.19 | 3  | 33 5/8 (854.1)       | 19 (9)               | BLNF33L21S5A                                    | C/F                    | C/F        | BLNF33L21S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 4.25 | 3  | 44 1/8 (1120.8)      | 21 (10)              | BLNF44C22S5A                                    | C/F                    | C/F        | BLNF44C22S7A                                    | C/F                    | C/F        |
|                                                                                             | 480   | 4.25 | 3  | 44 1/8 (1120.8)      | 21 (10)              | BLNF44C21S5A                                    | C/F                    | C/F        | BLNF44C21S7A                                    | C/F                    | C/F        |
|                                                                                             | 240   | 5.38 | 3  | 54 5/8 (1387.5)      | 23 (11)              | BLNF54L22S5A                                    | C/F                    | C/F        | BLNF54L22S7A                                    | C/F                    | C/F        |
|                                                                                             | 480   | 5.38 | 3  | 54 5/8 (1387.5)      | 23 (11)              | BLNF54L21S5A                                    | C/F                    | C/F        | BLNF54L21S7A                                    | C/F                    | C/F        |
| 8 W/in <sup>2</sup> ③<br>304 SS Plug<br>3-Alloy 800<br>Elements<br>(1.3 W/cm <sup>2</sup> ) | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C | Moisture/<br>Explosion-Resistant<br>Enclosure ⑤ | Type J T/C             | Type K T/C |
|                                                                                             |       |      |    |                      |                      | BLNF15C22C5A                                    | C/F                    | C/F        | BLNF15C22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF18C22C5A                                    | C/F                    | C/F        | BLNF18C22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF23C22C5A                                    | C/F                    | C/F        | BLNF23C22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF23C21C5A                                    | C/F                    | C/F        | BLNF23C21C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF28L22C5A                                    | C/F                    | C/F        | BLNF28L22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF28L21C5A                                    | C/F                    | C/F        | BLNF28L21C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF33L22C5A                                    | C/F                    | C/F        | BLNF33L22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF33L21C5A                                    | C/F                    | C/F        | BLNF33L21C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF44C22C5A                                    | C/F                    | C/F        | BLNF44C22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF44C21C5A                                    | C/F                    | C/F        | BLNF44C21C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF54L22C5A                                    | C/F                    | C/F        | BLNF54L22C7A                                    | C/F                    | C/F        |
|                                                                                             |       |      |    |                      |                      | BLNF54L21C5A                                    | C/F                    | C/F        | BLNF54L21C7A                                    | C/F                    | C/F        |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only ⑤ No third party recognition  
C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters

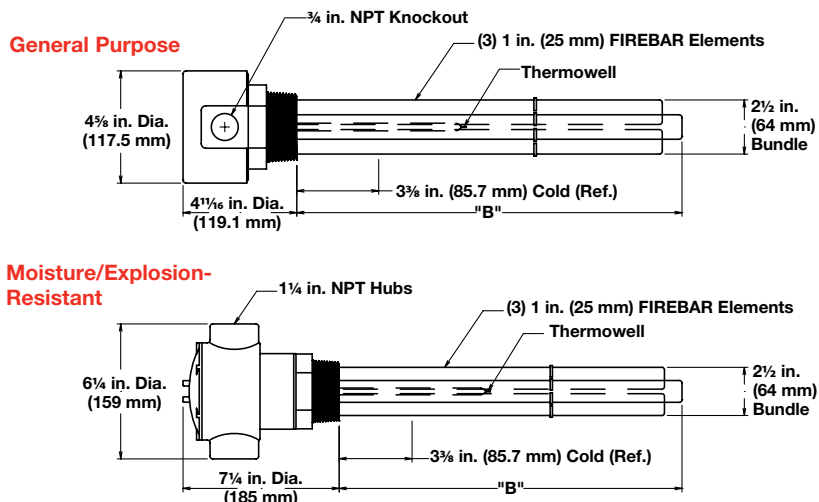


## WATROD and FIREBAR Screw Plug Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 2 1/2 inch NPT screw plug
- FIREBAR elements
- Without thermostat
- General purpose enclosure
- Moisture/Explosion-Resistant enclosure  
(suitable for use in non-classified areas only)



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Part<br>Number               | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               | Part<br>Number ⑤                           | Ship Wt.<br>lbs (kg) | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|------------------------------|----------------------|---------------------------|---------------|--------------------------------------------|----------------------|---------------------------|---------------|
|                                                                                                     |       |      |    |                      | General Purpose<br>Enclosure |                      | Type J<br>T/C             | Type K<br>T/C | Moisture/Explosion-<br>Resistant Enclosure |                      | Type J<br>T/C             | Type K<br>T/C |
| <b>8 W/in<sup>2</sup> ③<br/>304 SS Plug<br/>3-Alloy 800<br/>Elements<br/>(1.3 W/cm<sup>2</sup>)</b> | 240   | 1.25 | 3  | 15 1/8 (384.2)       | <b>BLNF15C22S</b>            | 11 (5)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF15C22C</b>                          | 14 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 240   | 1.63 | 3  | 18 1/8 (460.4)       | <b>BLNF18C22S</b>            | 12 (6)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF18C22C</b>                          | 15 (7)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 240   | 2.13 | 3  | 23 1/8 (587.4)       | <b>BLNF23C22S</b>            | 14 (7)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF23C22C</b>                          | 17 (8)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 2.13 | 3  | 23 1/8 (587.4)       | <b>BLNF23C21S</b>            | 14 (7)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLNF23C21C</b>                          | 17 (8)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 2.63 | 3  | 28 5/8 (727.1)       | <b>BLNF28L22S</b>            | 17 (8)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF28L22C</b>                          | 20 (9)               | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 2.63 | 3  | 28 5/8 (727.1)       | <b>BLNF28L21S</b>            | 17 (8)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLNF28L21C</b>                          | 20 (9)               | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 3.19 | 3  | 33 5/8 (854.1)       | <b>BLNF33L22S</b>            | 18 (9)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF33L22C</b>                          | 21 (10)              | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 3.19 | 3  | 33 5/8 (854.1)       | <b>BLNF33L21S</b>            | 18 (9)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLNF33L21C</b>                          | 21 (10)              | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 4.25 | 3  | 44 1/8 (1120.8)      | <b>BLNF44C22S</b>            | 20 (9)               | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF44C22C</b>                          | 23 (11)              | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 4.25 | 3  | 44 1/8 (1120.8)      | <b>BLNF44C21S</b>            | 20 (9)               | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLNF44C21C</b>                          | 23 (11)              | <b>C3-116</b>             | <b>C3-118</b> |
|                                                                                                     | 240   | 5.38 | 3  | 54 5/8 (1387.5)      | <b>BLNF54L22S</b>            | 22 (10)              | <b>C2-50</b>              | <b>C2-92</b>  | <b>BLNF54L22C</b>                          | 25 (12)              | <b>C3-94</b>              | <b>C3-93</b>  |
|                                                                                                     | 480   | 5.38 | 3  | 54 5/8 (1387.5)      | <b>BLNF54L21S</b>            | 22 (10)              | <b>C2-43</b>              | <b>C2-35</b>  | <b>BLNF54L21C</b>                          | 25 (12)              | <b>C3-116</b>             | <b>C3-118</b> |

**Note:** All screw plug bundles are designed to fit the inside diameter of the equivalent mating coupling. They will not fit into the equivalent pipe inside diameter.

③ Wired for 3-phase operation only

⑤ No third party recognition

# Immersion Heaters



## WATROD and FIREBAR Screw Plug Immersion Heaters

### Part Number

| Stock Screw Plug Part Number | Optional Terminal Enclosures | Optional Process Sensors | Sheath Limit Sensors |
|------------------------------|------------------------------|--------------------------|----------------------|
|                              |                              |                          |                      |

#### Stock Screw Plug Part Number

**Note:** Catalog part numbers include standard option enclosures and process sensors. To order optional enclosures or sensors, substitute the appropriate suffix.

#### Optional Terminal Enclosures

|     |                                      |
|-----|--------------------------------------|
| S = | General purpose enclosure            |
| W = | NEMA 4 enclosure                     |
| C = | CSA Type 4/Explosion proof enclosure |

**Note:** Catalog listings include either a general purpose enclosure or moisture/explosion-resistant enclosure. Substitute enclosure options are noted.

#### Optional Bulb & Capillary Thermostats or Thermocouple Process Sensors

|      |                                            |
|------|--------------------------------------------|
| 2 =  | 30 to 250°F, (-1 to 121°C) SPST            |
| 3 =  | 175 to 550°F, (79 to 288°C) SPST           |
| 4 =  | 30 to 110°F, (-1 to 43°C) DPST             |
| 5A = | 60 to 250°F, (16 to 121°C) DPST (FIREBAR)  |
| 7A = | 100 to 550°F, (38 to 288°C) DPST (FIREBAR) |
| PJ = | Type J process thermocouple in thermowell  |
| PK = | Type K process thermocouple in thermowell  |

**Note:** Thermostat part numbers are shown in the *Thermostat Chart* on page 517.

#### Sheath Limit Sensors

|      |                                                            |
|------|------------------------------------------------------------|
| HJ = | Type J high-limit thermocouple, horizontal mount           |
| TJ = | Type J high-limit thermocouple, vertical/housing at top    |
| BJ = | Type J high-limit thermocouple, vertical/housing at bottom |
| HK = | Type K high-limit thermocouple, horizontal mount           |
| TK = | Type K high-limit thermocouple, vertical/housing at top    |
| BK = | Type K high-limit thermocouple, vertical/housing at bottom |

**Note:** Heater orientation is critical to accurate sensing of limit conditions. Use the appropriate code to indicate heater mounting orientation.

**Example Part Number:** BHC78C6 S 1 HJ

# Immersion Heaters



## WATROD™ and FIREBAR® Screw Plug Immersion Heaters

### WATROD™ Screw Plug with Control Assembly

Constructed from a WATROD screw plug heater, a moisture resistant terminal enclosure and built-in temperature sensor and power controller, this assembly comes pre-wired and ready for hook-up to any 120VAC control circuit.

Optional sheath materials, NPT screw plug sizes and materials, wattages, voltages and terminal enclosures extend application versatility.

### Performance Capabilities

- Watt densities up to 60 W/in<sup>2</sup> (9.3 W/cm<sup>2</sup>)
- Wattages up to 20 kilowatts
- Voltages up to 600VAC
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)

### Features and Benefits

**Three 0.475 in. (12 mm) diameter WATROD elements  
brazed to a 2 in. NPT brass screw plug**

- Produces a pressure-tight seal

**WATROD hairpins are repressed (recompacted)  
after bending**

- Maintains MgO density, dielectric strength, heat transfer and life

**Two built-in thermostats, one on-off with  
manual reset**

- Helps ensure safe operation by automatically cycling on and off when process or sheath temperatures reach a predetermined set point selectable from 30° to 250°F (0° to 120°C)

**Internal mechanical contactor**

- Works on a 120VAC control circuit to switch higher volts/amps to the heating elements

**Hinged, moisture resistant terminal enclosure  
has two conduit openings**

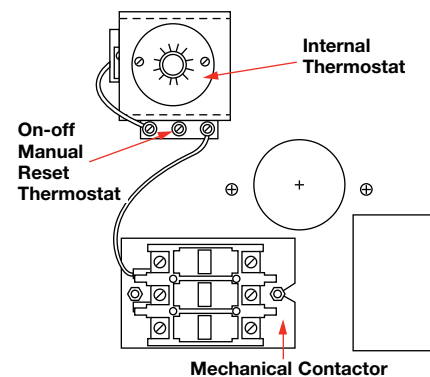
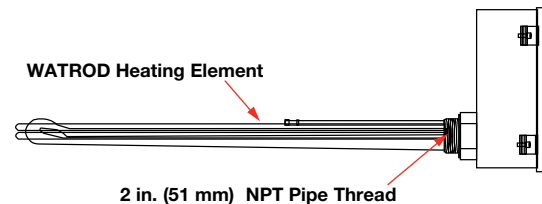
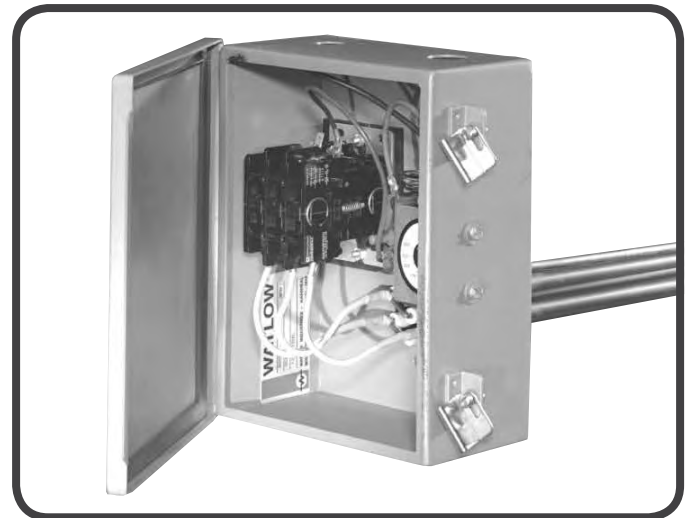
- Accommodates 3/4 in. (19 mm) NPT conduit fittings

**Terminal enclosures can be rotated to mate with  
existing conduits**

- Minimal fastener adjustment required

**Thermowells allow replacing the thermostat sensing  
element without draining the fluid being heated**

- Labor required to maintain and repair is minimized



### Typical Applications

- Water heating
- Commercial dishwashers and glass washers
- Sterilizing equipment

### Application Hints

Same as *Screw Plug Immersion Heaters*. See page 149 for details.

### Accessories

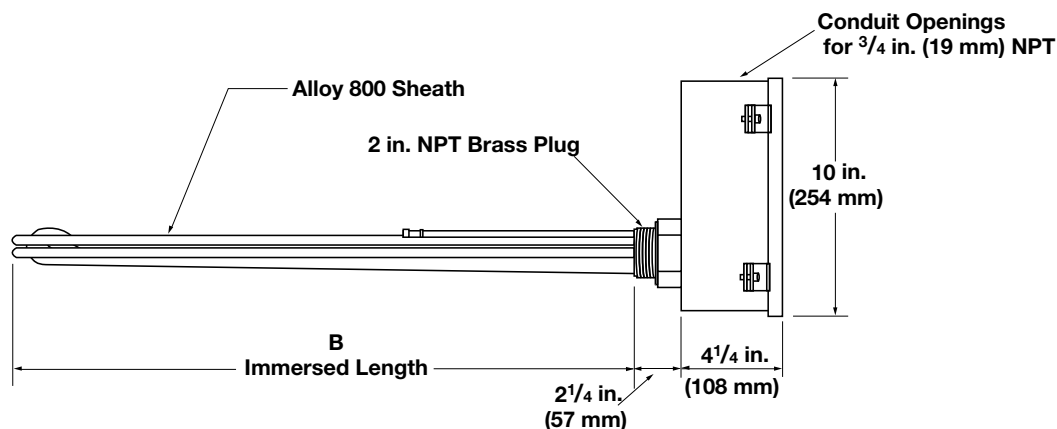
*Clamping Nut, Gasket and Washers*—for mounting to thin-wall tanks, use optional clamping nut, gasket and washers. To order, specify **NGW**.

# Immersion Heaters



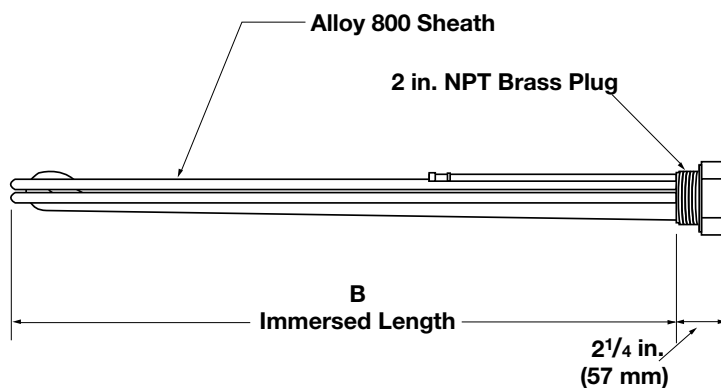
## WATROD and FIREBAR Screw Plug Immersion Heaters

### WATROD Screw Plug with Control Assembly (Continued)



### 2 in. NPT Brass Screw Plug With Control Box (Assembly Stock)

| WATROD Desc.             | kW | Immersed Length<br>in. (mm) | Part Number       |                   |                   |                   |                   | Est. Net Wt.<br>lbs (kg) |
|--------------------------|----|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------------|
|                          |    |                             | 208VAC<br>3-Phase | 240VAC<br>3-Phase | 380VAC<br>3-Phase | 480VAC<br>3-Phase | 575VAC<br>3-Phase |                          |
| 50 W/in <sup>2</sup>     | 9  | 24% (629.0)                 |                   | BHNB24N3W2C11     |                   | BHNB24N5W2C11     | BHNB24N16W2C11    | 23 (10)                  |
| Brass Plug               | 12 | 30 (762.0)                  | BHNB30A2W2C11     | BHNB30A3W2C11     | BHNB30A8W2C11     | BHNB30A5W2C11     | BHNB30A16W2C11    | 24 (11)                  |
| 3-Alloy 800              | 16 | 35% (904.8)                 | BHNB35L2W2C11     | BHNB35L3W2C11     | BHNB35L8W2C11     | BHNB35L5W2C11     | BHNB35L16W2C11    | 25 (11)                  |
| (7.8 W/cm <sup>2</sup> ) | 20 | 45% (1158.8)                |                   | BHNB45L3W2C11     | BHNB45L8W2C11     | BHNB45L5W2C11     | BHNB45L16W2C11    | 27 (12)                  |



### 2 in. NPT Brass Screw Plug With Control Box (Replacement Heater Only)

| WATROD Desc.             | kW | Immersed Length<br>in. (mm) | Part Number       |                   |                   |                   |                   | Est. Net Wt.<br>lbs (kg) |
|--------------------------|----|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------------|
|                          |    |                             | 208VAC<br>3-Phase | 240VAC<br>3-Phase | 380VAC<br>3-Phase | 480VAC<br>3-Phase | 575VAC<br>3-Phase |                          |
| 50 W/in <sup>2</sup>     | 9  | 24% (628.7)                 |                   | BHNB24N3          |                   | BHNB24N5          | BHNB24N16         | 21 (9)                   |
| Brass Plug               | 12 | 30 (762.0)                  | BHNB30A2          | BHNB30A3          | BHNB30A8          | BHNB30A5          | BHNB30A16         | 22 (10)                  |
| Alloy 800                | 16 | 35% (904.8)                 | BHNB35L2          | BHNB35L3          | BHNB35L8          | BHNB35L5          | BHNB35L16         | 23 (10)                  |
| (7.8 W/cm <sup>2</sup> ) | 20 | 45% (1158.8)                |                   | BHNB45L3          | BHNB45L8          | BHNB45L5          | BHNB45L16         | 25 (11)                  |



# Immersion Heaters



## WATROD™ ANSI Flange Immersion Heaters

Watlow® flange heaters are easy to install and maintain. Designed for heating liquids and gases in tanks and pressure vessels, flange immersion heaters are ideal for applications requiring higher kilowatts.

Watlow flange heaters are made with WATROD tubular elements brazed or welded to a flange. Stock flange heaters are equipped with a general purpose terminal enclosure.

### Performance Capabilities

- Watt densities up to 100 W/in<sup>2</sup> (15.5 W/cm<sup>2</sup>)
- Wattages up to three megawatts
- UL® and CSA component recognition up to 600VAC
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)
- Passivated 316 stainless steel sheath temperatures up to 1200°F (650°C)
- 304 stainless steel sheath temperatures up to 1200°F (650°C)
- Steel sheath temperatures up to 750°F (400°C)

### Features and Benefits

#### ANSI and ANSI compatible 2, 2½, 3 thru 48 inch flanges

- Provides appropriate heater size-to-application and fit

#### Element sheath and flange materials

- Meets your application needs

#### Integral thermowells

- Provides convenient temperature sensor insertion and replacement without draining the fluid being heated

#### Standard, general purpose terminal enclosure

- Offers easy access to wiring

#### Element support(s)

- Provides proper element spacing to maximize heater performance and life

#### All units are inspected and/or tested

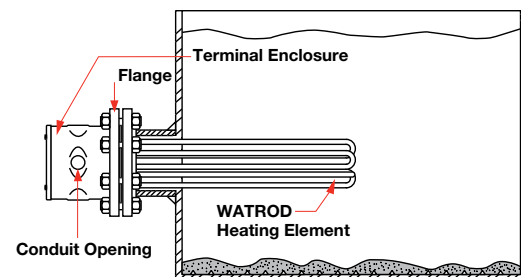
- Ensures element-to-flange pressure seals do not leak

#### Drilled and tapped eyebolt holes or lift lugs for eye bolts on three inch and larger flange heaters

- Facilitates lifting during installation

#### WATROD hairpins are repressed (recompacted)

- Provides improved heater life, insulation resistance and heat transfer



#### Branch circuits are designed for 48 amperes per circuit maximum

- Reduces risk of failure due to excessive temperatures generated by high amperage

#### UL® and CSA component recognition under file numbers E52951 and 31388 respectively

- Simplifies obtaining third-party recognition for assembly

# Immersion Heaters



## WATROD ANSI Flange Immersion Heaters

### Typical Applications

- Water:
  - Deionized
  - Demineralized
  - Clean
  - Potable
  - Process
- Industrial water rinse tanks
- Vapor degreasers
- Hydraulic oil, crude, asphalt
- Lubricating oils at API specified watt densities
- Air and gas flow
- Caustic solutions
- Chemical baths
- Process air equipment
- Boiler equipment
- Freeze protection of any fluid
- Anti-freeze (glycol) solutions
- Paraffin

### Options

#### WATCONNECT® Standard Control Panels



WATCONNECT® standard control panels are configured to work with Watlow's ANSI flange immersion heaters. They are quickly configured for process heating applications and delivered within two weeks. WATCONNECT panels integrate Watlow's high-quality heater, sensor, temperature

controller and power controller products for a complete thermal solution. Normally, competitive custom panels require significantly longer lead times. The broad range of standard features allow customers to quickly configure panels for each process heater included in this catalog.

#### Features and Benefits

##### Lead times of two weeks or less

- Provides faster delivery than competition

##### Full documentation provided for WATCONNECT control panels at the time of quotation

- Eliminates lengthy approval process and phone calls

##### Incorporates Watlow's temperature and power controllers

- Provides a turnkey solution for process heating applications

##### Range of standard input/output (I/O) options

- Provides the user with a higher level of monitoring and control assuring an efficient and safe operation

##### WATCONNECT enclosure easily mounts to wall or frame

- Decreases installation time

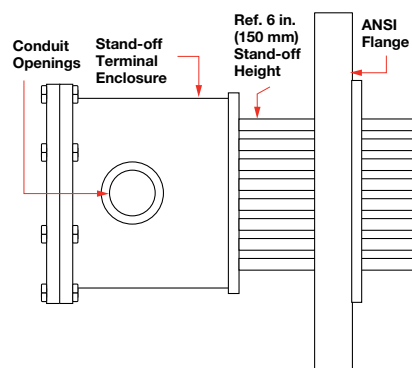
### Options (Continued)

**Note:** The WATCONNECT part number associated with a heater is only a suggestion. The following installation details need to be compared to panel capabilities to assure a compatible match:

- Minimum and maximum ambient temperature where panel will be installed
- Statutory and regulatory requirements at installation site
- Sun loading, if any, at installation site
- Presence of any hazardous gases, dusts or fibers, if any
- Verification of process sensor type
- Verification of limit sensor type
- Input/Output (I/O) requirements

For additional product information see the **WATCONNECT landing page at [www.watlow.com/watconnect](http://www.watlow.com/watconnect)**. On the WATCONNECT landing page you will find a complete specification sheet along with other tools to help you properly select your control panel. If you would like to know the specific configuration of a WATCONNECT part number, please use the Product Configuration Lookup Tool on Watlow.com.

### Stand-off Terminal Enclosures



Stand-off terminal enclosures provide an air-insulating barrier between the flange and terminal enclosure by mounting the terminations and wiring away from the flange. Stand-off terminal enclosures are recommended whenever a process operating temperature exceeds 210°F (100°C). This helps minimize terminal enclosure temperatures.

To order, specify **stand-off terminal enclosure**.



WATROD ANSI Flange  
Immersion Heaters

Options (Continued)

Terminal Enclosures

General purpose terminal enclosures, without thermostats, are standard on all flange immersion heaters. Optional terminal enclosures include:

- General purpose with a single or double-pole thermostat
- Moisture resistant—available with or without a single- or double-pole thermostat
- Corrosion resistant—available with or without a single- or double-pole thermostat
- Non-certified, explosion and moisture resistant combination suitable for use in non-classified areas only—available with or without a single- or double-pole thermostat

Prior to ordering, refer to the terminal enclosure dimensions on page 226. Order by adding the appropriate suffix letter(s) to the base flange heater part number, as shown on the ordering information chart. Heater part numbers and suffix letters are depicted on the charts, pages 227 to 280. Specify class and group, if applicable.



Caution

Certified explosion proof and/or flame proof terminal enclosures are intended to provide explosion containment in the electrical termination/wiring enclosure only. No portion of the assembly outside of this enclosure is covered under this rating. Rating effectiveness may be compromised by abuse or misapplication.

Thermostats

To provide process temperature control, Watlow offers optional single pole, single throw (SPST) and double pole, single throw (DPST) thermostats.

Unless otherwise specified, thermostats are mounted inside the terminal enclosure. For details and ordering information, refer to *Thermostats* on pages 514 to 518.

Certified Enclosures

CSA, ATEX or IECEx certified enclosures protect wiring in hazardous gas environments. These terminal enclosures, covered under CSA file number 61707, ATEX certificate # SIRA 10ATEX1155X or IECEx certificate # IECEx CSA 09.0010X are available on WATROD flange heaters. For additional information, see page 561 and 562 or contact your Watlow representative.

For products that will be installed in hazardous locations, please provide the following information:

- Operating conditions
- Minimum and maximum ambient temperatures for the installation location
- Mounting orientation
- Process temperature (°F)
- Maximum working pressure (MWP) of application (psig)
- Media being heated

Watlow must understand this information so that an appropriate design can be provided.

ASME Pressure Vessel Code Welding

Flange assemblies can be provided with an ASME Section VIII, Div. I pressure vessel stamp upon request.

Wattages and Voltages

Watlow routinely supplies flange immersion heaters with 240 to 480VAC as well as wattages from 150 watts to one megawatt.

Sheath Materials

The following sheath materials are available on WATROD flange heaters:

Standard Sheath Materials

|        |                   |
|--------|-------------------|
| WATROD | Alloy 800, 840    |
|        | 316 SS            |
|        | Copper clad steel |
|        | Steel             |

Exotic Sheath Materials

Contact your Watlow representative for details and availability.

# Immersion Heaters



## WATROD ANSI Flange Immersion Heaters

### Options (Continued)

#### Thermocouples

ASTM Type J or K thermocouples offer more accurate sensing of process and/or sheath temperatures. A thermocouple may be inserted into the thermowell or attached to the heater's sheath.

Thermocouples are standardly supplied with 120 in. (3050 mm) leads. Unless otherwise specified, thermocouples are supplied with temperature ranges detailed on the *Thermocouple Types* chart.

Using a thermocouple requires an appropriate temperature and power controller. These must be purchased separately. Watlow offers a wide variety of temperature and power controllers to meet virtually all applications. Temperature controllers can be configured to accept process variable inputs, too. Contact your Watlow representative for details.

To order, specify **Type J** or **K** thermocouple and indicate if the thermocouple is for **process temperature sensing** or heater sheath **high-limit protection**. Please specify if the flange heater will be mounted **vertical** or **horizontal** in the tank. **If vertical, specify if the housing is on top or bottom.**

If the flange heater is part of an in-line circulation heating application, indicate flow direction relative to the heater's enclosure.

#### Thermocouple Types

| ASTM Type | Conductor Characteristics Positive | Conductor Characteristics Negative | Recommended <sup>①</sup> Temperature Range °F (°C) |
|-----------|------------------------------------|------------------------------------|----------------------------------------------------|
| J         | Iron (Magnetic)                    | Constantan (Non-magnetic)          | 0 to 1000 (-20 to 540)                             |
| K         | Chromel® (Non-magnetic)            | Alumel® (Magnetic)                 | 0 to 2000 (-20 to 1100)                            |

① Type J and Type K thermocouples are rated 32 to 1382°F and 32 to 2282°F (0-750°C and 0-1250°C), respectively. Watlow does not recommend exceeding temperature ranges shown on this chart for the tubular product line.

#### Flanges

##### Flange Sizes and Styles

**Standard:** 2<sup>①</sup>, 2<sup>1/2</sup><sup>①</sup>, 3 to 14 inch ANSI raised face/blind flanges.

**Made-to-Order:** 16 to 48 inch in any recognized configuration, as well as customer specified. Over 48 inch ANSI flange, contact your Watlow representative.

##### Flange Materials

|          |              |
|----------|--------------|
| Standard | Carbon steel |
|          | 316 SS       |
|          | 304 SS       |

##### Pressure Classes

|          |        |
|----------|--------|
| Standard | 150 lb |
|          | 300 lb |

① ANSI bolt pattern only

#### Gaskets

Rubber, asbestos-free and spiral wound gaskets are available for all flange sizes. Order by specifying gasket type, flange size/rating, process operating temperature and pressure.

To make the correct selection, see the *Gasket Selection* chart. It provides a recommended gasket type and effective temperature rating.

To use this chart, multiply operating temperature by the operating pressure to arrive at "Maximum PSIG x °F." This is listed in the chart's first column.

##### Gasket Selection

| Maximum PSIG x °F | Gasket Temperature °F | Gasket Type   |
|-------------------|-----------------------|---------------|
| Up to 15,000      | 300                   | Rubber        |
| Over 250,000      | 700                   | Asbestos-Free |
| Over 250,000      | ③                     | Spiral Wound  |

③ Depends on metal gasket material.

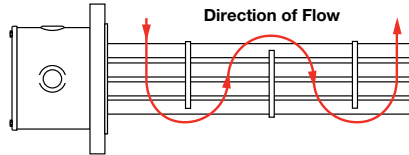
# Immersion Heaters



## WATROD ANSI Flange Immersion Heaters

### Options (Continued)

#### Baffles



For forced circulation applications, 316 stainless steel baffles can be arranged on the heating element bundle to enhance and/or modify fluid or gas flow for better heat transfer.

For open tank or convection heating applications, standard element supports will be supplied.

To order, specify:

- Baffles
- Inlet and outlet orientation
- Inlet location in relation to flange, (Inlet near flange or Inlet away from flange)

#### External Finishing

##### Passivation

During the manufacturing process, particles of iron or tool steel may become embedded in the stainless steel or alloy sheath. If not removed, these particles may corrode, produce rust spots and/or contaminate the process. For critical sheath applications, passivation will remove free iron from the sheath. To order, specify **passivation**.

##### Other Finishes

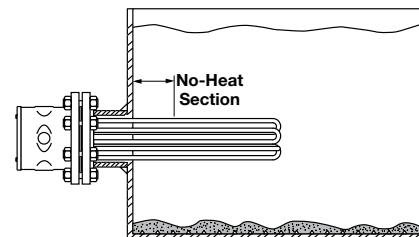
Bright annealing available to meet cosmetic demands.

#### ANSI Raised Face Blind Flange, 150# Class Dimensions

| Pipe Size | Outside Diameter | Flange Thickness | Diameter of Bolt Circle | Diameter of Bolt Holes | Number of Bolt Holes |
|-----------|------------------|------------------|-------------------------|------------------------|----------------------|
| 3         | 7.50             | 0.94             | 6.00                    | 0.75                   | 4                    |
| 4         | 9.00             | 0.94             | 7.50                    | 0.75                   | 8                    |
| 5         | 10.00            | 0.94             | 8.50                    | 0.88                   | 8                    |
| 6         | 11.00            | 1.00             | 9.50                    | 0.88                   | 8                    |
| 8         | 13.50            | 1.12             | 11.75                   | 0.88                   | 8                    |
| 10        | 16.00            | 1.19             | 14.25                   | 1.00                   | 12                   |
| 12        | 19.00            | 1.25             | 17.00                   | 1.00                   | 12                   |
| 14        | 21.00            | 1.38             | 18.75                   | 1.12                   | 12                   |
| 16        | 23.50            | 1.44             | 21.25                   | 1.12                   | 16                   |
| 18        | 25.00            | 1.56             | 22.75                   | 1.25                   | 16                   |
| 20        | 27.50            | 1.69             | 25.00                   | 1.25                   | 20                   |
| 24        | 32.00            | 1.88             | 29.50                   | 1.38                   | 20                   |

#### Application Hints

- Select the recommended heating element sheath material and watt density for the substance being heated. Use the *Supplemental Applications Chart* on pages 550 to 553. If unable to determine the correct heating element sheath material and type, contact your Watlow representative.
- Extend the element no-heat section completely into the fluid being heated to help prevent premature heater failure. See accompanying illustration for proper no-heat section placement.
- Locate flange heater low in the tank, but above the sludge level.
- Ensure wiring integrity by keeping terminal enclosure temperature below 400°F (205°C).
- Size power feeder wires in accordance with National Electrical Code guidelines and other applicable codes.
- Keep electrical connections clean, dry and tight.
- Minimize problems associated with low liquid level conditions by using low liquid level sensor or sheath temperature high-limit control.



- Periodically remove the flange assembly to inspect and clean the heating element(s). This preventive maintenance will reduce premature failure and optimize heater performance.

# Immersion Heaters

**EXTENDED  
CAPABILITY**



## Extended Capabilities for WATROD ANSI Flange Immersion Heaters

### Options

#### Enclosure Enhancements

- Enclosure heater to solve condensation and freeze problems.
- Power distribution blocks to facilitate power feed line wiring.

#### RTDs

If the process requires greater temperature sensing accuracy than is possible with thermocouples, Watlow can also supply RTDs in DIN or JIS calibrations. Contact your Watlow representative for details.

#### Wattages and Voltages

If required, Watlow will make heaters with voltage up to 600VAC and wattage beyond one megawatt. For more information on special voltage and wattage configurations, contact your Watlow representative.

#### Sheath Materials

The following sheath materials are available on WATROD flange heaters:

##### Extended Sheath Materials

|               |                                                                                       |
|---------------|---------------------------------------------------------------------------------------|
| <b>WATROD</b> | Titanium<br>304 and 321 SS<br>Hastelloy C276<br>Alloy 600<br>Inconel®/Steel<br>Monel® |
|---------------|---------------------------------------------------------------------------------------|

#### Flanges

##### Flange Materials

|                 |                                                       |
|-----------------|-------------------------------------------------------|
| <b>Extended</b> | Exotic materials to meet specific application needs ① |
|-----------------|-------------------------------------------------------|

##### Pressure Classes

|                 |               |
|-----------------|---------------|
| <b>Extended</b> | Over 300 lb ① |
|-----------------|---------------|

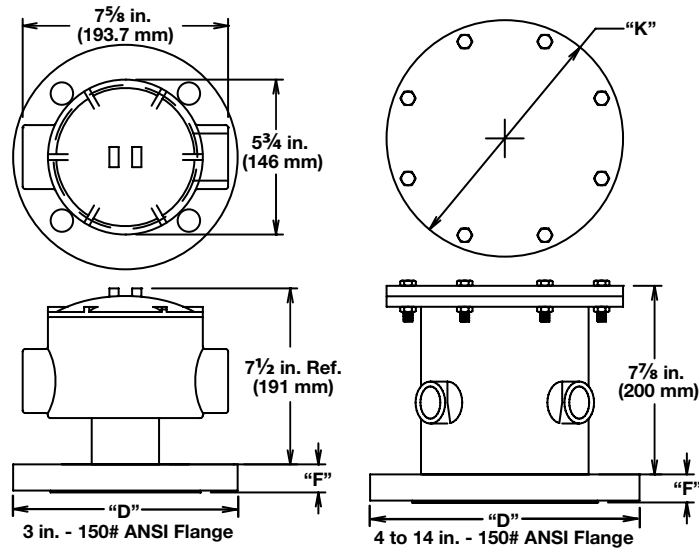
① Contact your Watlow representative

# Immersion Heaters



## WATROD ANSI Flange Immersion Heaters

### Optional CSA Type 4/Explosion Proof Enclosure Without Thermostat



### Terminal Enclosure Dimensions

#### General Purpose or NEMA 4 Enclosure

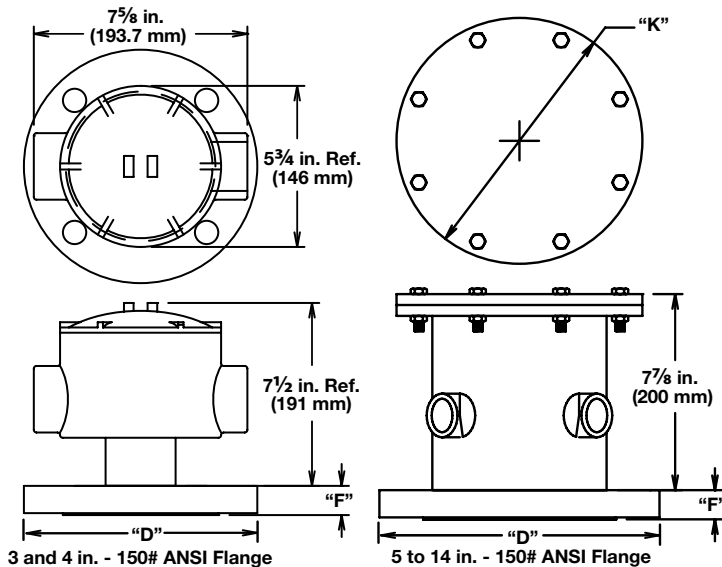
| ANSI Flange Size in. | "F" Thickness in. (mm) | "K" With Thermostat | "K" Without Thermostat | "D" in. (mm) |
|----------------------|------------------------|---------------------|------------------------|--------------|
| 3                    | 15/16 (23.8)           | 5 3/4 (146)         | See heater dwg.        | 7 1/2 (191)  |
| 4                    | 15/16 (23.8)           | 5 3/4 (146)         | See heater dwg.        | 9 (229)      |

**Note:** 5 thru 12 in. (127 thru 305 mm) flange dimensions are on catalog heater drawings.

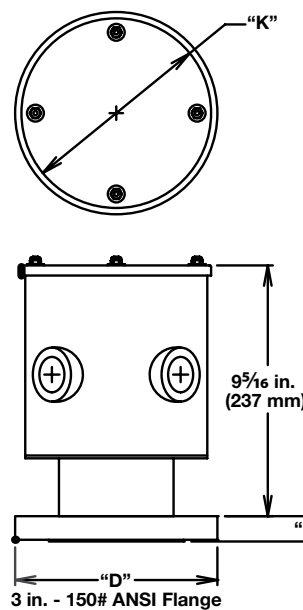
#### CSA Type 4/Explosion Proof Enclosures

| ANSI Flange Size in. | "F" Thickness in. (mm) | "K" With Thermostat | "K" Without Thermostat | "D" in. (mm) |
|----------------------|------------------------|---------------------|------------------------|--------------|
| 3                    | 15/16 (23.8)           | N/A                 | N/A                    | 7 1/2 (191)  |
| 4                    | 15/16 (23.8)           | N/A                 | 7 7/8 (200.0)          | 9 (229)      |
| 5                    | 15/16 (23.8)           | 8 7/8 (225.4)       | 8 7/8 (225.4)          | 10 (254)     |
| 6                    | 1 (25.0)               | 9 7/8 (250.8)       | 9 7/8 (250.8)          | 11 (280)     |
| 8                    | 1 1/8 (28.6)           | 12 1/8 (308.0)      | 12 1/8 (308.0)         | 13 1/2 (343) |
| 10                   | 1 3/16 (30.2)          | 14 5/8 (371.5)      | 14 5/8 (371.5)         | 16 (407)     |
| 12                   | 1 1/4 (32.0)           | 17 1/4 (438.0)      | 17 1/4 (438.0)         | 19 (483)     |
| 14                   | 1 3/8 (34.9)           | 19 3/8 (492.1)      | 19 3/8 (492.1)         | 21 (534)     |

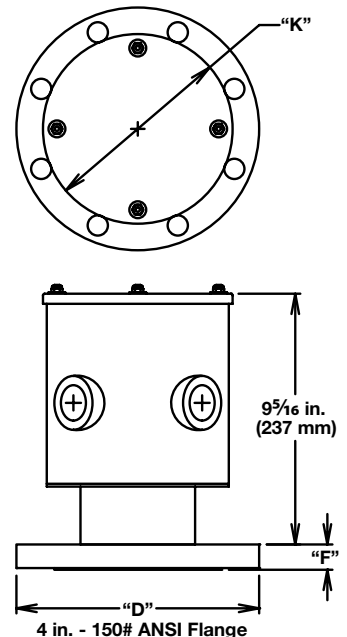
### Optional CSA Type 4/Explosion Proof Enclosure With Thermostat



### Optional General Purpose/or NEMA 4 Enclosure With Thermostat



### Optional NEMA 4 Enclosure With Thermostat



**To order:** Reference the *Ordering Information* on page 281.

**Note:** Dimensions for all 5 to 14 in. flange heaters with General Purpose or NEMA 4 Enclosure with thermostats are identical to units supplied without thermostats.



# Immersion Heaters



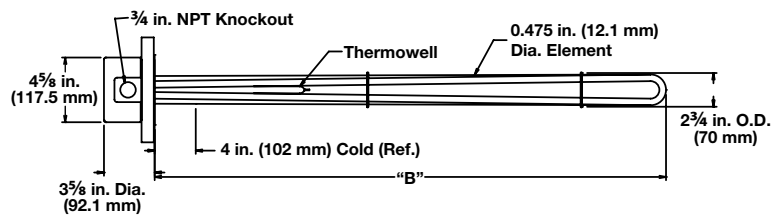
## WATROD ANSI Flange Immersion Heaters



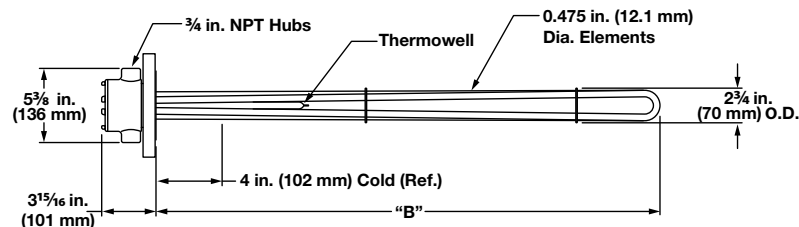
### Application: Clean Water

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

### General Purpose



### NEMA 4 Enclosure



| Description                                                                                         | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part Number                  | Part Number         | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                     |       |      |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>Steel Flange<br/>3-Alloy 800<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)</b> | 120   | 6.0  | 1  | 15 1/2 (394)         | 22 (10)              | FMN715J10S                   | FMN715J10W          | C/F                       | C/F           |
|                                                                                                     | 240   | 6.0  | 3  | 15 1/2 (394)         | 22 (10)              | FMN715J3S                    | FMN715J3W           | C2-50                     | C2-92         |
|                                                                                                     | 480   | 6.0  | 1  | 15 1/2 (394)         | 22 (10)              | FMN715J11S                   | FMN715J11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 6.0  | 3  | 15 1/2 (394)         | 22 (10)              | FMN715J5S                    | FMN715J5W           | C2-43                     | C2-35         |
|                                                                                                     | 120   | 9.0  | 1  | 21 1/2 (546)         | 25 (12)              | FMN721J10S                   | FMN721J10W          | C/F                       | C/F           |
|                                                                                                     | 240   | 9.0  | 3  | 21 1/2 (546)         | 25 (12)              | FMN721J3S                    | FMN721J3W           | C2-50                     | C2-92         |
|                                                                                                     | 480   | 9.0  | 1  | 21 1/2 (546)         | 25 (12)              | FMN721J11S                   | FMN721J11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 9.0  | 3  | 21 1/2 (546)         | 25 (12)              | FMN721J5S                    | FMN721J5W           | C2-43                     | C2-35         |
|                                                                                                     | 240   | 12.0 | 3  | 27 (686)             | 27 (13)              | FMN727A3S                    | FMN727A3W           | C2-236                    | C2-214        |
|                                                                                                     | 480   | 12.0 | 1  | 27 (686)             | 27 (13)              | FMN727A11S                   | FMN727A11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 12.0 | 3  | 27 (686)             | 27 (13)              | FMN727A5S                    | FMN727A5W           | C2-43                     | C2-35         |
|                                                                                                     | 240   | 15.0 | 3  | 32 1/2 (826)         | 28 (13)              | FMN732J3S                    | FMN732J3W           | C2-236                    | C2-214        |
|                                                                                                     | 480   | 15.0 | 1  | 32 1/2 (826)         | 28 (13)              | FMN732J11S                   | FMN732J11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 15.0 | 3  | 32 1/2 (826)         | 28 (13)              | FMN732J5S                    | FMN732J5W           | C2-43                     | C2-35         |
|                                                                                                     | 240   | 18.0 | 3  | 38 (965)             | 30 (14)              | FMN738A3S                    | FMN738A3W           | C2-236                    | C2-236        |
|                                                                                                     | 480   | 18.0 | 1  | 38 (965)             | 30 (14)              | FMN738A11S                   | FMN738A11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 18.0 | 3  | 38 (965)             | 30 (14)              | FMN738A5S                    | FMN738A5W           | C2-43                     | C2-35         |
|                                                                                                     | 480   | 25.0 | 1  | 51 (1295)            | 34 (16)              | FMN751A11S                   | FMN751A11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 25.0 | 3  | 51 (1295)            | 34 (16)              | FMN751A5S                    | FMN751A5W           | C2-225                    | C2-226        |
|                                                                                                     | 480   | 30.0 | 1  | 60 1/2 (1537)        | 36 (17)              | FMN760J11S                   | FMN760J11W          | C/F                       | C/F           |
|                                                                                                     | 480   | 30.0 | 3  | 60 1/2 (1537)        | 36 (17)              | FMN760J5S                    | FMN760J5W           | C2-225                    | C2-226        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



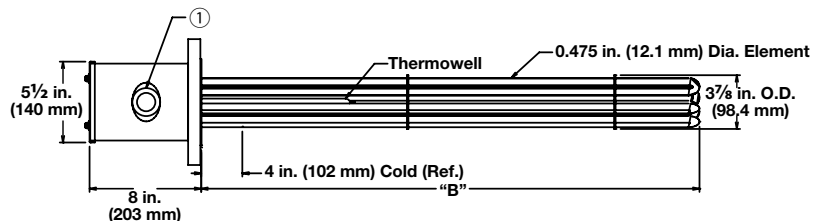
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 4 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                         | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                     |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup> Steel Flange 6-Alloy 800 Elements (9.3 W/cm<sup>2</sup>)</b> | 240   | 12.0 | 1  | 2       | 15 1/2 (394)      | 31 (14)           | FON715J10S                | FON715J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 12.0 | 3  | 1       | 15 1/2 (394)      | 31 (14)           | FON715J3S                 | FON715J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 12.0 | 1  | 1       | 15 1/2 (394)      | 31 (14)           | FON715J11S                | FON715J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 12.0 | 3  | 1       | 15 1/2 (394)      | 31 (14)           | FON715J5S                 | FON715J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 18.0 | 1  | 2       | 21 1/2 (546)      | 34 (16)           | FON721J10S                | FON721J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 18.0 | 3  | 1       | 21 1/2 (546)      | 34 (16)           | FON721J3S                 | FON721J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 18.0 | 1  | 1       | 21 1/2 (546)      | 34 (16)           | FON721J11S                | FON721J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 18.0 | 3  | 1       | 21 1/2 (546)      | 34 (16)           | FON721J5S                 | FON721J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 24.0 | 1  | 2       | 27 (686)          | 36 (17)           | FON727A10S                | FON727A10W       | C/F                    | C/F        |
|                                                                                     | 240   | 24.0 | 3  | 2       | 27 (686)          | 36 (17)           | FON727A3S                 | FON727A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 24.0 | 1  | 1       | 27 (686)          | 36 (17)           | FON727A11S                | FON727A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 24.0 | 3  | 1       | 27 (686)          | 36 (17)           | FON727A5S                 | FON727A5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 30.0 | 3  | 2       | 32 1/2 (826)      | 39 (18)           | FON732J3S                 | FON732J3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 30.0 | 1  | 2       | 32 1/2 (826)      | 39 (18)           | FON732J11S                | FON732J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 30.0 | 3  | 1       | 32 1/2 (826)      | 39 (18)           | FON732J5S                 | FON732J5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 36.0 | 3  | 2       | 38 (965)          | 43 (20)           | FON738A3S                 | FON738A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 36.0 | 1  | 2       | 38 (965)          | 43 (20)           | FON738A11S                | FON738A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 36.0 | 3  | 1       | 38 (965)          | 43 (20)           | FON738A5S                 | FON738A5W        | C2-225                 | C2-226     |
|                                                                                     | 480   | 50.0 | 3  | 2       | 51 (1295)         | 48 (22)           | FON751A5S                 | FON751A5W        | C2-229                 | C2-230     |
|                                                                                     | 480   | 60.0 | 3  | 2       | 60 1/2 (1537)     | 52 (24)           | FON760J5S                 | FON760J5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



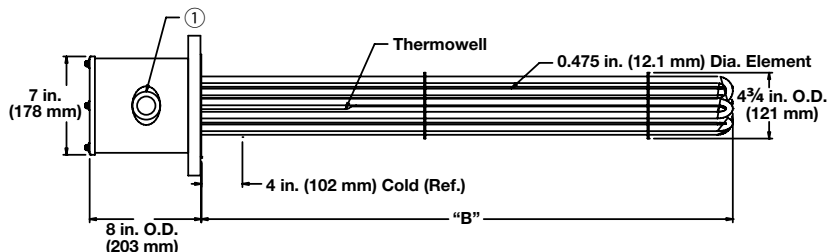
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 5 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                         | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                     |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup> Steel Flange 6-Alloy 800 Elements (9.3 W/cm<sup>2</sup>)</b> | 240   | 12.0 | 1  | 2       | 15 1/2 (394)      | 35 (16)           | FNN715J10S                | FNN715J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 12.0 | 3  | 1       | 15 1/2 (394)      | 35 (16)           | FNN715J3S                 | FNN715J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 12.0 | 1  | 1       | 15 1/2 (394)      | 35 (16)           | FNN715J11S                | FNN715J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 12.0 | 3  | 1       | 15 1/2 (394)      | 35 (16)           | FNN715J5S                 | FNN715J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 18.0 | 1  | 2       | 21 1/2 (546)      | 38 (18)           | FNN721J10S                | FNN721J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 18.0 | 3  | 1       | 21 1/2 (546)      | 38 (18)           | FNN721J3S                 | FNN721J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 18.0 | 1  | 1       | 21 1/2 (546)      | 38 (18)           | FNN721J11S                | FNN721J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 18.0 | 3  | 1       | 21 1/2 (546)      | 38 (18)           | FNN721J5S                 | FNN721J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 24.0 | 1  | 3       | 27 (686)          | 40 (19)           | FNN727A10S                | FNN727A10W       | C/F                    | C/F        |
|                                                                                     | 240   | 24.0 | 3  | 2       | 27 (686)          | 40 (19)           | FNN727A3S                 | FNN727A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 24.0 | 1  | 3       | 27 (686)          | 40 (19)           | FNN727A11S                | FNN727A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 24.0 | 3  | 1       | 27 (686)          | 40 (19)           | FNN727A5S                 | FNN727A5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 30.0 | 3  | 2       | 32 1/2 (826)      | 43 (20)           | FNN732J3S                 | FNN732J3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 30.0 | 1  | 2       | 32 1/2 (826)      | 43 (20)           | FNN732J11S                | FNN732J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 30.0 | 3  | 1       | 32 1/2 (826)      | 43 (20)           | FNN732J5S                 | FNN732J5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 36.0 | 3  | 2       | 38 (965)          | 47 (22)           | FNN738A3S                 | FNN738A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 36.0 | 1  | 2       | 38 (965)          | 47 (22)           | FNN738A11S                | FNN738A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 36.0 | 3  | 1       | 38 (965)          | 47 (22)           | FNN738A5S                 | FNN738A5W        | C2-224                 | C2-226     |
|                                                                                     | 480   | 50.0 | 3  | 2       | 51 (1295)         | 52 (24)           | FNN751A5S                 | FNN751A5W        | C2-229                 | C2-230     |
|                                                                                     | 480   | 60.0 | 3  | 2       | 60 1/2 (1537)     | 56 (26)           | FNN760J5S                 | FNN760J5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



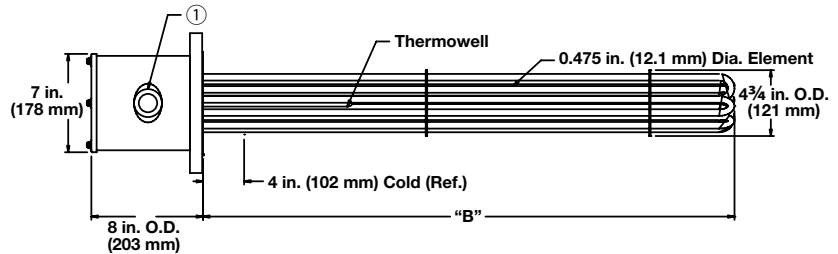
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 5 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                         | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                     |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup> Steel Flange 9-Alloy 800 Elements (9.3 W/cm<sup>2</sup>)</b> | 240   | 18.0 | 1  | 3       | 15 1/2 (394)      | 38 (18)           | FNN715J10XS               | FNN715J10XW      | C/F                    | C/F        |
|                                                                                     | 240   | 18.0 | 3  | 1       | 15 1/2 (394)      | 38 (18)           | FNN715J3XS                | FNN715J3XW       | C2-236                 | C2-214     |
|                                                                                     | 480   | 18.0 | 1  | 1       | 15 1/2 (394)      | 38 (18)           | FNN715J11XS               | FNN715J11XW      | C/F                    | C/F        |
|                                                                                     | 480   | 18.0 | 3  | 1       | 15 1/2 (394)      | 38 (18)           | FNN715J5XS                | FNN715J5XW       | C2-43                  | C2-35      |
|                                                                                     | 240   | 27.0 | 1  | 3       | 21 1/2 (546)      | 42 (19)           | FNN721J10XS               | FNN721J10XW      | C/F                    | C/F        |
|                                                                                     | 240   | 27.0 | 3  | 3       | 21 1/2 (546)      | 42 (19)           | FNN721J3XS                | FNN721J3XW       | C4-143                 | C4-142     |
|                                                                                     | 480   | 27.0 | 1  | 3       | 21 1/2 (546)      | 42 (19)           | FNN721J11XS               | FNN721J11XW      | C/F                    | C/F        |
|                                                                                     | 480   | 27.0 | 3  | 1       | 21 1/2 (546)      | 42 (19)           | FNN721J5XS                | FNN721J5XW       | C2-225                 | C2-226     |
|                                                                                     | 240   | 36.0 | 3  | 3       | 27 (686)          | 45 (21)           | FNN727A3XS                | FNN727A3XW       | C4-144                 | C4-145     |
|                                                                                     | 480   | 36.0 | 1  | 3       | 27 (686)          | 45 (21)           | FNN727A11XS               | FNN727A11XW      | C/F                    | C/F        |
|                                                                                     | 480   | 36.0 | 3  | 1       | 27 (686)          | 45 (21)           | FNN727A5XS                | FNN727A5XW       | C2-225                 | C2-226     |
|                                                                                     | 240   | 45.0 | 3  | 3       | 32 1/2 (826)      | 48 (22)           | FNN732J3XS                | FNN732J3XW       | C4-144                 | C4-145     |
|                                                                                     | 480   | 45.0 | 1  | 3       | 32 1/2 (826)      | 48 (22)           | FNN732J11XS               | FNN732J11XW      | C/F                    | C/F        |
|                                                                                     | 480   | 45.0 | 3  | 3       | 32 1/2 (826)      | 48 (22)           | FNN732J5XS                | FNN732J5XW       | C4-150                 | C4-151     |
|                                                                                     | 240   | 54.0 | 3  | 3       | 38 (965)          | 53 (24)           | FNN738A3XS                | FNN738A3XW       | C4-144                 | C4-145     |
|                                                                                     | 480   | 54.0 | 1  | 3       | 38 (965)          | 53 (24)           | FNN738A11XS               | FNN738A11XW      | C/F                    | C/F        |
|                                                                                     | 480   | 54.0 | 3  | 3       | 38 (965)          | 53 (24)           | FNN738A5XS                | FNN738A5XW       | C4-150                 | C4-151     |
|                                                                                     | 480   | 75.0 | 3  | 3       | 51 (1295)         | 60 (28)           | FNN751A5XS                | FNN751A5XW       | C4-152                 | C4-153     |
|                                                                                     | 480   | 90.0 | 3  | 3       | 60 1/2 (1537)     | 66 (30)           | FNN760J5XS                | FNN760J5XW       | C4-152                 | C4-153     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



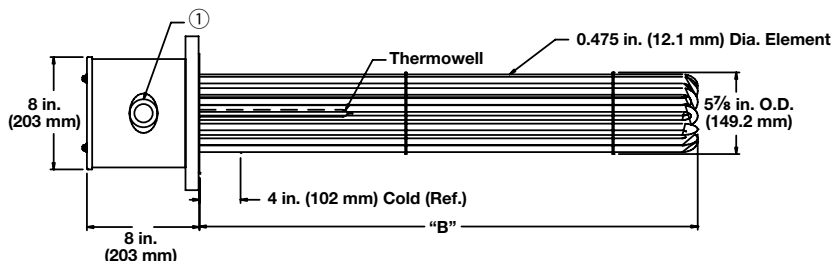
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 6 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|--------------------------------------------------------------------------------------|-------|-------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                      |       |       |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup> Steel Flange 12-Alloy 800 Elements (9.3 W/cm<sup>2</sup>)</b> | 240   | 24.0  | 1  | 3       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 73 (33)           | FPN715G10S                | FPN715G10W       | C/F                    | C/F        |
|                                                                                      | 240   | 24.0  | 3  | 2       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 73 (33)           | FPN715G3S                 | FPN715G3W        | C2-218                 | C2-224     |
|                                                                                      | 480   | 24.0  | 1  | 2       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 73 (33)           | FPN715G11S                | FPN715G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 24.0  | 3  | 1       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 73 (33)           | FPN715G5S                 | FPN715G5W        | C2-225                 | C2-226     |
|                                                                                      | 240   | 36.0  | 1  | 4       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 78 (36)           | FPN721G10S                | FPN721G10W       | C/F                    | C/F        |
|                                                                                      | 240   | 36.0  | 3  | 2       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 78 (36)           | FPN721G3S                 | FPN721G3W        | C2-218                 | C2-224     |
|                                                                                      | 480   | 36.0  | 1  | 2       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 78 (36)           | FPN721G11S                | FPN721G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 36.0  | 3  | 1       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 78 (36)           | FPN721G5S                 | FPN721G5W        | C2-225                 | C2-226     |
|                                                                                      | 240   | 48.0  | 3  | 4       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 81 (37)           | FPN726R3S                 | FPN726R3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 48.0  | 1  | 3       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 81 (37)           | FPN726R11S                | FPN726R11W       | C/F                    | C/F        |
|                                                                                      | 480   | 48.0  | 3  | 2       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 81 (37)           | FPN726R5S                 | FPN726R5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 60.0  | 3  | 4       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 85 (39)           | FPN732G3S                 | FPN732G3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 60.0  | 1  | 3       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 85 (39)           | FPN732G11S                | FPN732G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 60.0  | 3  | 2       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 85 (39)           | FPN732G5S                 | FPN732G5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 72.0  | 3  | 4       | 37 <sup>7</sup> / <sub>8</sub> (962.0)  | 92 (42)           | FPN737R3S                 | FPN737R3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 72.0  | 3  | 2       | 37 <sup>7</sup> / <sub>8</sub> (962.0)  | 92 (42)           | FPN737R5S                 | FPN737R5W        | C2-229                 | C2-230     |
|                                                                                      | 480   | 100.0 | 3  | 4       | 50 <sup>7</sup> / <sub>8</sub> (1292.2) | 100 (45)          | FPN750R5S                 | FPN750R5W        | C4-156                 | C4-157     |
|                                                                                      | 480   | 120.0 | 3  | 4       | 60 <sup>3</sup> / <sub>8</sub> (1533.5) | 110 (50)          | FPN760G5S                 | FPN760G5W        | C4-156                 | C4-157     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



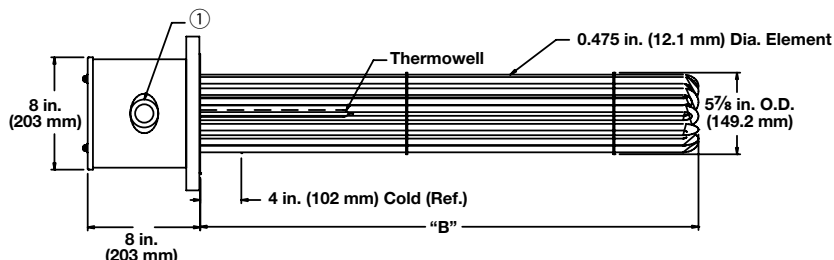
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 6 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lb (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|--------------------------------------------------------------------------------------|-------|-------|----|---------|-----------------------------------------|------------------|---------------------------|------------------|------------------------|------------|
|                                                                                      |       |       |    |         |                                         |                  | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup> Steel Flange 15-Alloy 800 Elements (9.3 W/cm<sup>2</sup>)</b> | 240   | 30.0  | 1  | 3       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 76 (35)          | FPN715G10XS               | FPN715G10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 30.0  | 3  | 5       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 76 (35)          | FPN715G3XS                | FPN715G3XW       | C4-144                 | C4-145     |
|                                                                                      | 480   | 30.0  | 1  | 3       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 76 (35)          | FPN715G11XS               | FPN715G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 30.0  | 3  | 1       | 15 <sup>3</sup> / <sub>8</sub> (390.5)  | 76 (35)          | FPN715G5XS                | FPN715G5XW       | C2-225                 | C2-226     |
|                                                                                      | 240   | 45.0  | 1  | 5       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 82 (38)          | FPN721G10XS               | FPN721G10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 45.0  | 3  | 5       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 82 (38)          | FPN721G3XS                | FPN721G3XW       | C4-144                 | C4-145     |
|                                                                                      | 480   | 45.0  | 1  | 3       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 82 (38)          | FPN721G11XS               | FPN721G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 45.0  | 3  | 5       | 21 <sup>3</sup> / <sub>8</sub> (542.9)  | 82 (38)          | FPN721G5XS                | FPN721G5XW       | C4-150                 | C4-151     |
|                                                                                      | 240   | 60.0  | 3  | 5       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 85 (39)          | FPN726R3XS                | FPN726R3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 60.0  | 1  | 3       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 85 (39)          | FPN726R11XS               | FPN726R11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 60.0  | 3  | 5       | 26 <sup>7</sup> / <sub>8</sub> (682.6)  | 85 (39)          | FPN726R5XS                | FPN726R5XW       | C4-152                 | C4-153     |
|                                                                                      | 240   | 75.0  | 3  | 5       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 90 (41)          | FPN732G3XS                | FPN732G3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 75.0  | 1  | 5       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 90 (41)          | FPN732G11XS               | FPN732G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 75.0  | 3  | 5       | 32 <sup>3</sup> / <sub>8</sub> (822.3)  | 90 (41)          | FPN732G5XS                | FPN732G5XW       | C4-152                 | C4-153     |
|                                                                                      | 240   | 90.0  | 3  | 5       | 37 <sup>7</sup> / <sub>8</sub> (962.0)  | 98 (45)          | FPN737R3XS                | FPN737R3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 90.0  | 3  | 5       | 37 <sup>7</sup> / <sub>8</sub> (962.0)  | 98 (45)          | FPN737R5XS                | FPN737R5XW       | C4-152                 | C4-153     |
|                                                                                      | 480   | 125.0 | 3  | 5       | 50 <sup>7</sup> / <sub>8</sub> (1292.2) | 108 (49)         | FPN750R5XS                | FPN750R5XW       | C/F                    | C/F        |
|                                                                                      | 480   | 150.0 | 3  | 5       | 60 <sup>3</sup> / <sub>8</sub> (1533.5) | 120 (55)         | FPN760G5XS                | FPN760G5XW       | C/F                    | C/F        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



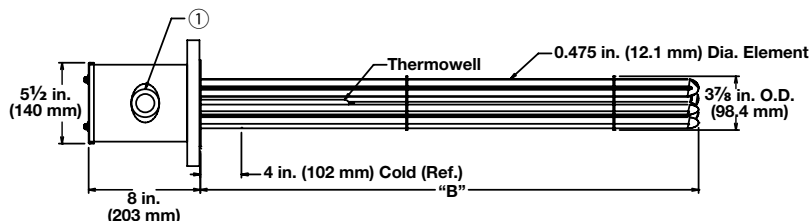
## WATROD ANSI Flange Immersion Heaters



### Application: Deionized or Demineralized Water

- 4 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                             | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                                         |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 60 W/in <sup>2</sup><br>316 SS Flange<br>6-316 SS<br>Elements<br>(9.3 W/cm <sup>2</sup> )<br>Passivated | 240   | 12.0 | 1  | 2       | 16 (406)          | 31 (14)           | FOR716A10S                | FOR716A10W       | C/F                    | C/F        |
|                                                                                                         | 240   | 12.0 | 3  | 1       | 16 (406)          | 31 (14)           | FOR716A3S                 | FOR716A3W        | C2-236                 | C2-214     |
|                                                                                                         | 480   | 12.0 | 1  | 1       | 16 (406)          | 31 (14)           | FOR716A11S                | FOR716A11W       | C/F                    | C/F        |
|                                                                                                         | 480   | 12.0 | 3  | 1       | 16 (406)          | 31 (14)           | FOR716A5S                 | FOR716A5W        | C2-43                  | C2-35      |
|                                                                                                         | 240   | 18.0 | 1  | 2       | 22 (559)          | 34 (16)           | FOR722A10S                | FOR722A10W       | C/F                    | C/F        |
|                                                                                                         | 240   | 18.0 | 3  | 1       | 22 (559)          | 34 (16)           | FOR722A3S                 | FOR722A3W        | C2-236                 | C2-214     |
|                                                                                                         | 480   | 18.0 | 1  | 1       | 22 (559)          | 34 (16)           | FOR722A11S                | FOR722A11W       | C/F                    | C/F        |
|                                                                                                         | 480   | 18.0 | 3  | 1       | 22 (559)          | 34 (16)           | FOR722A5S                 | FOR722A5W        | C2-43                  | C2-35      |
|                                                                                                         | 240   | 24.0 | 1  | 2       | 27 1/2 (699)      | 36 (17)           | FOR727J10S                | FOR727J10W       | C/F                    | C/F        |
|                                                                                                         | 240   | 24.0 | 3  | 2       | 27 1/2 (699)      | 36 (17)           | FOR727J3S                 | FOR727J3W        | C2-218                 | C2-224     |
|                                                                                                         | 480   | 24.0 | 1  | 1       | 27 1/2 (699)      | 36 (17)           | FOR727J11S                | FOR727J11W       | C/F                    | C/F        |
|                                                                                                         | 480   | 24.0 | 3  | 1       | 27 1/2 (699)      | 36 (17)           | FOR727J5S                 | FOR727J5W        | C2-225                 | C2-226     |
|                                                                                                         | 240   | 30.0 | 3  | 2       | 33 (838)          | 39 (18)           | FOR733A3S                 | FOR733A3W        | C2-218                 | C2-224     |
|                                                                                                         | 480   | 30.0 | 1  | 2       | 33 (838)          | 39 (18)           | FOR733A11S                | FOR733A11W       | C/F                    | C/F        |
|                                                                                                         | 480   | 30.0 | 3  | 1       | 33 (838)          | 39 (18)           | FOR733A5S                 | FOR733A5W        | C2-225                 | C2-226     |
|                                                                                                         | 240   | 36.0 | 3  | 2       | 38 1/2 (978)      | 43 (20)           | FOR738J3S                 | FOR738J3W        | C2-218                 | C2-226     |
|                                                                                                         | 480   | 36.0 | 1  | 2       | 38 1/2 (978)      | 43 (20)           | FOR738J11S                | FOR738J11W       | C/F                    | C/F        |
|                                                                                                         | 480   | 36.0 | 3  | 1       | 38 1/2 (978)      | 43 (20)           | FOR738J5S                 | FOR738J5W        | C2-225                 | C2-226     |
|                                                                                                         | 480   | 50.0 | 3  | 2       | 51 1/2 (1308)     | 48 (22)           | FOR751J5S                 | FOR751J5W        | C2-229                 | C2-230     |
|                                                                                                         | 480   | 60.0 | 3  | 2       | 61 (1549)         | 52 (24)           | FOR761A5S                 | FOR761A5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



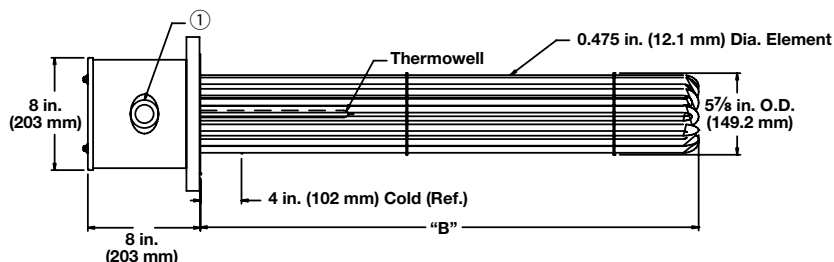
## WATROD ANSI Flange Immersion Heaters



### Application: Deionized or Demineralized Water

- 6 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or  
NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                                         | Volts | kW    | Ph | # Circ. | "B" Dim.<br>in. (mm)                  | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|---------------------------------------------------------------------------------------------------------------------|-------|-------|----|---------|---------------------------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                                     |       |       |    |         |                                       |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>60 W/in<sup>2</sup><br/>316 SS Flange<br/>12-316 SS<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)<br/>(Passivated)</b> | 240   | 24.0  | 1  | 3       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 73 (33)              | FPR715N10S                   | FPR715N10W          | C/F                       | C/F           |
|                                                                                                                     | 240   | 24.0  | 3  | 2       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 73 (33)              | FPR715N3S                    | FPR715N3W           | C2-218                    | C2-224        |
|                                                                                                                     | 480   | 24.0  | 1  | 2       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 73 (33)              | FPR715N11S                   | FPR715N11W          | C/F                       | C/F           |
|                                                                                                                     | 480   | 24.0  | 3  | 1       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 73 (33)              | FPR715N5S                    | FPR715N5W           | C2-225                    | C2-226        |
|                                                                                                                     | 240   | 36.0  | 1  | 4       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 78 (36)              | FPR721N10S                   | FPR721N10W          | C/F                       | C/F           |
|                                                                                                                     | 240   | 36.0  | 3  | 2       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 78 (36)              | FPR721N3S                    | FPR721N3W           | C2-218                    | C2-224        |
|                                                                                                                     | 480   | 36.0  | 1  | 2       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 78 (36)              | FPR721N11S                   | FPR721N11W          | C/F                       | C/F           |
|                                                                                                                     | 480   | 36.0  | 3  | 1       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 78 (36)              | FPR721N5S                    | FPR721N5W           | C2-225                    | C2-226        |
|                                                                                                                     | 240   | 48.0  | 3  | 4       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 81 (37)              | FPR727E3S                    | FPR727E3W           | C4-148                    | C4-149        |
|                                                                                                                     | 480   | 48.0  | 1  | 3       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 81 (37)              | FPR727E11S                   | FPR727E11W          | C/F                       | C/F           |
|                                                                                                                     | 480   | 48.0  | 3  | 2       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 81 (37)              | FPR727E5S                    | FPR727E5W           | C2-229                    | C2-230        |
|                                                                                                                     | 240   | 60.0  | 3  | 4       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 85 (39)              | FPR732N3S                    | FPR732N3W           | C4-148                    | C4-149        |
|                                                                                                                     | 480   | 60.0  | 1  | 3       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 85 (39)              | FPR732N11S                   | FPR732N11W          | C/F                       | C/F           |
|                                                                                                                     | 480   | 60.0  | 3  | 2       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 85 (39)              | FPR732N5S                    | FPR732N5W           | C2-229                    | C2-230        |
|                                                                                                                     | 240   | 72.0  | 3  | 4       | 38 <sup>1</sup> / <sub>4</sub> (972)  | 92 (42)              | FPR738E3S                    | FPR738E3W           | C4-148                    | C4-149        |
|                                                                                                                     | 480   | 72.0  | 3  | 2       | 38 <sup>1</sup> / <sub>4</sub> (972)  | 92 (42)              | FPR738E5S                    | FPR738E5W           | C2-229                    | C2-230        |
|                                                                                                                     | 480   | 100.0 | 3  | 4       | 51 <sup>1</sup> / <sub>4</sub> (1302) | 100 (45)             | FPR751E5S                    | FPR751E5W           | C4-156                    | C4-157        |
|                                                                                                                     | 480   | 120.0 | 3  | 4       | 60 <sup>3</sup> / <sub>4</sub> (1543) | 110 (50)             | FPR760N5S                    | FPR760N5W           | C4-156                    | C4-157        |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters

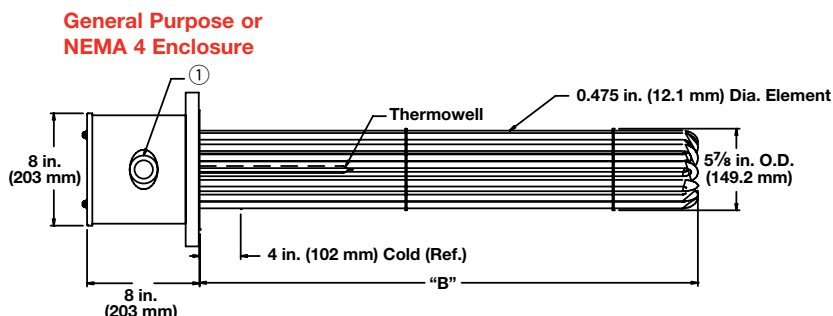


## WATROD ANSI Flange Immersion Heaters



### Application: Deionized or Demineralized Water

- 6 inch - 150 lb ANSI flange
- WATROD element
- Without thermostat
- General purpose or NEMA 4 enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                                         | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------------------------------------------|-------|-------|----|---------|---------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                                                     |       |       |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>60 W/in<sup>2</sup><br/>316 SS Flange<br/>15-316 SS<br/>Elements<br/>(9.3 W/cm<sup>2</sup>)<br/>(Passivated)</b> | 240   | 30.0  | 1  | 3       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 76 (35)           | FPR715N10XS               | FPR715N10XW      | C/F                    | C/F        |
|                                                                                                                     | 240   | 30.0  | 3  | 5       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 76 (35)           | FPR715N3XS                | FPR715N3XW       | C4-144                 | C4-145     |
|                                                                                                                     | 480   | 30.0  | 1  | 3       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 76 (35)           | FPR715N11XS               | FPR715N11XW      | C/F                    | C/F        |
|                                                                                                                     | 480   | 30.0  | 3  | 1       | 15 <sup>3</sup> / <sub>4</sub> (400)  | 76 (35)           | FPR715N5XS                | FPR715N5XW       | C2-225                 | C2-226     |
|                                                                                                                     | 240   | 45.0  | 1  | 5       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 82 (38)           | FPR721N10XS               | FPR721N10XW      | C/F                    | C/F        |
|                                                                                                                     | 240   | 45.0  | 3  | 5       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 82 (38)           | FPR721N3XS                | FPR721N3XW       | C4-144                 | C4-145     |
|                                                                                                                     | 480   | 45.0  | 1  | 3       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 82 (38)           | FPR721N11XS               | FPR721N11XW      | C/F                    | C/F        |
|                                                                                                                     | 480   | 45.0  | 3  | 5       | 21 <sup>3</sup> / <sub>4</sub> (552)  | 82 (38)           | FPR721N5XS                | FPR721N5XW       | C4-150                 | C4-151     |
|                                                                                                                     | 240   | 60.0  | 3  | 5       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 85 (39)           | FPR727E3XS                | FPR727E3XW       | C/F                    | C/F        |
|                                                                                                                     | 480   | 60.0  | 1  | 3       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 85 (39)           | FPR727E11XS               | FPR727E11XW      | C/F                    | C/F        |
|                                                                                                                     | 480   | 60.0  | 3  | 5       | 27 <sup>1</sup> / <sub>4</sub> (692)  | 85 (39)           | FPR727E5XS                | FPR727E5XW       | C4-152                 | C4-153     |
|                                                                                                                     | 240   | 75.0  | 3  | 5       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 90 (41)           | FPR732N3XS                | FPR732N3XW       | C/F                    | C/F        |
|                                                                                                                     | 480   | 75.0  | 1  | 5       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 90 (41)           | FPR732N11XS               | FPR732N11XW      | C/F                    | C/F        |
|                                                                                                                     | 480   | 75.0  | 3  | 5       | 32 <sup>3</sup> / <sub>4</sub> (832)  | 90 (41)           | FPR732N5XS                | FPR732N5XW       | C4-152                 | C4-153     |
|                                                                                                                     | 240   | 90.0  | 3  | 5       | 38 <sup>1</sup> / <sub>4</sub> (972)  | 98 (45)           | FPR738E3XS                | FPR738E3XW       | C/F                    | C/F        |
|                                                                                                                     | 480   | 90.0  | 3  | 5       | 38 <sup>1</sup> / <sub>4</sub> (972)  | 98 (45)           | FPR738E5XS                | FPR738E5XW       | C4-152                 | C4-153     |
|                                                                                                                     | 480   | 125.0 | 3  | 5       | 51 <sup>1</sup> / <sub>4</sub> (1302) | 108 (49)          | FPR751E5XS                | FPR751E5XW       | C/F                    | C/F        |
|                                                                                                                     | 480   | 150.0 | 3  | 5       | 60 <sup>3</sup> / <sub>4</sub> (1543) | 120 (55)          | FPR760N5XS                | FPR760N5XW       | C/F                    | C/F        |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



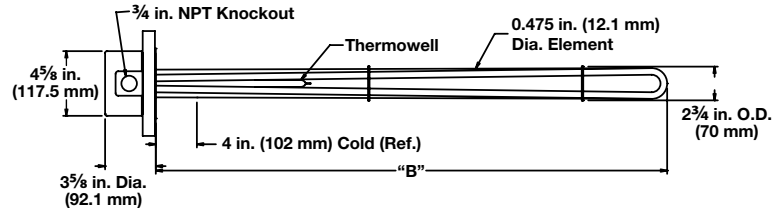
## WATROD ANSI Flange Immersion Heaters



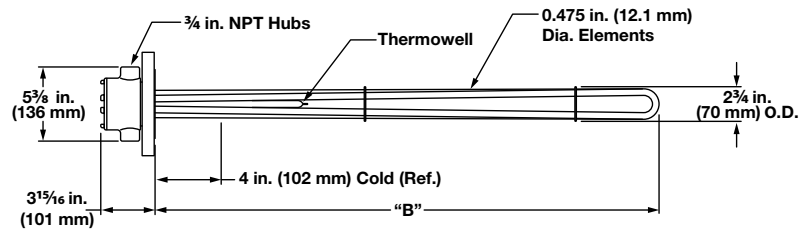
### Application: Process Water

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

#### General Purpose



#### NEMA 4 Enclosure



| Description                                                                                           | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part Number                  |                     | WATCONNECT<br>Part Number |               |
|-------------------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                       |       |      |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>48 W/in<sup>2</sup> @<br/>Steel Flange<br/>3-Alloy 800<br/>Elements<br/>(7.5 W/cm<sup>2</sup>)</b> | 240   | 4.5  | 1  | 13 1/2 (343)         | 22 (10)              | FMN713J10S                   | FMN713J10W          | C/F                       | C/F           |
|                                                                                                       | 240   | 4.5  | 3  | 13 1/2 (343)         | 22 (10)              | FMN713J3S                    | FMN713J3W           | C2-50                     | C2-92         |
|                                                                                                       | 480   | 4.5  | 1  | 13 1/2 (343)         | 22 (10)              | FMN713J11S                   | FMN713J11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 4.5  | 3  | 13 1/2 (343)         | 22 (10)              | FMN713J5S                    | FMN713J5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 6.0  | 1  | 18 (457)             | 23 (11)              | FMN718A10S                   | FMN718A10W          | C/F                       | C/F           |
|                                                                                                       | 240   | 6.0  | 3  | 18 (457)             | 23 (11)              | FMN718A3S                    | FMN718A3W           | C2-50                     | C2-92         |
|                                                                                                       | 480   | 6.0  | 1  | 18 (457)             | 23 (11)              | FMN718A11S                   | FMN718A11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 6.0  | 3  | 18 (457)             | 23 (11)              | FMN718A5S                    | FMN718A5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 7.5  | 1  | 20 1/2 (521)         | 25 (12)              | FMN720J10S                   | FMN720J10W          | C/F                       | C/F           |
|                                                                                                       | 240   | 7.5  | 3  | 20 1/2 (521)         | 25 (12)              | FMN720J3S                    | FMN720J3W           | C2-50                     | C2-92         |
|                                                                                                       | 480   | 7.5  | 1  | 20 1/2 (521)         | 25 (12)              | FMN720J11S                   | FMN720J11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 7.5  | 3  | 20 1/2 (521)         | 25 (12)              | FMN720J5S                    | FMN720J5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 9.0  | 1  | 25 1/2 (648)         | 27 (13)              | FMN725J10S                   | FMN725J10W          | C/F                       | C/F           |
|                                                                                                       | 240   | 9.0  | 3  | 25 1/2 (648)         | 27 (13)              | FMN725J3S                    | FMN725J3W           | C2-50                     | C2-92         |
|                                                                                                       | 480   | 9.0  | 1  | 25 1/2 (648)         | 27 (13)              | FMN725J11S                   | FMN725J11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 9.0  | 3  | 25 1/2 (648)         | 27 (13)              | FMN725J5S                    | FMN725J5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 12.0 | 3  | 33 (838)             | 28 (13)              | FMN733A3S                    | FMN733A3W           | C2-236                    | C2-214        |
|                                                                                                       | 480   | 12.0 | 1  | 33 (838)             | 28 (13)              | FMN733A11S                   | FMN733A11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 12.0 | 3  | 33 (838)             | 28 (13)              | FMN733A5S                    | FMN733A5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 15.0 | 3  | 40 1/2 (1029)        | 30 (14)              | FMN740J3S                    | FMN740J3W           | C2-236                    | C2-214        |
|                                                                                                       | 480   | 15.0 | 1  | 40 1/2 (1029)        | 30 (14)              | FMN740J11S                   | FMN740J11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 15.0 | 3  | 40 1/2 (1029)        | 30 (14)              | FMN740J5S                    | FMN740J5W           | C2-43                     | C2-35         |
|                                                                                                       | 240   | 18.0 | 3  | 48 (1219)            | 32 (15)              | FMN748A3S                    | FMN748A3W           | C2-236                    | C2-214        |
|                                                                                                       | 480   | 18.0 | 1  | 48 (1219)            | 32 (15)              | FMN748A11S                   | FMN748A11W          | C/F                       | C/F           |
|                                                                                                       | 480   | 18.0 | 3  | 48 (1219)            | 32 (15)              | FMN748A5S                    | FMN748A5W           | C2-43                     | C2-35         |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

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⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



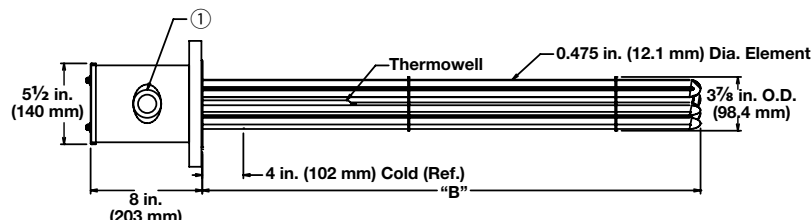
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 4 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                   | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-----------------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                               |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup> ⑥<br>Steel Flange<br>6-Alloy 800<br>Elements<br>(7.5 W/cm <sup>2</sup> ) | 240   | 9.0  | 1  | 1       | 13 1/2 (343)      | 29 (14)           | FON713J10S                | FON713J10W       | C/F                    | C/F        |
|                                                                                               | 240   | 9.0  | 3  | 1       | 13 1/2 (343)      | 29 (14)           | FON713J3S                 | FON713J3W        | C2-50                  | C2-92      |
|                                                                                               | 480   | 9.0  | 1  | 1       | 13 1/2 (343)      | 29 (14)           | FON713J11S                | FON713J11W       | C/F                    | C/F        |
|                                                                                               | 480   | 9.0  | 3  | 1       | 13 1/2 (343)      | 29 (14)           | FON713J5S                 | FON713J5W        | C2-43                  | C2-35      |
|                                                                                               | 240   | 12.0 | 1  | 2       | 18 (457)          | 32 (15)           | FON718A10S                | FON718A10W       | C/F                    | C/F        |
|                                                                                               | 240   | 12.0 | 3  | 1       | 18 (457)          | 32 (15)           | FON718A3S                 | FON718A3W        | C2-236                 | C2-214     |
|                                                                                               | 480   | 12.0 | 1  | 1       | 18 (457)          | 32 (15)           | FON718A11S                | FON718A11W       | C/F                    | C/F        |
|                                                                                               | 480   | 12.0 | 3  | 1       | 18 (457)          | 32 (15)           | FON718A5S                 | FON718A5W        | C2-43                  | C2-35      |
|                                                                                               | 240   | 15.0 | 1  | 2       | 20 1/2 (521)      | 34 (16)           | FON720J10S                | FON720J10W       | C/F                    | C/F        |
|                                                                                               | 240   | 15.0 | 3  | 1       | 20 1/2 (521)      | 34 (16)           | FON720J3S                 | FON720J3W        | C2-236                 | C2-214     |
|                                                                                               | 480   | 15.0 | 1  | 1       | 20 1/2 (521)      | 34 (16)           | FON720J11S                | FON720J11W       | C/F                    | C/F        |
|                                                                                               | 480   | 15.0 | 3  | 1       | 20 1/2 (521)      | 34 (16)           | FON720J5S                 | FON720J5W        | C2-225                 | C2-226     |
|                                                                                               | 240   | 18.0 | 1  | 2       | 25 1/2 (648)      | 36 (17)           | FON725J10S                | FON725J10W       | C/F                    | C/F        |
|                                                                                               | 240   | 18.0 | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FON725J3S                 | FON725J3W        | C2-236                 | C2-214     |
|                                                                                               | 480   | 18.0 | 1  | 1       | 25 1/2 (648)      | 36 (17)           | FON725J11S                | FON725J11W       | C/F                    | C/F        |
|                                                                                               | 480   | 18.0 | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FON725J5S                 | FON725J5W        | C2-43                  | C2-35      |
|                                                                                               | 240   | 24.0 | 1  | 2       | 33 (838)          | 39 (18)           | FON733A10S                | FON733A10W       | C/F                    | C/F        |
|                                                                                               | 240   | 24.0 | 3  | 2       | 33 (838)          | 39 (18)           | FON733A3S                 | FON733A3W        | C2-218                 | C2-224     |
|                                                                                               | 480   | 24.0 | 1  | 1       | 33 (838)          | 39 (18)           | FON733A11S                | FON733A11W       | C/F                    | C/F        |
|                                                                                               | 480   | 24.0 | 3  | 1       | 33 (838)          | 39 (18)           | FON733A5S                 | FON733A5W        | C2-225                 | C2-226     |
|                                                                                               | 240   | 30.0 | 3  | 2       | 40 1/2 (1029)     | 43 (20)           | FON740J3S                 | FON740J3W        | C2-218                 | C2-224     |
|                                                                                               | 480   | 30.0 | 1  | 2       | 40 1/2 (1029)     | 43 (20)           | FON740J11S                | FON740J11W       | C/F                    | C/F        |
|                                                                                               | 480   | 30.0 | 3  | 1       | 40 1/2 (1029)     | 43 (20)           | FON740J5S                 | FON740J5W        | C2-225                 | C2-226     |
|                                                                                               | 240   | 36.0 | 3  | 2       | 48 (1219)         | 48 (22)           | FON748A3S                 | FON748A3W        | C2-218                 | C2-224     |
|                                                                                               | 480   | 36.0 | 1  | 2       | 48 (1219)         | 48 (22)           | FON748A11S                | FON748A11W       | C/F                    | C/F        |
|                                                                                               | 480   | 36.0 | 3  | 1       | 48 (1219)         | 48 (22)           | FON748A5S                 | FON748A5W        | C2-225                 | C2-226     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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- ⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



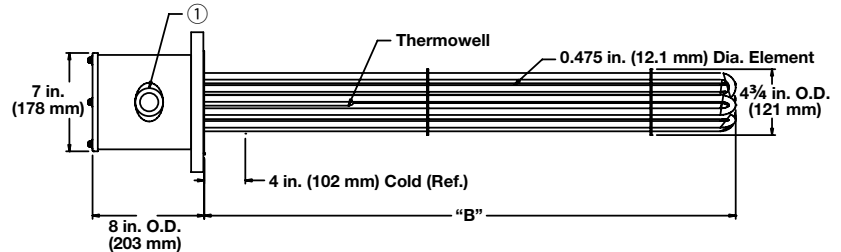
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                         | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-------------------------------------------------------------------------------------|-------|------|----|---------|---------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                     |       |      |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>48 W/in<sup>2</sup> Steel Flange 6-Alloy 800 Elements (7.5 W/cm<sup>2</sup>)</b> | 240   | 9.0  | 1  | 1       | 13 <sup>1</sup> / <sub>2</sub> (343)  | 33 (15)           | FNN713J10S                | FNN713J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 9.0  | 3  | 1       | 13 <sup>1</sup> / <sub>2</sub> (343)  | 33 (15)           | FNN713J3S                 | FNN713J3W        | C2-50                  | C2-92      |
|                                                                                     | 480   | 9.0  | 1  | 1       | 13 <sup>1</sup> / <sub>2</sub> (343)  | 33 (15)           | FNN713J11S                | FNN713J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 9.0  | 3  | 1       | 13 <sup>1</sup> / <sub>2</sub> (343)  | 33 (15)           | FNN713J5S                 | FNN713J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 12.0 | 1  | 2       | 18 (457)                              | 36 (17)           | FNN718A10S                | FNN718A10W       | C/F                    | C/F        |
|                                                                                     | 240   | 12.0 | 3  | 1       | 18 (457)                              | 36 (17)           | FNN718A3S                 | FNN718A3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 12.0 | 1  | 1       | 18 (457)                              | 36 (17)           | FNN718A11S                | FNN718A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 12.0 | 3  | 1       | 18 (457)                              | 36 (17)           | FNN718A5S                 | FNN718A5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 15.0 | 1  | 2       | 20 <sup>1</sup> / <sub>2</sub> (521)  | 38 (18)           | FNN720J10S                | FNN720J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 15.0 | 3  | 1       | 20 <sup>1</sup> / <sub>2</sub> (521)  | 38 (18)           | FNN720J3S                 | FNN720J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 15.0 | 1  | 1       | 20 <sup>1</sup> / <sub>2</sub> (521)  | 38 (18)           | FNN720J11S                | FNN720J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 15.0 | 3  | 1       | 20 <sup>1</sup> / <sub>2</sub> (521)  | 38 (18)           | FNN720J5S                 | FNN720J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 18.0 | 1  | 2       | 25 <sup>1</sup> / <sub>2</sub> (648)  | 40 (19)           | FNN725J10S                | FNN725J10W       | C/F                    | C/F        |
|                                                                                     | 240   | 18.0 | 3  | 1       | 25 <sup>1</sup> / <sub>2</sub> (648)  | 40 (19)           | FNN725J3S                 | FNN725J3W        | C2-236                 | C2-214     |
|                                                                                     | 480   | 18.0 | 1  | 1       | 25 <sup>1</sup> / <sub>2</sub> (648)  | 40 (19)           | FNN725J11S                | FNN725J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 18.0 | 3  | 1       | 25 <sup>1</sup> / <sub>2</sub> (648)  | 40 (19)           | FNN725J5S                 | FNN725J5W        | C2-43                  | C2-35      |
|                                                                                     | 240   | 24.0 | 1  | 3       | 33 (838)                              | 43 (20)           | FNN733A10S                | FNN733A10W       | C/F                    | C/F        |
|                                                                                     | 240   | 24.0 | 3  | 2       | 33 (838)                              | 43 (20)           | FNN733A3S                 | FNN733A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 24.0 | 1  | 1       | 33 (838)                              | 43 (20)           | FNN733A11S                | FNN733A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 24.0 | 3  | 1       | 33 (838)                              | 43 (20)           | FNN733A5S                 | FNN733A5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 30.0 | 3  | 2       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 47 (22)           | FNN740J3S                 | FNN740J3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 30.0 | 1  | 2       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 47 (22)           | FNN740J11S                | FNN740J11W       | C/F                    | C/F        |
|                                                                                     | 480   | 30.0 | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 47 (22)           | FNN740J5S                 | FNN740J5W        | C2-225                 | C2-226     |
|                                                                                     | 240   | 36.0 | 3  | 2       | 48 (1219)                             | 52 (24)           | FNN748A3S                 | FNN748A3W        | C2-218                 | C2-224     |
|                                                                                     | 480   | 36.0 | 1  | 2       | 48 (1219)                             | 52 (24)           | FNN748A11S                | FNN748A11W       | C/F                    | C/F        |
|                                                                                     | 480   | 36.0 | 3  | 1       | 48 (1219)                             | 52 (24)           | FNN748A5S                 | FNN748A5W        | C2-225                 | C2-226     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



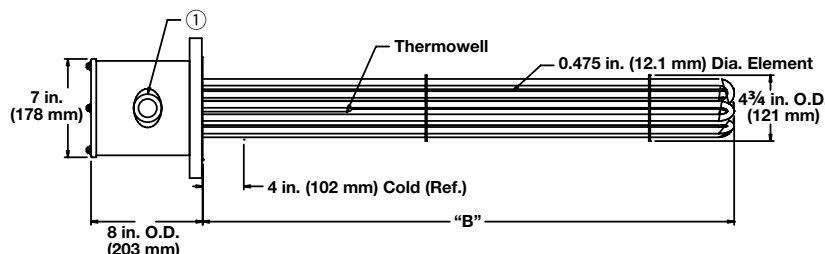
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                     | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                 |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup> Steel Flange 9-Alloy 800 Elements (7.5 W/cm <sup>2</sup> ) | 240   | 14.0 | 1  | 3       | 13 1/2 (343)      | 35 (16)           | FNN713J10XS               | FNN713J10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 14.0 | 3  | 1       | 13 1/2 (343)      | 35 (16)           | FNN713J3XS                | FNN713J3XW       | C2-236                 | C2-214     |
|                                                                                 | 480   | 14.0 | 1  | 1       | 13 1/2 (343)      | 35 (16)           | FNN713J11XS               | FNN713J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 14.0 | 3  | 1       | 13 1/2 (343)      | 35 (16)           | FNN713J5XS                | FNN713J5XW       | C2-43                  | C2-35      |
|                                                                                 | 240   | 18.0 | 1  | 3       | 18 (457)          | 39 (18)           | FNN718A10XS               | FNN718A10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 18.0 | 3  | 1       | 18 (457)          | 39 (18)           | FNN718A3XS                | FNN718A3XW       | C2-236                 | C2-214     |
|                                                                                 | 480   | 18.0 | 1  | 1       | 18 (457)          | 39 (18)           | FNN718A11XS               | FNN718A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 18.0 | 3  | 1       | 18 (457)          | 39 (18)           | FNN718A5XS                | FNN718A5XW       | C2-43                  | C2-35      |
|                                                                                 | 240   | 23.0 | 1  | 3       | 20 1/2 (521)      | 42 (19)           | FNN720J10XS               | FNN720J10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 23.0 | 3  | 3       | 20 1/2 (521)      | 42 (19)           | FNN720J3XS                | FNN720J3XW       | C4-143                 | C4-142     |
|                                                                                 | 480   | 23.0 | 1  | 1       | 20 1/2 (521)      | 42 (19)           | FNN720J11XS               | FNN720J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 23.0 | 3  | 1       | 20 1/2 (521)      | 42 (19)           | FNN720J5XS                | FNN720J5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 27.0 | 1  | 3       | 25 1/2 (648)      | 45 (21)           | FNN725J10XS               | FNN725J10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 27.0 | 3  | 3       | 25 1/2 (648)      | 45 (21)           | FNN725J3XS                | FNN725J3XW       | C4-143                 | C4-142     |
|                                                                                 | 480   | 27.0 | 1  | 3       | 25 1/2 (648)      | 45 (21)           | FNN725J11XS               | FNN725J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 27.0 | 3  | 1       | 25 1/2 (648)      | 45 (21)           | FNN725J5XS                | FNN725J5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 36.0 | 3  | 3       | 33 (838)          | 48 (22)           | FNN733A3XS                | FNN733A3XW       | C4-144                 | C4-145     |
|                                                                                 | 480   | 36.0 | 1  | 3       | 33 (838)          | 48 (22)           | FNN733A11XS               | FNN733A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 36.0 | 3  | 1       | 33 (838)          | 48 (22)           | FNN733A5XS                | FNN733A5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 45.0 | 3  | 3       | 40 1/2 (1029)     | 53 (24)           | FNN740J3XS                | FNN740J3XW       | C4-144                 | C4-145     |
|                                                                                 | 480   | 45.0 | 1  | 3       | 40 1/2 (1029)     | 53 (24)           | FNN740J11XS               | FNN740J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 45.0 | 3  | 3       | 40 1/2 (1029)     | 53 (24)           | FNN740J5XS                | FNN740J5XW       | C4-150                 | C4-151     |
|                                                                                 | 240   | 54.0 | 3  | 3       | 48 (1219)         | 60 (28)           | FNN748A3XS                | FNN748A3XW       | C4-144                 | C4-145     |
|                                                                                 | 480   | 54.0 | 1  | 3       | 48 (1219)         | 60 (28)           | FNN748A11XS               | FNN748A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 54.0 | 3  | 3       | 48 (1219)         | 60 (28)           | FNN748A5XS                | FNN748A5XW       | C4-150                 | C4-151     |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



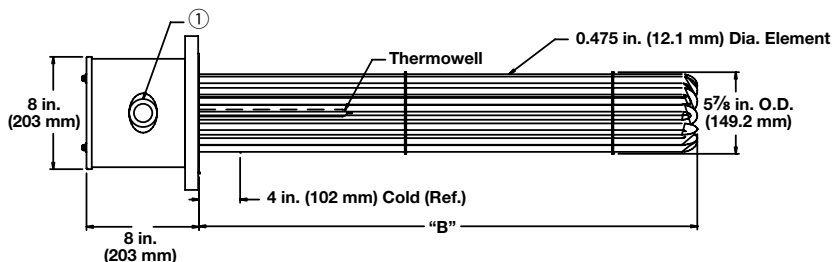
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|--------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                      |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>48 W/in<sup>2</sup> Steel Flange 12-Alloy 800 Elements (7.5 W/cm<sup>2</sup>)</b> | 240   | 18.0 | 1  | 2       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G10S                | FPN713G10W       | C/F                    | C/F        |
|                                                                                      | 240   | 18.0 | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G3S                 | FPN713G3W        | C2-236                 | C2-214     |
|                                                                                      | 480   | 18.0 | 1  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G11S                | FPN713G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 18.0 | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G5S                 | FPN713G5W        | C2-43                  | C2-35      |
|                                                                                      | 240   | 24.0 | 1  | 3       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R10S                | FPN717R10W       | C/F                    | C/F        |
|                                                                                      | 240   | 24.0 | 3  | 2       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R3S                 | FPN717R3W        | C2-218                 | C2-224     |
|                                                                                      | 480   | 24.0 | 1  | 2       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R11S                | FPN717R11W       | C/F                    | C/F        |
|                                                                                      | 480   | 24.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R5S                 | FPN717R5W        | C2-225                 | C2-226     |
|                                                                                      | 240   | 30.0 | 1  | 3       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G10S                | FPN720G10W       | C/F                    | C/F        |
|                                                                                      | 240   | 30.0 | 3  | 2       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G3S                 | FPN720G3W        | C2-218                 | C2-224     |
|                                                                                      | 480   | 30.0 | 1  | 2       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G11S                | FPN720G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 30.0 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G5S                 | FPN720G5W        | C2-225                 | C2-226     |
|                                                                                      | 240   | 36.0 | 1  | 4       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G10S                | FPN725G10W       | C/F                    | C/F        |
|                                                                                      | 240   | 36.0 | 3  | 2       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G3S                 | FPN725G3W        | C2-218                 | C2-224     |
|                                                                                      | 480   | 36.0 | 1  | 2       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G11S                | FPN725G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 36.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G5S                 | FPN725G5W        | C2-225                 | C2-226     |
|                                                                                      | 240   | 48.0 | 3  | 4       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPN732R3S                 | FPN732R3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 48.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPN732R11S                | FPN732R11W       | C/F                    | C/F        |
|                                                                                      | 480   | 48.0 | 3  | 2       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPN732R5S                 | FPN732R5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 60.0 | 3  | 4       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPN740G3S                 | FPN740G3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 60.0 | 1  | 3       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPN740G11S                | FPN740G11W       | C/F                    | C/F        |
|                                                                                      | 480   | 60.0 | 3  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPN740G5S                 | FPN740G5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 72.0 | 3  | 4       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPN747R3S                 | FPN747R3W        | C4-148                 | C4-149     |
|                                                                                      | 480   | 72.0 | 3  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPN747R5S                 | FPN747R5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



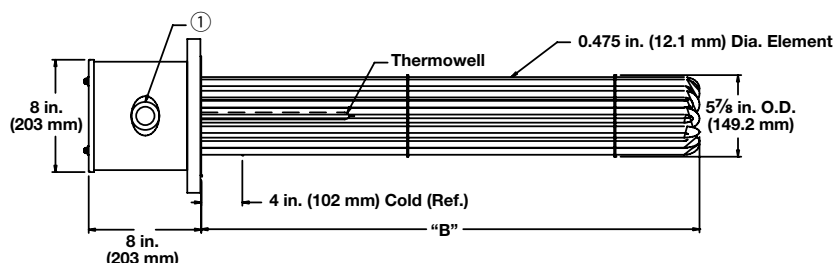
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|--------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                      |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>48 W/in<sup>2</sup> Steel Flange 15-Alloy 800 Elements (7.5 W/cm<sup>2</sup>)</b> | 240   | 23.0 | 1  | 3       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G10XS               | FPN713G10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 23.0 | 3  | 5       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G3XS                | FPN713G3XW       | C4-143                 | C4-142     |
|                                                                                      | 480   | 23.0 | 1  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G11XS               | FPN713G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 23.0 | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G5XS                | FPN713G5XW       | C2-225                 | C2-226     |
|                                                                                      | 240   | 30.0 | 1  | 3       | 17 <sup>7</sup> / <sub>8</sub> (441.3)  | 78 (36)           | FPN717R10XS               | FPN717R10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 30.0 | 3  | 5       | 17 <sup>7</sup> / <sub>8</sub> (441.3)  | 78 (36)           | FPN717R3XS                | FPN717R3XW       | C4-144                 | C4-145     |
|                                                                                      | 480   | 30.0 | 1  | 3       | 17 <sup>7</sup> / <sub>8</sub> (441.3)  | 78 (36)           | FPN717R11XS               | FPN717R11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 30.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (441.3)  | 78 (36)           | FPN717R5XS                | FPN717R5XW       | C2-225                 | C2-226     |
|                                                                                      | 240   | 38.0 | 1  | 5       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G10XS               | FPN720G10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 38.0 | 3  | 5       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G3XS                | FPN720G3XW       | C4-144                 | C4-145     |
|                                                                                      | 480   | 38.0 | 1  | 3       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G11XS               | FPN720G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 38.0 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G5XS                | FPN720G5XW       | C2-225                 | C2-226     |
|                                                                                      | 240   | 45.0 | 1  | 5       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G10XS               | FPN725G10XW      | C/F                    | C/F        |
|                                                                                      | 240   | 45.0 | 3  | 5       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G3XS                | FPN725G3XW       | C4-144                 | C4-145     |
|                                                                                      | 480   | 45.0 | 1  | 3       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G11XS               | FPN725G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 45.0 | 3  | 5       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G5XS                | FPN725G5XW       | C4-150                 | C4-151     |
|                                                                                      | 240   | 60.0 | 3  | 5       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPN732R3XS                | FPN732R3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 60.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPN732R11XS               | FPN732R11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 60.0 | 3  | 5       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPN732R5XS                | FPN732R5XW       | C4-152                 | C4-153     |
|                                                                                      | 240   | 75.0 | 3  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPN740G3XS                | FPN740G3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 75.0 | 1  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPN740G11XS               | FPN740G11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 75.0 | 3  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPN740G5XS                | FPN740G5XW       | C4-152                 | C4-153     |
|                                                                                      | 240   | 90.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPN747R3XS                | FPN747R3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 90.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPN747R5XS                | FPN747R5XW       | C4-152                 | C4-153     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



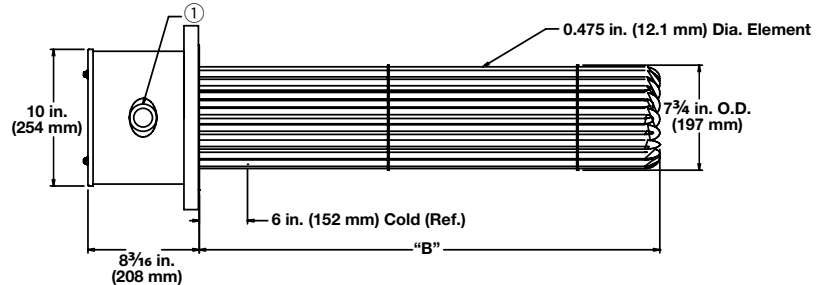
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 8 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                         | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|--------------------------------------------------------------------------------------|-------|-------|----|---------|-------------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                      |       |       |    |         |                                           |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>48 W/in<sup>2</sup> Steel Flange 18-Alloy 800 Elements (7.5 W/cm<sup>2</sup>)</b> | 240   | 50.0  | 3  | 3       | 25 <sup>3</sup> / <sub>4</sub> (654.0)    | 121 (55)          | FRN725N3S                 | FRN725N3W        | C4-144                 | C4-145     |
|                                                                                      | 480   | 50.0  | 1  | 3       | 25 <sup>3</sup> / <sub>4</sub> (654.0)    | 121 (55)          | FRN725N11S                | FRN725N11W       | C/F                    | C/F        |
|                                                                                      | 480   | 50.0  | 3  | 2       | 25 <sup>3</sup> / <sub>4</sub> (654.0)    | 121 (55)          | FRN725N5S                 | FRN725N5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 75.0  | 3  | 6       | 35 <sup>3</sup> / <sub>4</sub> (908.0)    | 130 (59)          | FRN735N3S                 | FRN735N3W        | C/F                    | C/F        |
|                                                                                      | 480   | 75.0  | 3  | 2       | 35 <sup>3</sup> / <sub>4</sub> (908.0)    | 130 (59)          | FRN735N5S                 | FRN735N5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 100.0 | 3  | 6       | 44 <sup>1</sup> / <sub>4</sub> (1124.0)   | 132 (60)          | FRN744E3S                 | FRN744E3W        | C/F                    | C/F        |
|                                                                                      | 480   | 100.0 | 3  | 3       | 44 <sup>1</sup> / <sub>4</sub> (1124.0)   | 132 (60)          | FRN744E5S                 | FRN744E5W        | C2-229                 | C2-230     |
|                                                                                      | 240   | 125.0 | 3  | 6       | 54 <sup>11</sup> / <sub>16</sub> (1389.1) | 140 (64)          | FRN754M3S                 | FRN754M3W        | C/F                    | C/F        |
|                                                                                      | 480   | 125.0 | 3  | 6       | 54 <sup>11</sup> / <sub>16</sub> (1389.1) | 140 (64)          | FRN754M5S                 | FRN754M5W        | C/F                    | C/F        |
|                                                                                      | 480   | 150.0 | 3  | 6       | 63 <sup>11</sup> / <sub>16</sub> (1617.6) | 145 (66)          | FRN763M5S                 | FRN763M5W        | C/F                    | C/F        |
|                                                                                      | 480   | 175.0 | 3  | 6       | 73 <sup>3</sup> / <sub>16</sub> (1859.0)  | 151 (69)          | FRN773D5S                 | FRN773D5W        | C/F                    | C/F        |
|                                                                                      | 480   | 200.0 | 3  | 6       | 82 <sup>11</sup> / <sub>16</sub> (2100.3) | 157 (72)          | FRN782M5S                 | FRN782M5W        | C/F                    | C/F        |
| <b>48 W/in<sup>2</sup> Steel Flange 24-Alloy 800 Elements (7.5 W/cm<sup>2</sup>)</b> | 240   | 67.0  | 3  | 4       | 26 <sup>3</sup> / <sub>16</sub> (665.2)   | 129 (59)          | FRN726D3XS                | FRN726D3XW       | C4-148                 | C4-149     |
|                                                                                      | 480   | 67.0  | 1  | 3       | 26 <sup>3</sup> / <sub>16</sub> (665.2)   | 129 (59)          | FRN726D11XS               | FRN726D11XW      | C/F                    | C/F        |
|                                                                                      | 480   | 67.0  | 3  | 2       | 26 <sup>3</sup> / <sub>16</sub> (665.2)   | 129 (59)          | FRN726D5XS                | FRN726D5XW       | C2-229                 | C2-230     |
|                                                                                      | 240   | 100.0 | 3  | 8       | 36 <sup>3</sup> / <sub>16</sub> (919.2)   | 142 (65)          | FRN736D3XS                | FRN736D3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 100.0 | 3  | 4       | 36 <sup>3</sup> / <sub>16</sub> (919.2)   | 142 (65)          | FRN736D5XS                | FRN736D5XW       | C4-156                 | C4-157     |
|                                                                                      | 240   | 133.0 | 3  | 8       | 44 <sup>11</sup> / <sub>16</sub> (1135.1) | 147 (67)          | FRN744M3XS                | FRN744M3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 133.0 | 3  | 4       | 44 <sup>11</sup> / <sub>16</sub> (1135.1) | 147 (67)          | FRN744M5XS                | FRN744M5XW       | C4-156                 | C4-157     |
|                                                                                      | 240   | 167.0 | 3  | 8       | 54 <sup>11</sup> / <sub>16</sub> (1389.1) | 158 (72)          | FRN754M3XS                | FRN754M3XW       | C/F                    | C/F        |
|                                                                                      | 480   | 167.0 | 3  | 8       | 54 <sup>11</sup> / <sub>16</sub> (1389.1) | 158 (72)          | FRN754M5XS                | FRN754M5XW       | C/F                    | C/F        |
|                                                                                      | 480   | 200.0 | 3  | 8       | 63 <sup>11</sup> / <sub>16</sub> (1617.6) | 166 (76)          | FRN763M5XS                | FRN763M5XW       | C/F                    | C/F        |
|                                                                                      | 480   | 233.0 | 3  | 8       | 73 <sup>3</sup> / <sub>16</sub> (1859.0)  | 175 (80)          | FRN773D5XS                | FRN773D5XW       | C/F                    | C/F        |
|                                                                                      | 480   | 267.0 | 3  | 8       | 82 <sup>11</sup> / <sub>16</sub> (2100.3) | 184 (84)          | FRN782M5XS                | FRN782M5XW       | C/F                    | C/F        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



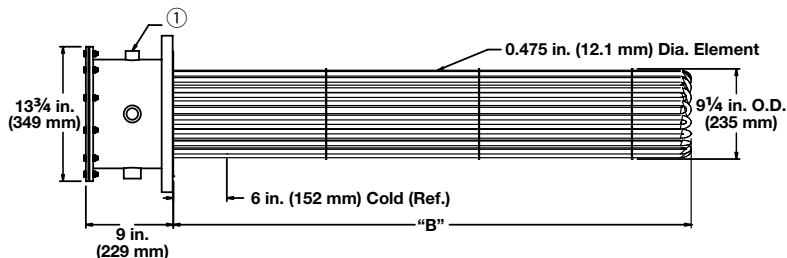
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 10 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



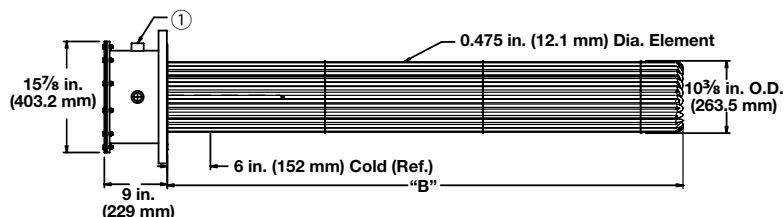
- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|-------|----|---------|---------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |       |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup> Steel Flange 27-Alloy 800 Elements (7.5 W/cm <sup>2</sup> ) | 480   | 190.0 | 3  | 9       | 54 <sup>3</sup> / <sub>4</sub> (1391) | 240 (109)         | FSN754N5S                 | FSN754N5W        | C/F                    | C/F        |
|                                                                                  | 480   | 262.0 | 3  | 9       | 73 <sup>1</sup> / <sub>4</sub> (1861) | 260 (118)         | FSN773E5S                 | FSN773E5W        | C/F                    | C/F        |

### Application: Process Water

- 12 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|-------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |       |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup> Steel Flange 36-Alloy 800 Elements (7.5 W/cm <sup>2</sup> ) | 480   | 250.0 | 3  | 6       | 54 <sup>5</sup> / <sub>8</sub> (1387.5) | 280 (127)         | FTN754L5S                 | FTN754L5W        | C/F                    | C/F        |
|                                                                                  | 480   | 350.0 | 3  | 12      | 73 <sup>1</sup> / <sub>8</sub> (1857.4) | 291 (132)         | FTN773C5S                 | FTN773C5W        | C/F                    | C/F        |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



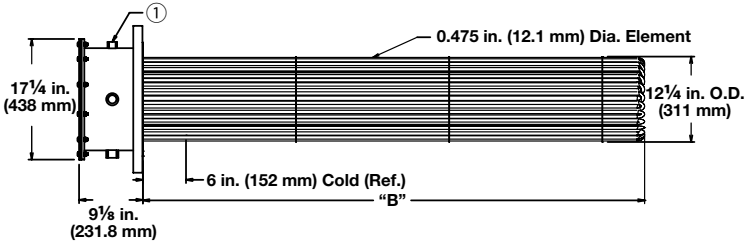
## WATROD ANSI Flange Immersion Heaters



### Application: Process Water

- 14 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 48 W/in <sup>2</sup> Steel Flange 45-Alloy 800 Elements (7.5 W/cm <sup>2</sup> ) | 480   | 315.0 | 3  | 15      | 54 1/2 (1384)     | 300 (136)         | FWN754J5S                 | FWN754J5W        | C/F                    | C/F        |
|                                                                                  | 480   | 375.0 | 3  | 15      | 63 1/2 (1613)     | 310 (141)         | FWN763J5S                 | FWN763J5W        | C/F                    | C/F        |
|                                                                                  |       |       |    |         |                   |                   |                           |                  |                        |            |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



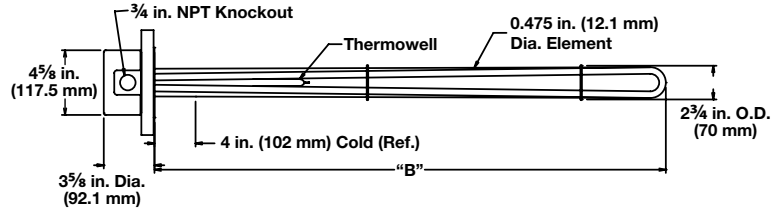
## WATROD ANSI Flange Immersion Heaters



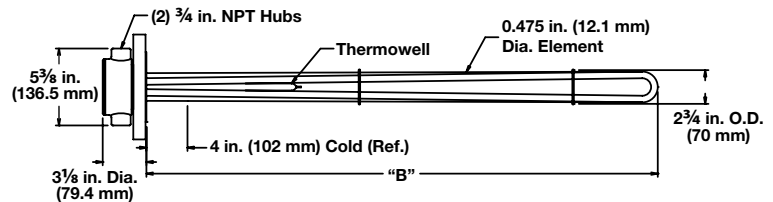
### Application: Forced Air and Caustic Solutions

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

#### General Purpose



#### NEMA 4 Enclosure



| Description                                                                                   | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
| 23 W/in <sup>2</sup> ⑥<br>Steel Flange<br>3-Alloy 800<br>Elements<br>(3.6 W/cm <sup>2</sup> ) |       |      |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
|                                                                                               | 240   | 3.0  | 1  | 18 (457)             | 23 (11)              | FMNA18A10S                   | FMNA18A10W          | C1-17                     | C1-13         |
|                                                                                               | 240   | 3.0  | 3  | 18 (457)             | 23 (11)              | FMNA18A3S                    | FMNA18A3W           | C2-50                     | C2-92         |
|                                                                                               | 480   | 3.0  | 1  | 18 (457)             | 23 (11)              | FMNA18A11S                   | FMNA18A11W          | C/F                       | C/F           |
|                                                                                               | 480   | 3.0  | 3  | 18 (457)             | 23 (11)              | FMNA18A5S                    | FMNA18A5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 4.5  | 1  | 25 1/2 (648)         | 27 (13)              | FMNA25J10S                   | FMNA25J10W          | C/F                       | C/F           |
|                                                                                               | 240   | 4.5  | 3  | 25 1/2 (648)         | 27 (13)              | FMNA25J3S                    | FMNA25J3W           | C2-50                     | C2-92         |
|                                                                                               | 480   | 4.5  | 1  | 25 1/2 (648)         | 27 (13)              | FMNA25J11S                   | FMNA25J11W          | C/F                       | C/F           |
|                                                                                               | 480   | 4.5  | 3  | 25 1/2 (648)         | 27 (13)              | FMNA25J5S                    | FMNA25J5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 6.0  | 1  | 33 (838)             | 28 (13)              | FMNA33A10S                   | FMNA33A10W          | C/F                       | C/F           |
|                                                                                               | 240   | 6.0  | 3  | 33 (838)             | 28 (13)              | FMNA33A3S                    | FMNA33A3W           | C2-50                     | C2-92         |
|                                                                                               | 480   | 6.0  | 1  | 33 (838)             | 28 (13)              | FMNA33A11S                   | FMNA33A11W          | C/F                       | C/F           |
|                                                                                               | 480   | 6.0  | 3  | 33 (838)             | 28 (13)              | FMNA33A5S                    | FMNA33A5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 7.5  | 1  | 40 1/2 (1029)        | 30 (14)              | FMNA40J10S                   | FMNA40J10W          | C/F                       | C/F           |
|                                                                                               | 240   | 7.5  | 3  | 40 1/2 (1029)        | 30 (14)              | FMNA40J3S                    | FMNA40J3W           | C2-50                     | C2-92         |
|                                                                                               | 480   | 7.5  | 1  | 40 1/2 (1029)        | 30 (14)              | FMNA40J11S                   | FMNA40J11W          | C/F                       | C/F           |
|                                                                                               | 480   | 7.5  | 3  | 40 1/2 (1029)        | 30 (14)              | FMNA40J5S                    | FMNA40J5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 9.0  | 1  | 48 (1219)            | 32 (15)              | FMNA48A10S                   | FMNA48A10W          | C/F                       | C/F           |
|                                                                                               | 240   | 9.0  | 3  | 48 (1219)            | 32 (15)              | FMNA48A3S                    | FMNA48A3W           | C2-50                     | C2-92         |
|                                                                                               | 480   | 9.0  | 1  | 48 (1219)            | 32 (15)              | FMNA48A11S                   | FMNA48A11W          | C/F                       | C/F           |
|                                                                                               | 480   | 9.0  | 3  | 48 (1219)            | 32 (15)              | FMNA48A5S                    | FMNA48A5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 12.5 | 3  | 64 1/2 (1638)        | 37 (17)              | FMNA64J3S                    | FMNA64J3W           | C2-236                    | C2-214        |
|                                                                                               | 480   | 12.5 | 1  | 64 1/2 (1638)        | 37 (17)              | FMNA64J11S                   | FMNA64J11W          | C/F                       | C/F           |
|                                                                                               | 480   | 12.5 | 3  | 64 1/2 (1638)        | 37 (17)              | FMNA64J5S                    | FMNA64J5W           | C2-43                     | C2-35         |
|                                                                                               | 240   | 15.0 | 3  | 77 (1956)            | 42 (19)              | FMNA77A3S                    | FMNA77A3W           | C2-236                    | C2-214        |
|                                                                                               | 480   | 15.0 | 1  | 77 (1956)            | 42 (19)              | FMNA77A11S                   | FMNA77A11W          | C/F                       | C/F           |
|                                                                                               | 480   | 15.0 | 3  | 77 (1956)            | 42 (19)              | FMNA77A5S                    | FMNA77A5W           | C2-43                     | C2-35         |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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- ⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



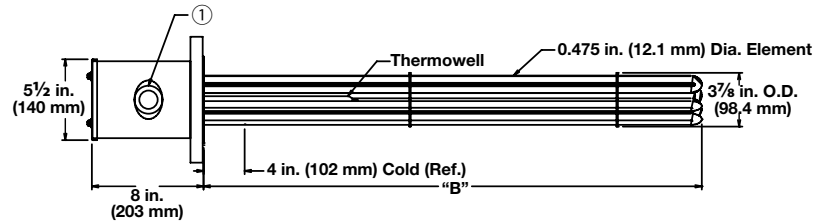
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 4 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                           | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                       |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 6-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 6.0  | 1  | 1       | 18 (457)          | 32 (15)           | FONA18A10S                | FONA18A10W       | C/F                    | C/F        |
|                                                                                       | 240   | 6.0  | 3  | 1       | 18 (457)          | 32 (15)           | FONA18A3S                 | FONA18A3W        | C2-50                  | C2-92      |
|                                                                                       | 480   | 6.0  | 1  | 1       | 18 (457)          | 32 (15)           | FONA18A11S                | FONA18A11W       | C/F                    | C/F        |
|                                                                                       | 480   | 6.0  | 3  | 1       | 18 (457)          | 32 (15)           | FONA18A5S                 | FONA18A5W        | C2-43                  | C2-35      |
|                                                                                       | 240   | 9.0  | 1  | 1       | 25 1/2 (648)      | 36 (17)           | FONA25J10S                | FONA25J10W       | C/F                    | C/F        |
|                                                                                       | 240   | 9.0  | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FONA25J3S                 | FONA25J3W        | C2-50                  | C2-92      |
|                                                                                       | 480   | 9.0  | 1  | 1       | 25 1/2 (648)      | 36 (17)           | FONA25J11S                | FONA25J11W       | C/F                    | C/F        |
|                                                                                       | 480   | 9.0  | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FONA25J5S                 | FONA25J5W        | C2-43                  | C2-35      |
|                                                                                       | 240   | 12.0 | 1  | 2       | 33 (838)          | 39 (18)           | FONA33A10S                | FONA33A10W       | C/F                    | C/F        |
|                                                                                       | 240   | 12.0 | 3  | 1       | 33 (838)          | 39 (18)           | FONA33A3S                 | FONA33A3W        | C2-236                 | C2-214     |
|                                                                                       | 480   | 12.0 | 1  | 1       | 33 (838)          | 39 (18)           | FONA33A11S                | FONA33A11W       | C/F                    | C/F        |
|                                                                                       | 480   | 12.0 | 3  | 1       | 33 (838)          | 39 (18)           | FONA33A5S                 | FONA33A5W        | C2-43                  | C2-35      |
|                                                                                       | 240   | 15.0 | 1  | 2       | 40 1/2 (1029)     | 43 (20)           | FONA40J10S                | FONA40J10W       | C/F                    | C/F        |
|                                                                                       | 240   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 43 (20)           | FONA40J3S                 | FONA40J3W        | C2-236                 | C2-214     |
|                                                                                       | 480   | 15.0 | 1  | 1       | 40 1/2 (1029)     | 43 (20)           | FONA40J11S                | FONA40J11W       | C/F                    | C/F        |
|                                                                                       | 480   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 43 (20)           | FONA40J5S                 | FONA40J5W        | C2-43                  | C2-35      |
|                                                                                       | 240   | 18.0 | 1  | 2       | 48 (1219)         | 48 (22)           | FONA48A10S                | FONA48A10W       | C/F                    | C/F        |
|                                                                                       | 240   | 18.0 | 3  | 1       | 48 (1219)         | 48 (22)           | FONA48A3S                 | FONA48A3W        | C2-236                 | C2-214     |
|                                                                                       | 480   | 18.0 | 1  | 1       | 48 (1219)         | 48 (22)           | FONA48A11S                | FONA48A11W       | C/F                    | C/F        |
|                                                                                       | 480   | 18.0 | 3  | 1       | 48 (1219)         | 48 (22)           | FONA48A5S                 | FONA48A5W        | C2-43                  | C2-35      |
|                                                                                       | 240   | 25.0 | 3  | 2       | 64 1/2 (1638)     | 53 (24)           | FONA64J3S                 | FONA64J3W        | C2-236                 | C2-214     |
|                                                                                       | 480   | 25.0 | 1  | 2       | 64 1/2 (1638)     | 53 (24)           | FONA64J11S                | FONA64J11W       | C/F                    | C/F        |
|                                                                                       | 480   | 25.0 | 3  | 1       | 64 1/2 (1638)     | 53 (24)           | FONA64J5S                 | FONA64J5W        | C2-225                 | C2-226     |
|                                                                                       | 240   | 30.0 | 3  | 2       | 77 (1956)         | 61 (28)           | FONA77A3S                 | FONA77A3W        | C2-236                 | C2-214     |
|                                                                                       | 480   | 30.0 | 1  | 2       | 77 (1956)         | 61 (28)           | FONA77A11S                | FONA77A11W       | C/F                    | C/F        |
|                                                                                       | 480   | 30.0 | 3  | 1       | 77 (1956)         | 61 (28)           | FONA77A5S                 | FONA77A5W        | C2-225                 | C2-226     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

- ⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters

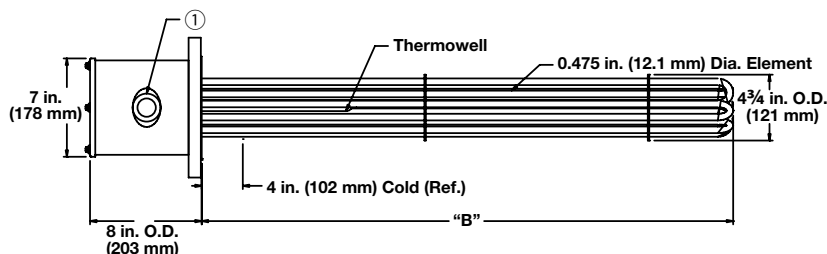


## WATROD ANSI Flange Immersion Heaters

### Application: Forced Air and Caustic Solutions

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                           | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number       | WATCONNECT Part Number |               |
|---------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|-------------------|------------------------|---------------|
|                                                                                       |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure  | Type J T/C             | Type K T/C    |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 6-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 6.0  | 1  | 1       | 18 (457)          | 36 (17)           | <b>FNNA18A10S</b>         | <b>FNNA18A10W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 6.0  | 3  | 1       | 18 (457)          | 36 (17)           | <b>FNNA18A3S</b>          | <b>FNNA18A3W</b>  | <b>C2-50</b>           | <b>C2-92</b>  |
|                                                                                       | 480   | 6.0  | 1  | 1       | 18 (457)          | 36 (17)           | <b>FNNA18A11S</b>         | <b>FNNA18A11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 6.0  | 3  | 1       | 18 (457)          | 36 (17)           | <b>FNNA18A5S</b>          | <b>FNNA18A5W</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 9.0  | 1  | 1       | 25 1/2 (648)      | 40 (19)           | <b>FNNA25J10S</b>         | <b>FNNA25J10W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 9.0  | 3  | 1       | 25 1/2 (648)      | 40 (19)           | <b>FNNA25J3S</b>          | <b>FNNA25J3W</b>  | <b>C2-50</b>           | <b>C2-92</b>  |
|                                                                                       | 480   | 9.0  | 1  | 1       | 25 1/2 (648)      | 40 (19)           | <b>FNNA25J11S</b>         | <b>FNNA25J11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 9.0  | 3  | 1       | 25 1/2 (648)      | 40 (19)           | <b>FNNA25J5S</b>          | <b>FNNA25J5W</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 12.0 | 1  | 2       | 33 (838)          | 43 (20)           | <b>FNNA33A10S</b>         | <b>FNNA33A10W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 12.0 | 3  | 1       | 33 (838)          | 43 (20)           | <b>FNNA33A3S</b>          | <b>FNNA33A3W</b>  | <b>C2-236</b>          | <b>C2-214</b> |
|                                                                                       | 480   | 12.0 | 1  | 1       | 33 (838)          | 43 (20)           | <b>FNNA33A11S</b>         | <b>FNNA33A11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 12.0 | 3  | 1       | 33 (838)          | 43 (20)           | <b>FNNA33A5S</b>          | <b>FNNA33A5W</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 15.0 | 1  | 2       | 40 1/2 (1029)     | 47 (22)           | <b>FNNA40J10S</b>         | <b>FNNA40J10W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 47 (22)           | <b>FNNA40J3S</b>          | <b>FNNA40J3W</b>  | <b>C2-236</b>          | <b>C2-214</b> |
|                                                                                       | 480   | 15.0 | 1  | 1       | 40 1/2 (1029)     | 47 (22)           | <b>FNNA40J11S</b>         | <b>FNNA40J11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 47 (22)           | <b>FNNA40J5S</b>          | <b>FNNA40J5W</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 18.0 | 1  | 2       | 48 (1219)         | 52 (24)           | <b>FNNA48A10S</b>         | <b>FNNA48A10W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 18.0 | 3  | 1       | 48 (1219)         | 52 (24)           | <b>FNNA48A3S</b>          | <b>FNNA48A3W</b>  | <b>C2-236</b>          | <b>C2-214</b> |
|                                                                                       | 480   | 18.0 | 1  | 1       | 48 (1219)         | 52 (24)           | <b>FNNA48A11S</b>         | <b>FNNA48A11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 18.0 | 3  | 1       | 48 (1219)         | 52 (24)           | <b>FNNA48A5S</b>          | <b>FNNA48A5W</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 25.0 | 3  | 2       | 64 1/2 (1638)     | 57 (26)           | <b>FNNA64J3S</b>          | <b>FNNA64J3W</b>  | <b>C2-218</b>          | <b>C2-224</b> |
|                                                                                       | 480   | 25.0 | 1  | 2       | 64 1/2 (1638)     | 57 (26)           | <b>FNNA64J11S</b>         | <b>FNNA64J11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 25.0 | 3  | 1       | 64 1/2 (1638)     | 57 (26)           | <b>FNNA64J5S</b>          | <b>FNNA64J5W</b>  | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                       | 240   | 30.0 | 3  | 2       | 77 (1956)         | 65 (30)           | <b>FNNA77A3S</b>          | <b>FNNA77A3W</b>  | <b>C2-218</b>          | <b>C2-224</b> |
|                                                                                       | 480   | 30.0 | 1  | 2       | 77 (1956)         | 65 (30)           | <b>FNNA77A11S</b>         | <b>FNNA77A11W</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 30.0 | 3  | 1       | 77 (1956)         | 65 (30)           | <b>FNNA77A5S</b>          | <b>FNNA77A5W</b>  | <b>C2-225</b>          | <b>C2-226</b> |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)



# Immersion Heaters



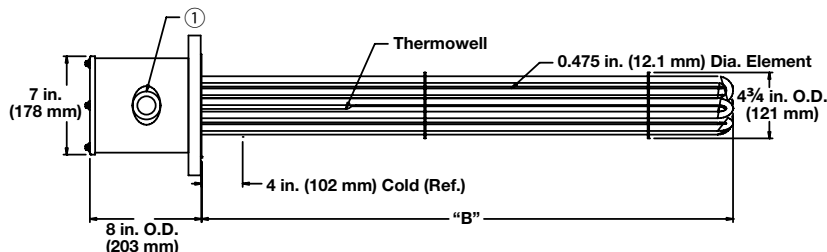
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                           | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number        | WATCONNECT Part Number |               |
|---------------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|--------------------|------------------------|---------------|
|                                                                                       |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure   | Type J T/C             | Type K T/C    |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 9-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 9.0  | 1  | 1       | 18 (457)          | 39 (18)           | <b>FNNA18A10XS</b>        | <b>FNNA18A10XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 9.0  | 3  | 1       | 18 (457)          | 39 (18)           | <b>FNNA18A3XS</b>         | <b>FNNA18A3XW</b>  | <b>C2-50</b>           | <b>C2-92</b>  |
|                                                                                       | 480   | 9.0  | 1  | 1       | 18 (457)          | 39 (18)           | <b>FNNA18A11XS</b>        | <b>FNNA18A11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 9.0  | 3  | 1       | 18 (457)          | 39 (18)           | <b>FNNA18A5XS</b>         | <b>FNNA18A5XW</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 14.0 | 1  | 3       | 25 1/2 (648)      | 45 (21)           | <b>FNNA25J10XS</b>        | <b>FNNA25J10XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 14.0 | 3  | 1       | 25 1/2 (648)      | 45 (21)           | <b>FNNA25J3XS</b>         | <b>FNNA25J3XW</b>  | <b>C2-236</b>          | <b>C2-214</b> |
|                                                                                       | 480   | 14.0 | 1  | 1       | 25 1/2 (648)      | 45 (21)           | <b>FNNA25J11XS</b>        | <b>FNNA25J11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 14.0 | 3  | 1       | 25 1/2 (648)      | 45 (21)           | <b>FNNA25J5XS</b>         | <b>FNNA25J5XW</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 18.0 | 1  | 3       | 33 (838)          | 48 (22)           | <b>FNNA33A10XS</b>        | <b>FNNA33A10XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 18.0 | 3  | 1       | 33 (838)          | 48 (22)           | <b>FNNA33A3XS</b>         | <b>FNNA33A3XW</b>  | <b>C2-236</b>          | <b>C2-214</b> |
|                                                                                       | 480   | 18.0 | 1  | 1       | 33 (838)          | 48 (22)           | <b>FNNA33A11XS</b>        | <b>FNNA33A11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 18.0 | 3  | 1       | 33 (838)          | 48 (22)           | <b>FNNA33A5XS</b>         | <b>FNNA33A5XW</b>  | <b>C2-43</b>           | <b>C2-35</b>  |
|                                                                                       | 240   | 23.0 | 1  | 3       | 40 1/2 (1029)     | 53 (24)           | <b>FNNA40J10XS</b>        | <b>FNNA40J10XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 23.0 | 3  | 3       | 40 1/2 (1029)     | 53 (24)           | <b>FNNA40J3XS</b>         | <b>FNNA40J3XW</b>  | <b>C4-143</b>          | <b>C4-142</b> |
|                                                                                       | 480   | 23.0 | 1  | 1       | 40 1/2 (1029)     | 53 (24)           | <b>FNNA40J11XS</b>        | <b>FNNA40J11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 23.0 | 3  | 1       | 40 1/2 (1029)     | 53 (24)           | <b>FNNA40J5XS</b>         | <b>FNNA40J5XW</b>  | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                       | 240   | 27.0 | 1  | 3       | 48 (1219)         | 60 (28)           | <b>FNNA48A10XS</b>        | <b>FNNA48A10XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 240   | 27.0 | 3  | 3       | 48 (1219)         | 60 (28)           | <b>FNNA48A3XS</b>         | <b>FNNA48A3XW</b>  | <b>C4-143</b>          | <b>C4-142</b> |
|                                                                                       | 480   | 27.0 | 1  | 3       | 48 (1219)         | 60 (28)           | <b>FNNA48A11XS</b>        | <b>FNNA48A11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 27.0 | 3  | 1       | 48 (1219)         | 60 (28)           | <b>FNNA48A5XS</b>         | <b>FNNA48A5XW</b>  | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                       | 240   | 38.0 | 3  | 3       | 64 1/2 (1638)     | 68 (31)           | <b>FNNA64J3XS</b>         | <b>FNNA64J3XW</b>  | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                       | 480   | 38.0 | 1  | 3       | 64 1/2 (1638)     | 68 (31)           | <b>FNNA64J11XS</b>        | <b>FNNA64J11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 38.0 | 3  | 1       | 64 1/2 (1638)     | 68 (31)           | <b>FNNA64J5XS</b>         | <b>FNNA64J5XW</b>  | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                       | 240   | 45.0 | 3  | 3       | 77 (1956)         | 78 (36)           | <b>FNNA77A3XS</b>         | <b>FNNA77A3XW</b>  | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                       | 480   | 45.0 | 1  | 3       | 77 (1956)         | 78 (36)           | <b>FNNA77A11XS</b>        | <b>FNNA77A11XW</b> | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                       | 480   | 45.0 | 3  | 3       | 77 (1956)         | 78 (36)           | <b>FNNA77A5XS</b>         | <b>FNNA77A5XW</b>  | <b>C4-150</b>          | <b>C4-151</b> |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



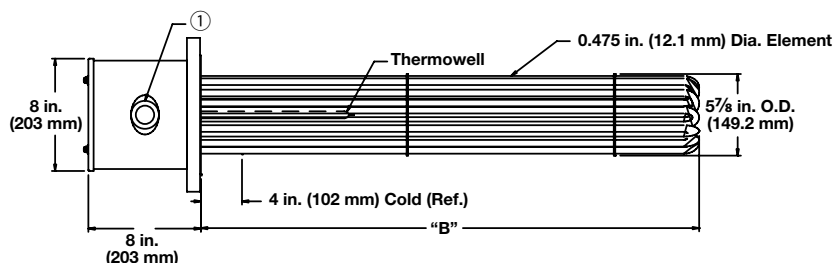
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                            | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                        |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 12-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 12.0 | 1  | 2       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPNA17R10S                | FPNA17R10W       | C/F                    | C/F        |
|                                                                                        | 240   | 12.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPNA17R3S                 | FPNA17R3W        | C2-236                 | C2-214     |
|                                                                                        | 480   | 12.0 | 1  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPNA17R11S                | FPNA17R11W       | C/F                    | C/F        |
|                                                                                        | 480   | 12.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPNA17R5S                 | FPNA17R5W        | C2-43                  | C2-35      |
|                                                                                        | 240   | 18.0 | 1  | 2       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPNA25G10S                | FPNA25G10W       | C/F                    | C/F        |
|                                                                                        | 240   | 18.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPNA25G3S                 | FPNA25G3W        | C2-236                 | C2-214     |
|                                                                                        | 480   | 18.0 | 1  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPNA25G11S                | FPNA25G11W       | C/F                    | C/F        |
|                                                                                        | 480   | 18.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPNA25G5S                 | FPNA25G5W        | C2-43                  | C2-35      |
|                                                                                        | 240   | 24.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPNA32R10S                | FPNA32R10W       | C/F                    | C/F        |
|                                                                                        | 240   | 24.0 | 3  | 2       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPNA32R3S                 | FPNA32R3W        | C2-218                 | C2-224     |
|                                                                                        | 480   | 24.0 | 1  | 2       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPNA32R11S                | FPNA32R11W       | C/F                    | C/F        |
|                                                                                        | 480   | 24.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPNA32R5S                 | FPNA32R5W        | C2-225                 | C2-226     |
|                                                                                        | 240   | 30.0 | 1  | 3       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPNA40G10S                | FPNA40G10W       | C/F                    | C/F        |
|                                                                                        | 240   | 30.0 | 3  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPNA40G3S                 | FPNA40G3W        | C2-218                 | C2-224     |
|                                                                                        | 480   | 30.0 | 1  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPNA40G11S                | FPNA40G11W       | C/F                    | C/F        |
|                                                                                        | 480   | 30.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPNA40G5S                 | FPNA40G5W        | C2-225                 | C2-226     |
|                                                                                        | 240   | 36.0 | 1  | 4       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPNA47R10S                | FPNA47R10W       | C/F                    | C/F        |
|                                                                                        | 240   | 36.0 | 3  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPNA47R3S                 | FPNA47R3W        | C2-218                 | C2-224     |
|                                                                                        | 480   | 36.0 | 1  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPNA47R11S                | FPNA47R11W       | C/F                    | C/F        |
|                                                                                        | 480   | 36.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPNA47R5S                 | FPNA47R5W        | C2-225                 | C2-226     |
|                                                                                        | 240   | 50.0 | 3  | 4       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPNA64G3S                 | FPNA64G3W        | C4-148                 | C4-149     |
|                                                                                        | 480   | 50.0 | 1  | 3       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPNA64G11S                | FPNA64G11W       | C/F                    | C/F        |
|                                                                                        | 480   | 50.0 | 3  | 2       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPNA64G5S                 | FPNA64G5W        | C2-229                 | C2-230     |
|                                                                                        | 240   | 60.0 | 3  | 4       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPNA76R3S                 | FPNA76R3W        | C4-148                 | C4-149     |
|                                                                                        | 480   | 60.0 | 1  | 3       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPNA76R11S                | FPNA76R11W       | C/F                    | C/F        |
|                                                                                        | 480   | 60.0 | 3  | 2       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPNA76R5S                 | FPNA76R5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

- ⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



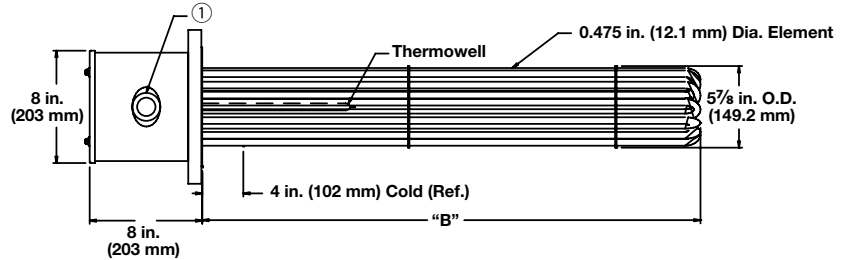
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                            | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                        |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 15-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 15.0 | 1  | 3       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPNA17R10XS               | FPNA17R10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 15.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPNA17R3XS                | FPNA17R3XW       | C2-236                 | C2-214     |
|                                                                                        | 480   | 15.0 | 1  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPNA17R11XS               | FPNA17R11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 15.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPNA17R5XS                | FPNA17R5XW       | C2-43                  | C2-35      |
|                                                                                        | 240   | 23.0 | 1  | 3       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPNA25G10XS               | FPNA25G10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 23.0 | 3  | 5       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPNA25G3XS                | FPNA25G3XW       | C4-143                 | C4-142     |
|                                                                                        | 480   | 23.0 | 1  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPNA25G11XS               | FPNA25G11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 23.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPNA25G5XS                | FPNA25G5XW       | C2-225                 | C2-226     |
|                                                                                        | 240   | 30.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPNA32R10XS               | FPNA32R10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 30.0 | 3  | 5       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPNA32R3XS                | FPNA32R3XW       | C4-144                 | C4-145     |
|                                                                                        | 480   | 30.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPNA32R11XS               | FPNA32R11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 30.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPNA32R5XS                | FPNA32R5XW       | C2-224                 | C2-226     |
|                                                                                        | 240   | 38.0 | 1  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPNA40G10XS               | FPNA40G10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 38.0 | 3  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPNA40G3XS                | FPNA40G3XW       | C4-144                 | C4-145     |
|                                                                                        | 480   | 38.0 | 1  | 3       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPNA40G11XS               | FPNA40G11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 38.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPNA40G5XS                | FPNA40G5XW       | C2-225                 | C2-226     |
|                                                                                        | 240   | 45.0 | 1  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPNA47R10XS               | FPNA47R10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 45.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPNA47R3XS                | FPNA47R3XW       | C4-144                 | C4-145     |
|                                                                                        | 480   | 45.0 | 1  | 3       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPNA47R11XS               | FPNA47R11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 45.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPNA47R5XS                | FPNA47R5XW       | C4-152                 | C4-153     |
|                                                                                        | 240   | 63.0 | 3  | 5       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPNA64G3XS                | FPNA64G3XW       | C/F                    | C/F        |
|                                                                                        | 480   | 63.0 | 1  | 3       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPNA64G11XS               | FPNA64G11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 63.0 | 3  | 5       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPNA64G5XS                | FPNA64G5XW       | C4-152                 | C4-153     |
|                                                                                        | 240   | 75.0 | 3  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPNA76R3XS                | FPNA76R3XW       | C/F                    | C/F        |
|                                                                                        | 480   | 75.0 | 1  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPNA76R11XS               | FPNA76R11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 75.0 | 3  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPNA76R5XS                | FPNA76R5XW       | C4-152                 | C4-153     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

- ⑥ Can be rewired wye to produce  $\frac{1}{3}$  of the original kW and watt density (3-phase only)

# Immersion Heaters

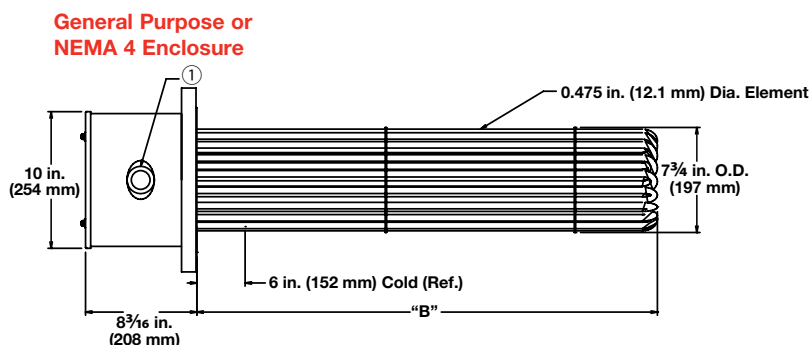


## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 8 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                            | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                         | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------------|-------|------|----|---------|-------------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                        |       |      |    |         |                                           |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 18-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 30.0 | 1  | 3       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRNA32N10S                | FRNA32N10W       | C/F                    | C/F        |
|                                                                                        | 240   | 30.0 | 3  | 2       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRNA32N3S                 | FRNA32N3W        | C2-218                 | C2-224     |
|                                                                                        | 480   | 30.0 | 1  | 2       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRNA32N11S                | FRNA32N11W       | C/F                    | C/F        |
|                                                                                        | 480   | 30.0 | 3  | 1       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRNA32N5S                 | FRNA32N5W        | C2-225                 | C2-226     |
|                                                                                        | 240   | 40.0 | 3  | 3       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRNA43E3S                 | FRNA43E3W        | C4-144                 | C4-145     |
|                                                                                        | 480   | 40.0 | 1  | 2       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRNA43E11S                | FRNA43E11W       | C/F                    | C/F        |
|                                                                                        | 480   | 40.0 | 3  | 3       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRNA43E5S                 | FRNA43E5W        | C4-150                 | C4-151     |
|                                                                                        | 240   | 50.0 | 3  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRNA51M3S                 | FRNA51M3W        | C4-144                 | C4-145     |
|                                                                                        | 480   | 50.0 | 1  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRNA51M11S                | FRNA51M11W       | C/F                    | C/F        |
|                                                                                        | 480   | 50.0 | 3  | 2       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRNA51M5S                 | FRNA51M5W        | C2-229                 | C2-230     |
| <b>23 W/in<sup>2</sup> ⑥ Steel Flange 24-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 40.0 | 1  | 4       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRNA33D10XS               | FRNA33D10XW      | C/F                    | C/F        |
|                                                                                        | 240   | 40.0 | 3  | 4       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRNA33D3XS                | FRNA33D3XW       | C4-146                 | C4-147     |
|                                                                                        | 480   | 40.0 | 1  | 2       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRNA33D11XS               | FRNA33D11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 40.0 | 3  | 2       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRNA33D5XS                | FRNA33D5XW       | C2-227                 | C2-228     |
|                                                                                        | 240   | 53.0 | 3  | 4       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRNA43M3XS                | FRNA43M3XW       | C4-148                 | C4-149     |
|                                                                                        | 480   | 53.0 | 1  | 3       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRNA43M11XS               | FRNA43M11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 53.0 | 3  | 2       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRNA43M5XS                | FRNA43M5XW       | C2-229                 | C2-230     |
|                                                                                        | 240   | 67.0 | 3  | 4       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRNA51M3XS                | FRNA51M3XW       | C4-148                 | C4-149     |
|                                                                                        | 480   | 67.0 | 1  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRNA51M11XS               | FRNA51M11XW      | C/F                    | C/F        |
|                                                                                        | 480   | 67.0 | 3  | 2       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRNA51M5XS                | FRNA51M5XW       | C2-229                 | C2-230     |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

⑥ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



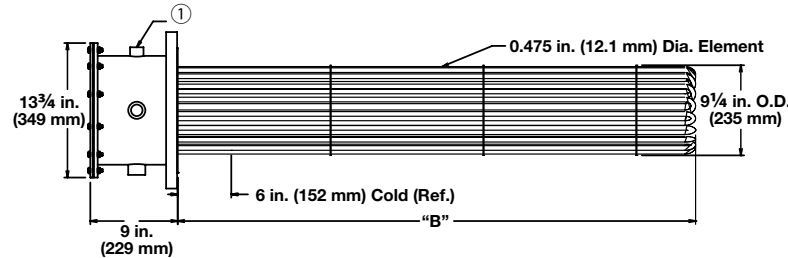
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 10 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or  
NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                  | Volts | kW   | Ph | # Circ. | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part Number                  | Part Number         | WATCONNECT<br>Part Number |               |
|----------------------------------------------------------------------------------------------|-------|------|----|---------|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                              |       |      |    |         |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| 23 W/in <sup>2</sup><br>Steel Flange<br>27-Alloy 800<br>Elements<br>(3.6 W/cm <sup>2</sup> ) | 240   | 45.0 | 3  | 3       | 33 1/4 (845)         | 165 (75)             | FSNA33E3S                    | FSNA33E3W           | C4-144                    | C4-145        |
|                                                                                              | 480   | 45.0 | 3  | 3       | 33 1/4 (845)         | 165 (75)             | FSNA33E5S                    | FSNA33E5W           | C4-150                    | C4-151        |
|                                                                                              | 240   | 60.0 | 3  | 3       | 43 3/4 (1111)        | 195 (89)             | FSNA43N3S                    | FSNA43N3W           | C4-144                    | C4-145        |
|                                                                                              | 480   | 60.0 | 3  | 3       | 43 3/4 (1111)        | 195 (89)             | FSNA43N5S                    | FSNA43N5W           | C4-150                    | C4-151        |
|                                                                                              | 240   | 75.0 | 3  | 9       | 51 3/4 (1314)        | 230 (105)            | FSNA51N3S                    | FSNA51N3W           | C/F                       | C/F           |
|                                                                                              | 480   | 75.0 | 3  | 3       | 51 3/4 (1314)        | 230 (105)            | FSNA51N5S                    | FSNA51N5W           | C4-152                    | C4-153        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



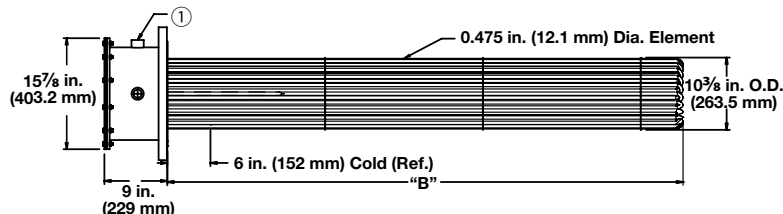
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 12 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                          | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |               |
|--------------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|---------------|
|                                                                                      |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C    |
| <b>23 W/in<sup>2</sup> Steel Flange 36-Alloy 800 Elements (3.6 W/cm<sup>2</sup>)</b> | 480   | 60.0  | 3  | 3       | 33 1/8 (841.4)    | 205 (93)          | <b>FTNA33C5S</b>          | <b>FTNA33C5W</b> | <b>C4-150</b>          | <b>C4-151</b> |
|                                                                                      | 480   | 80.0  | 3  | 3       | 43 5/8 (1108.1)   | 240 (109)         | <b>FTNA43L5S</b>          | <b>FTNA43L5W</b> | <b>C4-152</b>          | <b>C4-153</b> |
|                                                                                      | 480   | 100.0 | 3  | 3       | 51 5/8 (1311.3)   | 280 (127)         | <b>FTNA51L5S</b>          | <b>FTNA51L5W</b> | <b>C4-152</b>          | <b>C4-153</b> |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



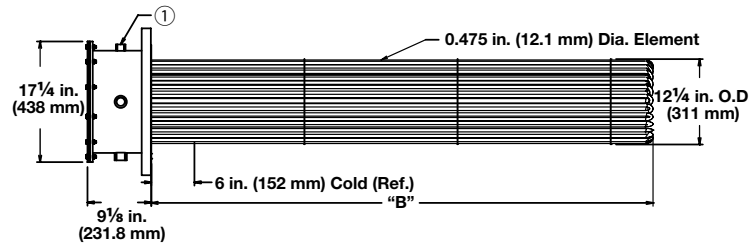
## WATROD ANSI Flange Immersion Heaters



### Application: Forced Air and Caustic Solutions

- 14 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup> Steel Flange 45-Alloy 800 Elements (3.6 W/cm <sup>2</sup> ) | 480   | 75.0  | 3  | 3       | 33 (838)          | 225 (102)         | FWNA33A5S                 | FWNA33A5W        | C4-152                 | C4-153     |
|                                                                                  | 480   | 100.0 | 3  | 3       | 43 1/2 (1105)     | 255 (116)         | FWNA43J5S                 | FWNA43J5W        | C4-152                 | C4-153     |
|                                                                                  | 480   | 125.0 | 3  | 5       | 51 1/2 (1308)     | 300 (136)         | FWNA51J5S                 | FWNA51J5W        | C/F                    | C/F        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



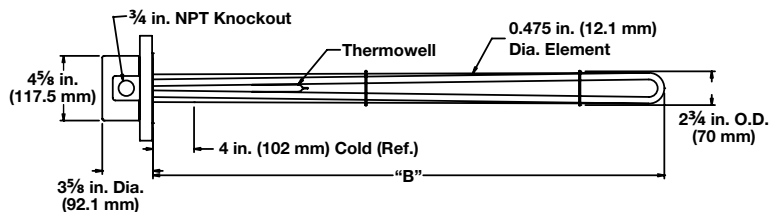
## WATROD ANSI Flange Immersion Heaters



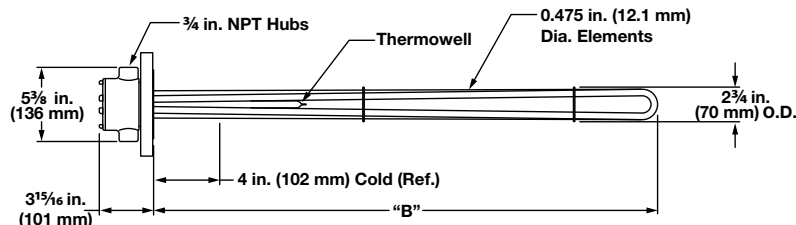
### Application: Lightweight Oils and Heat Transfer Oils

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

#### General Purpose



#### NEMA 4 Enclosure



| Description                                                                             | Volts | kW   | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|-----------------------------------------------------------------------------------------|-------|------|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                         |       |      |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| 23 W/in <sup>2</sup><br>Steel Flange<br>3-Steel<br>Elements<br>(3.6 W/cm <sup>2</sup> ) | 240   | 3.0  | 1  | 18 (457)             | 23 (11)              | FMS718A10S                   | FMS718A10W          | C1-17                     | C1-13         |
|                                                                                         | 240   | 3.0  | 3  | 18 (457)             | 23 (11)              | FMS718A3S                    | FMS718A3W           | C2-50                     | C2-92         |
|                                                                                         | 480   | 3.0  | 1  | 18 (457)             | 23 (11)              | FMS718A11S                   | FMS718A11W          | C/F                       | C/F           |
|                                                                                         | 480   | 3.0  | 3  | 18 (457)             | 23 (11)              | FMS718A5S                    | FMS718A5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 4.5  | 1  | 25 1/2 (648)         | 27 (13)              | FMS725J10S                   | FMS725J10W          | C/F                       | C/F           |
|                                                                                         | 240   | 4.5  | 3  | 25 1/2 (648)         | 27 (13)              | FMS725J3S                    | FMS725J3W           | C2-50                     | C2-92         |
|                                                                                         | 480   | 4.5  | 1  | 25 1/2 (648)         | 27 (13)              | FMS725J11S                   | FMS725J11W          | C/F                       | C/F           |
|                                                                                         | 480   | 4.5  | 3  | 25 1/2 (648)         | 27 (13)              | FMS725J5S                    | FMS725J5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 6.0  | 1  | 33 (838)             | 28 (13)              | FMS733A10S                   | FMS733A10W          | C/F                       | C/F           |
|                                                                                         | 240   | 6.0  | 3  | 33 (838)             | 28 (13)              | FMS733A3S                    | FMS733A3W           | C2-50                     | C2-92         |
|                                                                                         | 480   | 6.0  | 1  | 33 (838)             | 28 (13)              | FMS733A11S                   | FMS733A11W          | C/F                       | C/F           |
|                                                                                         | 480   | 6.0  | 3  | 33 (838)             | 28 (13)              | FMS733A5S                    | FMS733A5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 7.5  | 1  | 40 1/2 (1029)        | 30 (14)              | FMS740J10S                   | FMS740J10W          | C/F                       | C/F           |
|                                                                                         | 240   | 7.5  | 3  | 40 1/2 (1029)        | 30 (14)              | FMS740J3S                    | FMS740J3W           | C2-50                     | C2-92         |
|                                                                                         | 480   | 7.5  | 1  | 40 1/2 (1029)        | 30 (14)              | FMS740J11S                   | FMS740J11W          | C/F                       | C/F           |
|                                                                                         | 480   | 7.5  | 3  | 40 1/2 (1029)        | 30 (14)              | FMS740J5S                    | FMS740J5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 9.0  | 1  | 48 (1219)            | 32 (15)              | FMS748A10S                   | FMS748A10W          | C/F                       | C/F           |
|                                                                                         | 240   | 9.0  | 3  | 48 (1219)            | 32 (15)              | FMS748A3S                    | FMS748A3W           | C2-50                     | C2-92         |
|                                                                                         | 480   | 9.0  | 1  | 48 (1219)            | 32 (15)              | FMS748A11S                   | FMS748A11W          | C/F                       | C/F           |
|                                                                                         | 480   | 9.0  | 3  | 48 (1219)            | 32 (15)              | FMS748A5S                    | FMS748A5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 12.5 | 3  | 64 1/2 (1638)        | 37 (17)              | FMS764J3S                    | FMS764J3W           | C2-236                    | C2-214        |
|                                                                                         | 480   | 12.5 | 1  | 64 1/2 (1638)        | 37 (17)              | FMS764J11S                   | FMS764J11W          | C/F                       | C/F           |
|                                                                                         | 480   | 12.5 | 3  | 64 1/2 (1638)        | 37 (17)              | FMS764J5S                    | FMS764J5W           | C2-43                     | C2-35         |
|                                                                                         | 240   | 15.0 | 3  | 77 (1956)            | 42 (19)              | FMS777A3S                    | FMS777A3W           | C2-236                    | C2-214        |
|                                                                                         | 480   | 15.0 | 1  | 77 (1956)            | 42 (19)              | FMS777A11S                   | FMS777A11W          | C/F                       | C/F           |
|                                                                                         | 480   | 15.0 | 3  | 77 (1956)            | 42 (19)              | FMS777A5S                    | FMS777A5W           | C2-43                     | C2-35         |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



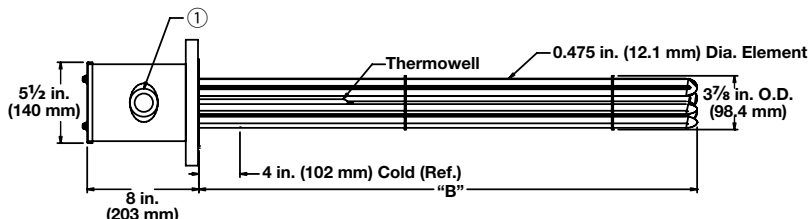
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 4 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                     | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                 |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> Steel Flange 6-Steel Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 6.0  | 1  | 1       | 18 (457)          | 32 (15)           | FOS718A10S                | FOS718A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 6.0  | 3  | 1       | 18 (457)          | 32 (15)           | FOS718A3S                 | FOS718A3W        | C2-50                  | C2-92      |
|                                                                                 | 480   | 6.0  | 1  | 1       | 18 (457)          | 32 (15)           | FOS718A11S                | FOS718A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 6.0  | 3  | 1       | 18 (457)          | 32 (15)           | FOS718A5S                 | FOS718A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 9.0  | 1  | 1       | 25 1/2 (648)      | 36 (17)           | FOS725J10S                | FOS725J10W       | C/F                    | C/F        |
|                                                                                 | 240   | 9.0  | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FOS725J3S                 | FOS725J3W        | C2-50                  | C2-92      |
|                                                                                 | 480   | 9.0  | 1  | 1       | 25 1/2 (648)      | 36 (17)           | FOS725J11S                | FOS725J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 9.0  | 3  | 1       | 25 1/2 (648)      | 36 (17)           | FOS725J5S                 | FOS725J5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 12.0 | 1  | 2       | 33 (838)          | 39 (18)           | FOS733A10S                | FOS733A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 12.0 | 3  | 1       | 33 (838)          | 39 (18)           | FOS733A3S                 | FOS733A3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 12.0 | 1  | 1       | 33 (838)          | 39 (18)           | FOS733A11S                | FOS733A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 12.0 | 3  | 1       | 33 (838)          | 39 (18)           | FOS733A5S                 | FOS733A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 15.0 | 1  | 2       | 40 1/2 (1029)     | 43 (20)           | FOS740J10S                | FOS740J10W       | C/F                    | C/F        |
|                                                                                 | 240   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 43 (20)           | FOS740J3S                 | FOS740J3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 15.0 | 1  | 1       | 40 1/2 (1029)     | 43 (20)           | FOS740J11S                | FOS740J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 43 (20)           | FOS740J5S                 | FOS740J5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 18.0 | 1  | 2       | 48 (1219)         | 48 (22)           | FOS748A10S                | FOS748A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 18.0 | 3  | 1       | 48 (1219)         | 48 (22)           | FOS748A3S                 | FOS748A3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 18.0 | 1  | 1       | 48 (1219)         | 48 (22)           | FOS748A11S                | FOS748A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 18.0 | 3  | 1       | 48 (1219)         | 48 (22)           | FOS748A5S                 | FOS748A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 25.0 | 3  | 2       | 64 1/2 (1638)     | 53 (24)           | FOS764J3S                 | FOS764J3W        | C2-218                 | C2-224     |
|                                                                                 | 480   | 25.0 | 1  | 2       | 64 1/2 (1638)     | 53 (24)           | FOS764J11S                | FOS764J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 25.0 | 3  | 1       | 64 1/2 (1638)     | 53 (24)           | FOS764J5S                 | FOS764J5W        | C2-225                 | C2-226     |
|                                                                                 | 240   | 30.0 | 3  | 2       | 77 (1956)         | 61 (28)           | FOS777A3S                 | FOS777A3W        | C2-218                 | C2-224     |
|                                                                                 | 480   | 30.0 | 1  | 2       | 77 (1956)         | 61 (28)           | FOS777A11S                | FOS777A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 30.0 | 3  | 1       | 77 (1956)         | 61 (28)           | FOS777A5S                 | FOS777A5W        | C2-225                 | C2-226     |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



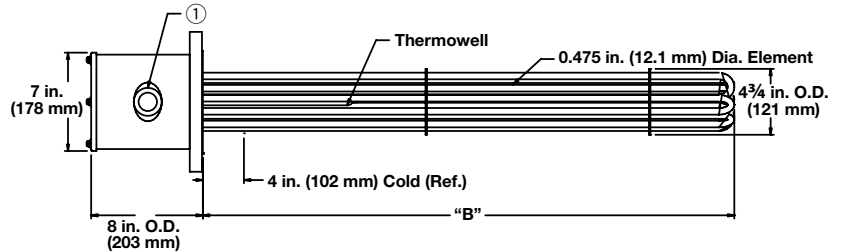
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                     | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                 |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> Steel Flange 6-Steel Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 6.0  | 1  | 1       | 18 (457)          | 36 (17)           | FNS718A10S                | FNS718A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 6.0  | 3  | 1       | 18 (457)          | 36 (17)           | FNS718A3S                 | FNS718A3W        | C2-50                  | C2-92      |
|                                                                                 | 480   | 6.0  | 1  | 1       | 18 (457)          | 36 (17)           | FNS718A11S                | FNS718A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 6.0  | 3  | 1       | 18 (457)          | 36 (17)           | FNS718A5S                 | FNS718A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 9.0  | 1  | 1       | 25 1/2 (648)      | 40 (19)           | FNS725J10S                | FNS725J10W       | C/F                    | C/F        |
|                                                                                 | 240   | 9.0  | 3  | 1       | 25 1/2 (648)      | 40 (19)           | FNS725J3S                 | FNS725J3W        | C2-50                  | C2-92      |
|                                                                                 | 480   | 9.0  | 1  | 1       | 25 1/2 (648)      | 40 (19)           | FNS725J11S                | FNS725J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 9.0  | 3  | 1       | 25 1/2 (648)      | 40 (19)           | FNS725J5S                 | FNS725J5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 12.0 | 1  | 2       | 33 (838)          | 43 (20)           | FNS733A10S                | FNS733A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 12.0 | 3  | 1       | 33 (838)          | 43 (20)           | FNS733A3S                 | FNS733A3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 12.0 | 1  | 1       | 33 (838)          | 43 (20)           | FNS733A11S                | FNS733A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 12.0 | 3  | 1       | 33 (838)          | 43 (20)           | FNS733A5S                 | FNS733A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 15.0 | 1  | 2       | 40 1/2 (1029)     | 47 (22)           | FNS740J10S                | FNS740J10W       | C/F                    | C/F        |
|                                                                                 | 240   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 47 (22)           | FNS740J3S                 | FNS740J3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 15.0 | 1  | 1       | 40 1/2 (1029)     | 47 (22)           | FNS740J11S                | FNS740J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 47 (22)           | FNS740J5S                 | FNS740J5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 18.0 | 1  | 2       | 48 (1219)         | 52 (24)           | FNS748A10S                | FNS748A10W       | C/F                    | C/F        |
|                                                                                 | 240   | 18.0 | 3  | 1       | 48 (1219)         | 52 (24)           | FNS748A3S                 | FNS748A3W        | C2-236                 | C2-214     |
|                                                                                 | 480   | 18.0 | 1  | 1       | 48 (1219)         | 52 (24)           | FNS748A11S                | FNS748A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 18.0 | 3  | 1       | 48 (1219)         | 52 (24)           | FNS748A5S                 | FNS748A5W        | C2-43                  | C2-35      |
|                                                                                 | 240   | 25.0 | 3  | 2       | 64 1/2 (1638)     | 57 (26)           | FNS764J3S                 | FNS764J3W        | C2-218                 | C2-224     |
|                                                                                 | 480   | 25.0 | 1  | 2       | 64 1/2 (1638)     | 57 (26)           | FNS764J11S                | FNS764J11W       | C/F                    | C/F        |
|                                                                                 | 480   | 25.0 | 3  | 1       | 64 1/2 (1638)     | 57 (26)           | FNS764J5S                 | FNS764J5W        | C2-225                 | C2-226     |
|                                                                                 | 240   | 30.0 | 3  | 2       | 77 (1956)         | 65 (30)           | FNS777A3S                 | FNS777A3W        | C2-218                 | C2-224     |
|                                                                                 | 480   | 30.0 | 1  | 2       | 77 (1956)         | 65 (30)           | FNS777A11S                | FNS777A11W       | C/F                    | C/F        |
|                                                                                 | 480   | 30.0 | 3  | 1       | 77 (1956)         | 65 (30)           | FNS777A5S                 | FNS777A5W        | C2-225                 | C2-226     |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

# Immersion Heaters



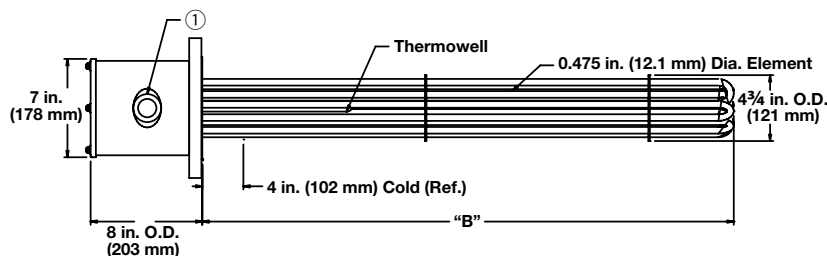
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                     | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lb (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|---------------------------------------------------------------------------------|-------|------|----|---------|-------------------|------------------|---------------------------|------------------|------------------------|------------|
|                                                                                 |       |      |    |         |                   |                  | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> Steel Flange 9-Steel Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 9.0  | 1  | 1       | 18 (457)          | 39 (18)          | FNS718A10XS               | FNS718A10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 9.0  | 3  | 1       | 18 (457)          | 39 (18)          | FNS718A3XS                | FNS718A3XW       | C2-50                  | C2-92      |
|                                                                                 | 480   | 9.0  | 1  | 1       | 18 (457)          | 39 (18)          | FNS718A11XS               | FNS718A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 9.0  | 3  | 1       | 18 (457)          | 39 (18)          | FNS718A5XS                | FNS718A5XW       | C2-43                  | C2-35      |
|                                                                                 | 240   | 14.0 | 1  | 3       | 25 1/2 (648)      | 45 (21)          | FNS725J10XS               | FNS725J10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 14.0 | 3  | 1       | 25 1/2 (648)      | 45 (21)          | FNS725J3XS                | FNS725J3XW       | C2-236                 | C2-214     |
|                                                                                 | 480   | 14.0 | 1  | 1       | 25 1/2 (648)      | 45 (21)          | FNS725J11XS               | FNS725J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 14.0 | 3  | 1       | 25 1/2 (648)      | 45 (21)          | FNS725J5XS                | FNS725J5XW       | C2-43                  | C2-35      |
|                                                                                 | 240   | 18.0 | 1  | 3       | 33 (838)          | 48 (22)          | FNS733A10XS               | FNS733A10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 18.0 | 3  | 1       | 33 (838)          | 48 (22)          | FNS733A3XS                | FNS733A3XW       | C2-236                 | C2-214     |
|                                                                                 | 480   | 18.0 | 1  | 1       | 33 (838)          | 48 (22)          | FNS733A11XS               | FNS733A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 18.0 | 3  | 1       | 33 (838)          | 48 (22)          | FNS733A5XS                | FNS733A5XW       | C2-43                  | C2-35      |
|                                                                                 | 240   | 23.0 | 1  | 3       | 40 1/2 (1029)     | 53 (24)          | FNS740J10XS               | FNS740J10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 23.0 | 3  | 3       | 40 1/2 (1029)     | 53 (24)          | FNS740J3XS                | FNS740J3XW       | C4-143                 | C4-142     |
|                                                                                 | 480   | 23.0 | 1  | 1       | 40 1/2 (1029)     | 53 (24)          | FNS740J11XS               | FNS740J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 23.0 | 3  | 1       | 40 1/2 (1029)     | 53 (24)          | FNS740J5XS                | FNS740J5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 27.0 | 1  | 3       | 48 (1219)         | 60 (28)          | FNS748A10XS               | FNS748A10XW      | C/F                    | C/F        |
|                                                                                 | 240   | 27.0 | 3  | 3       | 48 (1219)         | 60 (28)          | FNS748A3XS                | FNS748A3XW       | C4-143                 | C4-142     |
|                                                                                 | 480   | 27.0 | 1  | 3       | 48 (1219)         | 60 (28)          | FNS748A11XS               | FNS748A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 27.0 | 3  | 1       | 48 (1219)         | 60 (28)          | FNS748A5XS                | FNS748A5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 38.0 | 3  | 3       | 64 1/2 (1638)     | 68 (31)          | FNS764J3XS                | FNS764J3XW       | C4-144                 | C4-145     |
|                                                                                 | 480   | 38.0 | 1  | 3       | 64 1/2 (1638)     | 68 (31)          | FNS764J11XS               | FNS764J11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 38.0 | 3  | 1       | 64 1/2 (1638)     | 68 (31)          | FNS764J5XS                | FNS764J5XW       | C2-225                 | C2-226     |
|                                                                                 | 240   | 45.0 | 3  | 3       | 77 (1956)         | 78 (36)          | FNS777A3XS                | FNS777A3XW       | C4-144                 | C4-145     |
|                                                                                 | 480   | 45.0 | 1  | 3       | 77 (1956)         | 78 (36)          | FNS777A11XS               | FNS777A11XW      | C/F                    | C/F        |
|                                                                                 | 480   | 45.0 | 3  | 3       | 77 (1956)         | 78 (36)          | FNS777A5XS                | FNS777A5XW       | C4-150                 | C4-151     |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



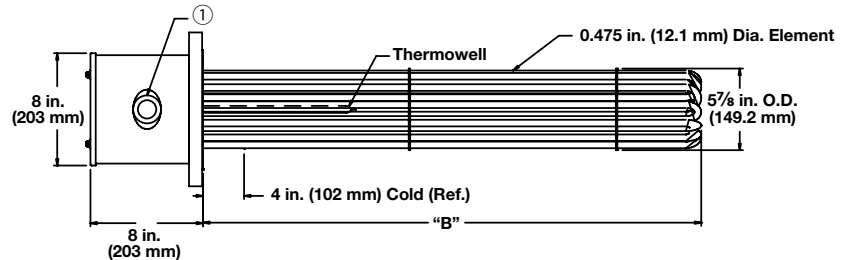
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> Steel Flange 12-Steel Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 12.0 | 1  | 2       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPS717R10S                | FPS717R10W       | C/F                    | C/F        |
|                                                                                  | 240   | 12.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPS717R3S                 | FPS717R3W        | C2-236                 | C2-214     |
|                                                                                  | 480   | 12.0 | 1  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPS717R11S                | FPS717R11W       | C/F                    | C/F        |
|                                                                                  | 480   | 12.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPS717R5S                 | FPS717R5W        | C2-43                  | C2-35      |
|                                                                                  | 240   | 18.0 | 1  | 2       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPS725G10S                | FPS725G10W       | C/F                    | C/F        |
|                                                                                  | 240   | 18.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPS725G3S                 | FPS725G3W        | C2-236                 | C2-214     |
|                                                                                  | 480   | 18.0 | 1  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPS725G11S                | FPS725G11W       | C/F                    | C/F        |
|                                                                                  | 480   | 18.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPS725G5S                 | FPS725G5W        | C2-43                  | C2-35      |
|                                                                                  | 240   | 24.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R10S                | FPS732R10W       | C/F                    | C/F        |
|                                                                                  | 240   | 24.0 | 3  | 2       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R3S                 | FPS732R3W        | C2-218                 | C2-224     |
|                                                                                  | 480   | 24.0 | 1  | 2       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R11S                | FPS732R11W       | C/F                    | C/F        |
|                                                                                  | 480   | 24.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R5S                 | FPS732R5W        | C2-225                 | C2-226     |
|                                                                                  | 240   | 30.0 | 1  | 3       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G10S                | FPS740G10W       | C/F                    | C/F        |
|                                                                                  | 240   | 30.0 | 3  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G3S                 | FPS740G3W        | C2-218                 | C2-224     |
|                                                                                  | 480   | 30.0 | 1  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G11S                | FPS740G11W       | C/F                    | C/F        |
|                                                                                  | 480   | 30.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G5S                 | FPS740G5W        | C2-225                 | C2-226     |
|                                                                                  | 240   | 36.0 | 1  | 4       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R10S                | FPS747R10W       | C/F                    | C/F        |
|                                                                                  | 240   | 36.0 | 3  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R3S                 | FPS747R3W        | C2-218                 | C2-224     |
|                                                                                  | 480   | 36.0 | 1  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R11S                | FPS747R11W       | C/F                    | C/F        |
|                                                                                  | 480   | 36.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R5S                 | FPS747R5W        | C2-225                 | C2-226     |
|                                                                                  | 240   | 50.0 | 3  | 4       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPS764G3S                 | FPS764G3W        | C4-148                 | C40149     |
|                                                                                  | 480   | 50.0 | 1  | 3       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPS764G11S                | FPS764G11W       | C/F                    | C/F        |
|                                                                                  | 480   | 50.0 | 3  | 2       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPS764G5S                 | FPS764G5W        | C2-229                 | C2-230     |
|                                                                                  | 240   | 60.0 | 3  | 4       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPS776R3S                 | FPS776R3W        | C4-148                 | C4-149     |
|                                                                                  | 480   | 60.0 | 1  | 3       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPS776R11S                | FPS776R11W       | C/F                    | C/F        |
|                                                                                  | 480   | 60.0 | 3  | 2       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPS776R5S                 | FPS776R5W        | C2-229                 | C2-230     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



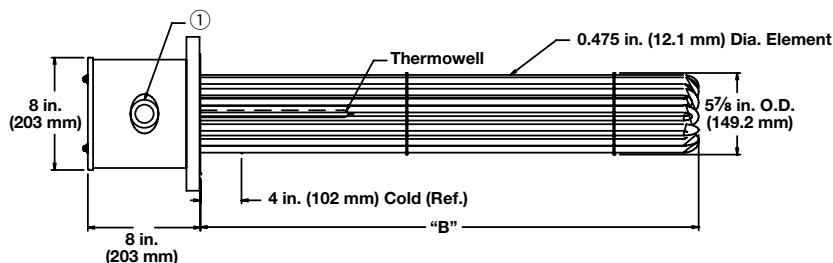
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|----------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                  |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>23 W/in<sup>2</sup> Steel Flange 15-Steel Elements (3.6 W/cm<sup>2</sup>)</b> | 240   | 15.0 | 1  | 3       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPS717R10XS               | FPS717R10XW      | C/F                    | C/F        |
|                                                                                  | 240   | 15.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPS717R3XS                | FPS717R3XW       | C2-236                 | C2-214     |
|                                                                                  | 480   | 15.0 | 1  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPS717R11XS               | FPS717R11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 15.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPS717R5XS                | FPS717R5XW       | C2-43                  | C2-35      |
|                                                                                  | 240   | 23.0 | 1  | 3       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPS725G10XS               | FPS725G10XW      | C/F                    | C/F        |
|                                                                                  | 240   | 23.0 | 3  | 5       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPS725G3XS                | FPS725G3XW       | C4-143                 | C4-142     |
|                                                                                  | 480   | 23.0 | 1  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPS725G11XS               | FPS725G11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 23.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPS725G5XS                | FPS725G5XW       | C2-225                 | C2-226     |
|                                                                                  | 240   | 30.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R10XS               | FPS732R10XW      | C/F                    | C/F        |
|                                                                                  | 240   | 30.0 | 3  | 5       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R3XS                | FPS732R3XW       | C4-144                 | C4-145     |
|                                                                                  | 480   | 30.0 | 1  | 3       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R11XS               | FPS732R11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 30.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R5XS                | FPS732R5XW       | C2-225                 | C2-226     |
|                                                                                  | 240   | 38.0 | 1  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G10XS               | FPS740G10XW      | C/F                    | C/F        |
|                                                                                  | 240   | 38.0 | 3  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G3XS                | FPS740G3XW       | C4-144                 | C4-145     |
|                                                                                  | 480   | 38.0 | 1  | 3       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G11XS               | FPS740G11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 38.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G5XS                | FPS740G5XW       | C2-225                 | C2-226     |
|                                                                                  | 240   | 45.0 | 1  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R10XS               | FPS747R10XW      | C/F                    | C/F        |
|                                                                                  | 240   | 45.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R3XS                | FPS747R3XW       | C4-144                 | C4-145     |
|                                                                                  | 480   | 45.0 | 1  | 3       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R11XS               | FPS747R11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 45.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R5XS                | FPS747R5XW       | C4-150                 | C4-151     |
|                                                                                  | 240   | 63.0 | 3  | 5       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPS764G3XS                | FPS764G3XW       | C/F                    | C/F        |
|                                                                                  | 480   | 63.0 | 1  | 3       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPS764G11XS               | FPS764G11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 63.0 | 3  | 5       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPS764G5XS                | FPS764G5XW       | C4-152                 | C4-153     |
|                                                                                  | 240   | 75.0 | 3  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPS776R3XS                | FPS776R3XW       | C/F                    | C/F        |
|                                                                                  | 480   | 75.0 | 1  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPS776R11XS               | FPS776R11XW      | C/F                    | C/F        |
|                                                                                  | 480   | 75.0 | 3  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPS776R5XS                | FPS776R5XW       | C4-152                 | C4-153     |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



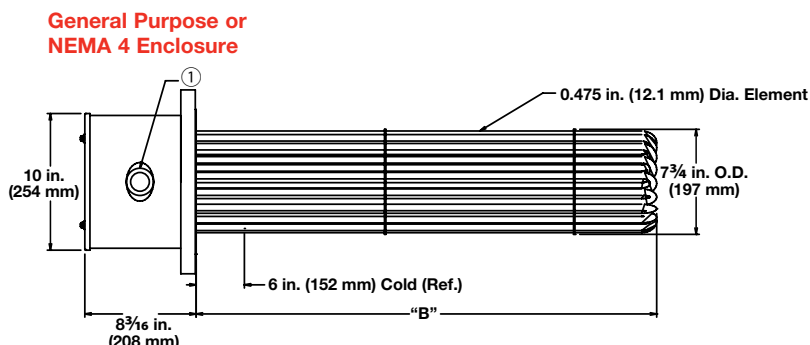
## WATROD ANSI Flange Immersion Heaters



### Application: Lightweight Oils and Heat Transfer Oils

- 8 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

① The number and size of the conduit opening will comply with the National Electrical Code® standards.



| Description                                                                  | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                         | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------|-------|-------|----|---------|-------------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                              |       |       |    |         |                                           |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup> Steel Flange 18-Steel Elements (3.6 W/cm <sup>2</sup> ) | 240   | 30.0  | 1  | 3       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRS732N10S                | FRS732N10W       | C/F                    | C/F        |
|                                                                              | 240   | 30.0  | 3  | 2       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRS732N3S                 | FRS732N3W        | C2-218                 | C2-224     |
|                                                                              | 480   | 30.0  | 1  | 2       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRS732N11S                | FRS732N11W       | C/F                    | C/F        |
|                                                                              | 480   | 30.0  | 3  | 1       | 32 <sup>3</sup> / <sub>4</sub> (832.0)    | 130 (59)          | FRS732N5S                 | FRS732N5W        | C2-225                 | C2-226     |
|                                                                              | 240   | 40.0  | 3  | 3       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRS743E3S                 | FRS743E3W        | C4-144                 | C4-145     |
|                                                                              | 480   | 40.0  | 1  | 2       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRS743E11S                | FRS743E11W       | C/F                    | C/F        |
|                                                                              | 480   | 40.0  | 3  | 2       | 43 <sup>1</sup> / <sub>4</sub> (1099.0)   | 132 (60)          | FRS743E5S                 | FRS743E5W        | C2-227                 | C2-228     |
|                                                                              | 240   | 50.0  | 3  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRS751M3S                 | FRS751M3W        | C4-144                 | C4-145     |
|                                                                              | 480   | 50.0  | 1  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRS751M11S                | FRS751M11W       | C/F                    | C/F        |
|                                                                              | 480   | 50.0  | 3  | 2       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 137 (63)          | FRS751M5S                 | FRS751M5W        | C2-229                 | C2-230     |
|                                                                              | 240   | 60.0  | 3  | 6       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 154 (70)          | FRS762D3S                 | FRS762D3W        | C4-144                 | C4-145     |
|                                                                              | 480   | 60.0  | 1  | 3       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 154 (70)          | FRS762D11S                | FRS762D11W       | C/F                    | C/F        |
|                                                                              | 480   | 60.0  | 3  | 2       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 154 (70)          | FRS762D5S                 | FRS762D5W        | C2-229                 | C2-230     |
|                                                                              | 240   | 70.0  | 3  | 6       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 160 (73)          | FRS770M3S                 | FRS770M3W        | C/F                    | C/F        |
|                                                                              | 480   | 70.0  | 1  | 6       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 160 (73)          | FRS770M11S                | FRS770M11W       | C/F                    | C/F        |
|                                                                              | 480   | 70.0  | 3  | 2       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 160 (73)          | FRS770M5S                 | FRS770M5W        | C2-229                 | C2-230     |
|                                                                              | 240   | 80.0  | 3  | 6       | 79 <sup>11</sup> / <sub>16</sub> (2024.1) | 172 (78)          | FRS779M3S                 | FRS779M3W        | C/F                    | C/F        |
|                                                                              | 480   | 80.0  | 3  | 3       | 79 <sup>11</sup> / <sub>16</sub> (2024.1) | 172 (78)          | FRS779M5S                 | FRS779M5W        | C4-152                 | C4-153     |
| 23 W/in <sup>2</sup> Steel Flange 24-Steel Elements (3.6 W/cm <sup>2</sup> ) | 240   | 40.0  | 1  | 4       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRS733D10XS               | FRS733D10XW      | C/F                    | C/F        |
|                                                                              | 240   | 40.0  | 3  | 4       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRS733D3XS                | FRS733D3XW       | C4-146                 | C4-147     |
|                                                                              | 480   | 40.0  | 1  | 2       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRS733D11XS               | FRS733D11XW      | C/F                    | C/F        |
|                                                                              | 480   | 40.0  | 3  | 2       | 33 <sup>3</sup> / <sub>16</sub> (843.0)   | 142 (65)          | FRS733D5XS                | FRS733D5XW       | C2-227                 | C2-228     |
|                                                                              | 240   | 53.0  | 3  | 4       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRS743M3XS                | FRS743M3XW       | C4-148                 | C4-149     |
|                                                                              | 480   | 53.0  | 1  | 3       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRS743M11XS               | FRS743M11XW      | C/F                    | C/F        |
|                                                                              | 480   | 53.0  | 3  | 2       | 43 <sup>11</sup> / <sub>16</sub> (1109.7) | 147 (67)          | FRS743M5XS                | FRS743M5XW       | C2-229                 | C2-230     |
|                                                                              | 240   | 67.0  | 3  | 4       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRS751M3XS                | FRS751M3XW       | C4-148                 | C4-149     |
|                                                                              | 480   | 67.0  | 1  | 3       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRS751M11XS               | FRS751M11XW      | C/F                    | C/F        |
|                                                                              | 480   | 67.0  | 3  | 2       | 51 <sup>11</sup> / <sub>16</sub> (1312.9) | 154 (70)          | FRS751M5XS                | FRS751M5XW       | C2-229                 | C2-230     |
|                                                                              | 240   | 80.0  | 3  | 8       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 166 (76)          | FRS762D3XS                | FRS762D3XW       | C4-148                 | C4-149     |
|                                                                              | 480   | 80.0  | 1  | 4       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 166 (76)          | FRS762D11XS               | FRS762D11XW      | C/F                    | C/F        |
|                                                                              | 480   | 80.0  | 3  | 4       | 62 <sup>3</sup> / <sub>16</sub> (1579.6)  | 166 (76)          | FRS762D5XS                | FRS762D5XW       | C4-154                 | C4-155     |
|                                                                              | 240   | 93.0  | 3  | 8       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 175 (80)          | FRS770M3XS                | FRS770M3XW       | C/F                    | C/F        |
|                                                                              | 480   | 93.0  | 1  | 6       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 175 (80)          | FRS770M11XS               | FRS770M11XW      | C/F                    | C/F        |
|                                                                              | 480   | 93.0  | 3  | 4       | 70 <sup>11</sup> / <sub>16</sub> (1795.5) | 175 (80)          | FRS770M5XS                | FRS770M5XW       | C4-156                 | C4-157     |
|                                                                              | 240   | 107.0 | 3  | 8       | 79 <sup>11</sup> / <sub>16</sub> (2024.1) | 181 (82)          | FRS779M3XS                | FRS779M3XW       | C/F                    | C/F        |
|                                                                              | 480   | 107.0 | 3  | 4       | 79 <sup>11</sup> / <sub>16</sub> (2024.1) | 181 (82)          | FRS779M5XS                | FRS779M5XW       | C4-156                 | C4-157     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



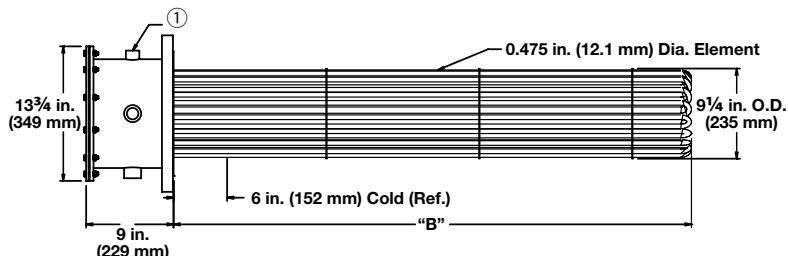
## WATROD ANSI Flange Immersion Heaters



### Application: Light Weight Oils and Heat Transfer Oils

- 10 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                  | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                              |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup> Steel Flange 27-Steel Elements (3.6 W/cm <sup>2</sup> ) | 240   | 45.0  | 3  | 3       | 33 1/4 (845)      | 165 (75)          | FSS733E3S                 | FSS733E3W        | C4-144                 | C4-145     |
|                                                                              | 480   | 45.0  | 3  | 3       | 33 1/4 (845)      | 165 (75)          | FSS733E5S                 | FSS733E5W        | C4-150                 | C4-151     |
|                                                                              | 240   | 60.0  | 3  | 3       | 43 3/4 (1111)     | 195 (89)          | FSS743N3S                 | FSS743N3W        | C4-144                 | C4-145     |
|                                                                              | 480   | 60.0  | 3  | 3       | 43 3/4 (1111)     | 195 (89)          | FSS743N5S                 | FSS743N5W        | C4-150                 | C4-151     |
|                                                                              | 240   | 75.0  | 3  | 9       | 51 3/4 (1314)     | 230 (105)         | FSS751N3S                 | FSS751N3W        | C/F                    | C/F        |
|                                                                              | 480   | 75.0  | 3  | 3       | 51 3/4 (1314)     | 230 (105)         | FSS751N5S                 | FSS751N5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 90.0  | 3  | 3       | 62 1/4 (1581)     | 250 (114)         | FSS762E5S                 | FSS762E5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 105.0 | 3  | 3       | 70 3/4 (1797)     | 258 (117)         | FSS770N5S                 | FSS770N5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 120.0 | 3  | 3       | 78 3/4 (2000)     | 265 (121)         | FSS778N5S                 | FSS778N5W        | C4-152                 | C4-153     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



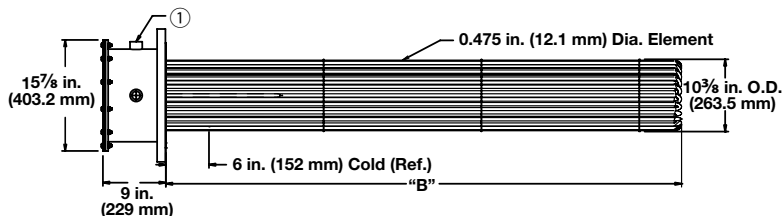
## WATROD ANSI Flange Immersion Heaters



### Application: Light Weight Oils and Heat Transfer Oils

- 12 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                  | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lb (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|------------------|---------------------------|------------------|------------------------|------------|
|                                                                              |       |       |    |         |                   |                  | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup> Steel Flange 36-Steel Elements (3.6 W/cm <sup>2</sup> ) | 480   | 60.0  | 3  | 3       | 33 1/8 (841.4)    | 205 (93)         | FTS733C5S                 | FTS733C5W        | C4-150                 | C4-151     |
|                                                                              | 480   | 80.0  | 3  | 3       | 43 5/8 (1108.1)   | 240 (109)        | FTS743L5S                 | FTS743L5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 100.0 | 3  | 3       | 51 5/8 (1311.3)   | 280 (127)        | FTS751L5S                 | FTS751L5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 120.0 | 3  | 3       | 62 1/8 (1578.0)   | 285 (130)        | FTS762C5S                 | FTS762C5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 140.0 | 3  | 4       | 70 5/8 (1793.9)   | 290 (132)        | FTS770L5S                 | FTS770L5W        | C4-156                 | C4-157     |
|                                                                              | 480   | 160.0 | 3  | 4       | 78 5/8 (1997.1)   | 300 (136)        | FTS778L5S                 | FTS778L5W        | C4-156                 | C4-157     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

# Immersion Heaters



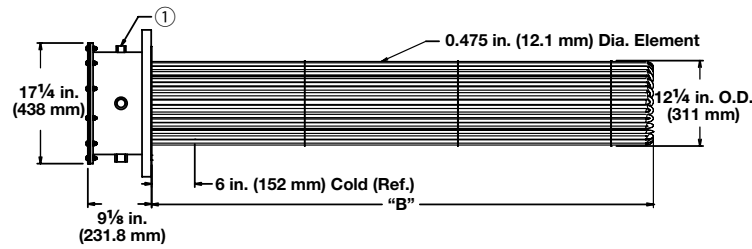
## WATROD ANSI Flange Immersion Heaters



### Application: Light Weight Oils and Heat Transfer Oils

- 14 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                  | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                              |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 23 W/in <sup>2</sup> Steel Flange 45-Steel Elements (3.6 W/cm <sup>2</sup> ) | 480   | 75.0  | 3  | 3       | 33 (838)          | 225 (102)         | FWS733A5S                 | FWS733A5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 100.0 | 3  | 3       | 43 1/2 (1105)     | 255 (116)         | FWS743J5S                 | FWS743J5W        | C4-152                 | C4-153     |
|                                                                              | 480   | 125.0 | 3  | 5       | 51 1/2 (1308)     | 300 (136)         | FWS751J5S                 | FWS751J5W        | C/F                    | C/F        |
|                                                                              | 480   | 150.0 | 3  | 5       | 62 (1575)         | 310 (141)         | FWS762A5S                 | FWS762A5W        | C/F                    | C/F        |
|                                                                              | 480   | 175.0 | 3  | 5       | 70 1/2 (1791)     | 318 (145)         | FWS770J5S                 | FWS770J5W        | C/F                    | C/F        |
|                                                                              | 480   | 200.0 | 3  | 5       | 78 1/2 (1994)     | 330 (150)         | FWS778J5S                 | FWS778J5W        | C/F                    | C/F        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

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# Immersion Heaters



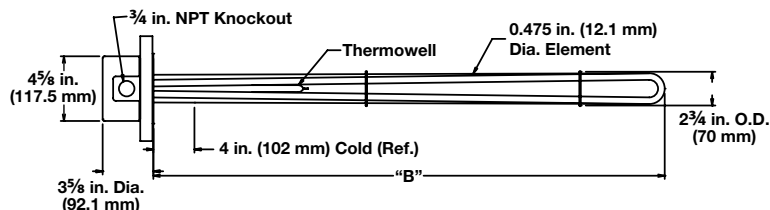
## WATROD ANSI Flange Immersion Heaters



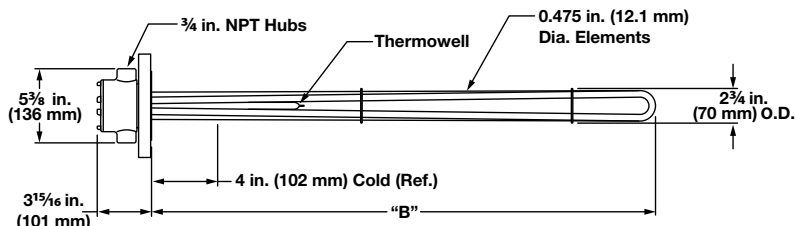
### Application: Medium Weight Oils and Heat Transfer Oils

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

#### General Purpose



#### NEMA 4 Enclosure



| Description                                                                                      | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|--------------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                  |       |     |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| 16 W/in <sup>2</sup> ③<br>Steel<br>Flange<br>3-Alloy 800<br>Elements<br>(2.5 W/cm <sup>2</sup> ) | 240   | 1.5 | 3  | 13 1/2 (343)         | 22 (10)              | FMN713J12S                   | FMN713J12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 1.5 | 3  | 13 1/2 (343)         | 22 (10)              | FMN713J13S                   | FMN713J13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 2.0 | 3  | 18 (457)             | 23 (11)              | FMN718A12S                   | FMN718A12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 2.0 | 3  | 18 (457)             | 23 (11)              | FMN718A13S                   | FMN718A13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 2.5 | 3  | 20 1/2 (521)         | 25 (12)              | FMN720J12S                   | FMN720J12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 2.5 | 3  | 20 1/2 (521)         | 25 (12)              | FMN720J13S                   | FMN720J13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 3.0 | 3  | 25 1/2 (648)         | 27 (13)              | FMN725J12S                   | FMN725J12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 3.0 | 3  | 25 1/2 (648)         | 27 (13)              | FMN725J13S                   | FMN725J13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 4.0 | 3  | 33 (838)             | 28 (13)              | FMN733A12S                   | FMN733A12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 4.0 | 3  | 33 (838)             | 28 (13)              | FMN733A13S                   | FMN733A13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 5.0 | 3  | 40 1/2 (1029)        | 30 (14)              | FMN740J12S                   | FMN740J12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 5.0 | 3  | 40 1/2 (1029)        | 30 (14)              | FMN740J13S                   | FMN740J13W          | C2-43                     | C2-35         |
|                                                                                                  | 240   | 6.0 | 3  | 48 (1219)            | 32 (15)              | FMN748A12S                   | FMN748A12W          | C2-50                     | C2-92         |
|                                                                                                  | 480   | 6.0 | 3  | 48 (1219)            | 32 (15)              | FMN748A13S                   | FMN748A13W          | C2-43                     | C2-35         |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



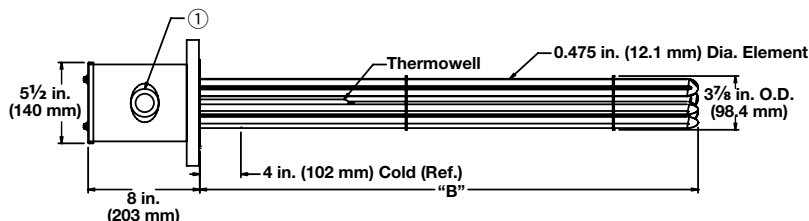
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 4 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or  
NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                           | Volts | kW   | Ph | # Circ. | "B" Dim.<br>in. (mm) | Ship Wt.<br>lb (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|-------------------------------------------------------------------------------------------------------|-------|------|----|---------|----------------------|---------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                       |       |      |    |         |                      |                     | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>16 W/in<sup>2</sup> ③<br/>Steel Flange<br/>6-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 3.0  | 3  | 1       | 13 1/2 (343)         | 29 (14)             | FON713J12S                   | FON713J12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 3.0  | 3  | 1       | 13 1/2 (343)         | 29 (14)             | FON713J13S                   | FON713J13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 4.0  | 3  | 1       | 18 (457)             | 32 (15)             | FON718A12S                   | FON718A12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 4.0  | 3  | 1       | 18 (457)             | 32 (15)             | FON718A13S                   | FON718A13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 5.0  | 3  | 1       | 20 1/2 (521)         | 34 (16)             | FON720J12S                   | FON720J12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 5.0  | 3  | 1       | 20 1/2 (521)         | 34 (16)             | FON720J13S                   | FON720J13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 6.0  | 3  | 1       | 25 1/2 (648)         | 36 (17)             | FON725J12S                   | FON725J12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 6.0  | 3  | 1       | 25 1/2 (648)         | 36 (17)             | FON725J13S                   | FON725J13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 8.0  | 3  | 1       | 33 (838)             | 39 (18)             | FON733A12S                   | FON733A12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 8.0  | 3  | 1       | 33 (838)             | 39 (18)             | FON733A13S                   | FON733A13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 10.0 | 3  | 1       | 40 1/2 (1029)        | 43 (20)             | FON740J12S                   | FON740J12W          | C2-50                     | C2-92         |
|                                                                                                       | 480   | 10.0 | 3  | 1       | 40 1/2 (1029)        | 43 (20)             | FON740J13S                   | FON740J13W          | C2-43                     | C2-35         |
|                                                                                                       | 240   | 12.0 | 3  | 1       | 48 (1219)            | 48 (22)             | FON748A12S                   | FON748A12W          | C2-236                    | C2-214        |
|                                                                                                       | 480   | 12.0 | 3  | 1       | 48 (1219)            | 48 (22)             | FON748A13S                   | FON748A13W          | C2-43                     | C2-35         |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



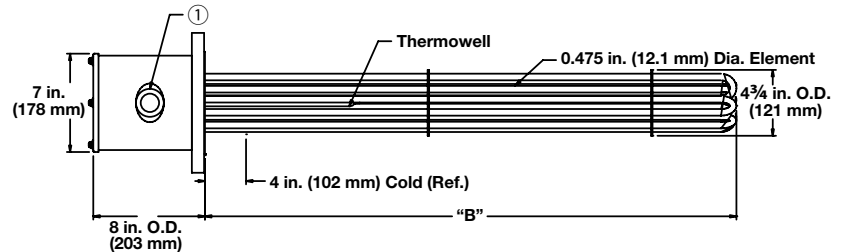
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                       | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-----------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                   |       |      |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 16 W/in <sup>2</sup> ③ Steel Flange 6-Alloy 800 Elements (2.5 W/cm <sup>2</sup> ) | 240   | 3.0  | 3  | 1       | 13 1/2 (343)      | 36 (17)           | FNN713J12S                | FNN713J12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 3.0  | 3  | 1       | 13 1/2 (343)      | 36 (17)           | FNN713J13S                | FNN713J13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 4.0  | 3  | 1       | 18 (457)          | 40 (19)           | FNN718A12S                | FNN718A12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 4.0  | 3  | 1       | 18 (457)          | 40 (19)           | FNN718A13S                | FNN718A13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 5.0  | 3  | 1       | 20 1/2 (521)      | 43 (20)           | FNN720J12S                | FNN720J12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 5.0  | 3  | 1       | 20 1/2 (521)      | 43 (20)           | FNN720J13S                | FNN720J13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 6.0  | 3  | 1       | 25 1/2 (648)      | 47 (22)           | FNN725J12S                | FNN725J12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 6.0  | 3  | 1       | 25 1/2 (648)      | 47 (22)           | FNN725J13S                | FNN725J13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 8.0  | 3  | 1       | 33 (838)          | 52 (24)           | FNN733A12S                | FNN733A12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 8.0  | 3  | 1       | 33 (838)          | 52 (24)           | FNN733A13S                | FNN733A13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 10.0 | 3  | 1       | 40 1/2 (1029)     | 57 (26)           | FNN740J12S                | FNN740J12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 10.0 | 3  | 1       | 40 1/2 (1029)     | 57 (26)           | FNN740J13S                | FNN740J13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 12.0 | 3  | 1       | 48 (1219)         | 65 (30)           | FNN748A12S                | FNN748A12W       | C2-236                 | C2-214     |
|                                                                                   | 480   | 12.0 | 3  | 1       | 48 (1219)         | 65 (30)           | FNN748A13S                | FNN748A13W       | C2-43                  | C2-35      |
| 16 W/in <sup>2</sup> ③ Steel Flange 9-Alloy 800 Elements (2.5 W/cm <sup>2</sup> ) | 240   | 4.5  | 3  | 1       | 13 1/2 (343)      | 39 (18)           | FNN713J12XS               | FNN713J12XW      | C2-50                  | C2-92      |
|                                                                                   | 480   | 4.5  | 3  | 1       | 13 1/2 (343)      | 39 (18)           | FNN713J13XS               | FNN713J13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 6.0  | 3  | 1       | 18 (457)          | 45 (21)           | FNN718A12XS               | FNN718A12XW      | C2-50                  | C2-92      |
|                                                                                   | 480   | 6.0  | 3  | 1       | 18 (457)          | 45 (21)           | FNN718A13XS               | FNN718A13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 7.5  | 3  | 1       | 20 1/2 (521)      | 48 (22)           | FNN720J12XS               | FNN720J12XW      | C2-50                  | C2-92      |
|                                                                                   | 480   | 7.5  | 3  | 1       | 20 1/2 (521)      | 48 (22)           | FNN720J13XS               | FNN720J13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 9.0  | 3  | 1       | 25 1/2 (648)      | 53 (24)           | FNN725J12XS               | FNN725J12XW      | C2-50                  | C2-92      |
|                                                                                   | 480   | 9.0  | 3  | 1       | 25 1/2 (648)      | 53 (24)           | FNN725J13XS               | FNN725J13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 12.0 | 3  | 1       | 33 (838)          | 60 (28)           | FNN733A12XS               | FNN733A12XW      | C2-236                 | C2-214     |
|                                                                                   | 480   | 12.0 | 3  | 1       | 33 (838)          | 60 (28)           | FNN733A13XS               | FNN733A13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 68 (31)           | FNN740J12XS               | FNN740J12XW      | C2-236                 | C2-214     |
|                                                                                   | 480   | 15.0 | 3  | 1       | 40 1/2 (1029)     | 68 (31)           | FNN740J13XS               | FNN740J13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 18.0 | 3  | 1       | 48 (1219)         | 78 (36)           | FNN748A12XS               | FNN748A12XW      | C2-236                 | C2-214     |
|                                                                                   | 480   | 18.0 | 3  | 1       | 48 (1219)         | 78 (36)           | FNN748A13XS               | FNN748A13XW      | C2-43                  | C2-35      |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
 • For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



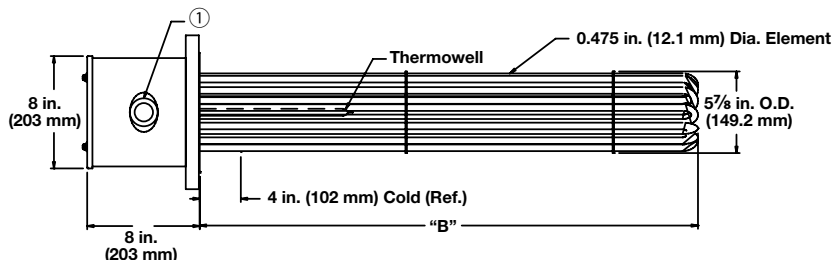
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                              | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number<br>General Purpose Enclosure | Part Number<br>NEMA 4 Enclosure | WATCONNECT Part Number |        |
|------------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|------------------------------------------|---------------------------------|------------------------|--------|
| 16 W/in <sup>2</sup> ③<br>Steel Flange 12-Alloy 800 Elements<br>(2.5 W/cm <sup>2</sup> ) | 240   | 6.0  | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G12S                               | FPN713G12W                      | C2-50                  | C2-92  |
|                                                                                          | 480   | 6.0  | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 73 (33)           | FPN713G13S                               | FPN713G13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 8.0  | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R12S                               | FPN717R12W                      | C2-50                  | C2-92  |
|                                                                                          | 480   | 8.0  | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 75 (34)           | FPN717R13S                               | FPN717R13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 10.0 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G12S                               | FPN720G12W                      | C2-50                  | C2-92  |
|                                                                                          | 480   | 10.0 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 78 (36)           | FPN720G13S                               | FPN720G13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 12.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G12S                               | FPN725G12W                      | C2-236                 | C2-214 |
|                                                                                          | 480   | 12.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 81 (37)           | FPN725G13S                               | FPN725G13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 16.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPN732R12S                               | FPN732R12W                      | C2-236                 | C2-214 |
|                                                                                          | 480   | 16.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPN732R13S                               | FPN732R13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 20.0 | 3  | 2       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPN740G12S                               | FPN740G12W                      | C2-219                 | C2-220 |
|                                                                                          | 480   | 20.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPN740G13S                               | FPN740G13W                      | C2-43                  | C2-35  |
|                                                                                          | 240   | 24.0 | 3  | 2       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPN747R12S                               | FPN747R12W                      | C2-219                 | C2-220 |
|                                                                                          | 480   | 24.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPN747R13S                               | FPN747R13W                      | C2-225                 | C2-226 |
| 16 W/in <sup>2</sup> ③<br>Steel Flange 15-Alloy 800 Elements<br>(2.5 W/cm <sup>2</sup> ) | 240   | 7.5  | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G12XS                              | FPN713G12XW                     | C2-50                  | C2-92  |
|                                                                                          | 480   | 7.5  | 3  | 1       | 13 <sup>3</sup> / <sub>8</sub> (339.7)  | 76 (35)           | FPN713G13XS                              | FPN713G13XW                     | C2-43                  | C2-35  |
|                                                                                          | 240   | 10.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPN717R12XS                              | FPN717R12XW                     | C2-50                  | C2-92  |
|                                                                                          | 480   | 10.0 | 3  | 1       | 17 <sup>7</sup> / <sub>8</sub> (454.0)  | 78 (36)           | FPN717R13XS                              | FPN717R13XW                     | C2-43                  | C2-35  |
|                                                                                          | 240   | 12.5 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G12XS                              | FPN720G12XW                     | C2-236                 | C2-214 |
|                                                                                          | 480   | 12.5 | 3  | 1       | 20 <sup>3</sup> / <sub>8</sub> (517.5)  | 82 (38)           | FPN720G13XS                              | FPN720G13XW                     | C2-43                  | C2-35  |
|                                                                                          | 240   | 15.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G12XS                              | FPN725G12XW                     | C2-236                 | C2-214 |
|                                                                                          | 480   | 15.0 | 3  | 1       | 25 <sup>3</sup> / <sub>8</sub> (644.5)  | 85 (39)           | FPN725G13XS                              | FPN725G13XW                     | C2-43                  | C2-35  |
|                                                                                          | 240   | 20.0 | 3  | 5       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPN732R12XS                              | FPN732R12XW                     | C4-143                 | C4-142 |
|                                                                                          | 480   | 20.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPN732R13XS                              | FPN732R13XW                     | C2-43                  | C2-35  |
|                                                                                          | 240   | 25.0 | 3  | 5       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPN740G12XS                              | FPN740G12XW                     | C4-143                 | C4-142 |
|                                                                                          | 480   | 25.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPN740G13XS                              | FPN740G13XW                     | C2-225                 | C2-226 |
|                                                                                          | 240   | 30.0 | 3  | 5       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPN747R12XS                              | FPN747R12XW                     | C4-144                 | C4-145 |
|                                                                                          | 480   | 30.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPN747R13XS                              | FPN747R13XW                     | C2-225                 | C2-226 |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only



# Immersion Heaters



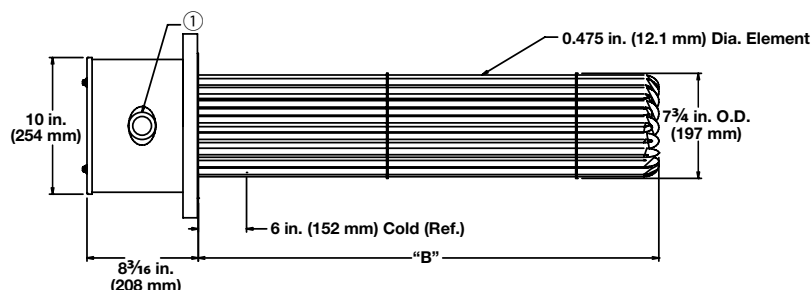
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 8 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                            | Volts | kW   | Ph | # Circ. | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|--------------------------------------------------------------------------------------------------------|-------|------|----|---------|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                                        |       |      |    |         |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| <b>16 W/in<sup>2</sup> ③<br/>Steel Flange<br/>18-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 240   | 17.0 | 3  | 1       | 25 3/4 (654.0)       | 121 (55)             | FRN725N12S                   | FRN725N12W          | C2-236                    | C2-214        |
|                                                                                                        | 480   | 17.0 | 3  | 1       | 25 3/4 (654.0)       | 121 (55)             | FRN725N13S                   | FRN725N13W          | C2-43                     | C2-35         |
|                                                                                                        | 240   | 25.0 | 3  | 2       | 35 3/4 (908.0)       | 130 (59)             | FRN735N12S                   | FRN735N12W          | C2-219                    | C2-220        |
|                                                                                                        | 480   | 25.0 | 3  | 1       | 35 3/4 (908.0)       | 130 (59)             | FRN735N13S                   | FRN735N13W          | C2-225                    | C2-226        |
|                                                                                                        | 240   | 33.0 | 3  | 2       | 44 1/4 (1124.0)      | 132 (60)             | FRN744E12S                   | FRN744E12W          | C2-218                    | C2-224        |
|                                                                                                        | 480   | 33.0 | 3  | 1       | 44 1/4 (1124.0)      | 132 (60)             | FRN744E13S                   | FRN744E13W          | C2-225                    | C2-226        |
|                                                                                                        | 240   | 42.0 | 3  | 3       | 54 1/16 (1389.1)     | 140 (64)             | FRN754M12S                   | FRN754M12W          | C4-144                    | C4-145        |
|                                                                                                        | 480   | 42.0 | 3  | 2       | 54 1/16 (1389.1)     | 140 (64)             | FRN754M13S                   | FRN754M13W          | C2-229                    | C2-230        |
|                                                                                                        | 480   | 50.0 | 3  | 2       | 63 1/16 (1617.6)     | 145 (66)             | FRN763M13S                   | FRN763M13W          | C2-229                    | C2-230        |
|                                                                                                        | 480   | 58.0 | 3  | 2       | 73 3/16 (1859.0)     | 151 (69)             | FRN773D13S                   | FRN773D13W          | C2-229                    | C2-230        |
| <b>16 W/in<sup>2</sup> ③<br/>Steel Flange<br/>24-Alloy 800<br/>Elements<br/>(2.5 W/cm<sup>2</sup>)</b> | 480   | 67.0 | 3  | 2       | 82 1/16 (2100.3)     | 157 (72)             | FRN782M13S                   | FRN782M13W          | C2-229                    | C2-230        |
|                                                                                                        | 240   | 23.0 | 3  | 2       | 26 3/16 (665.2)      | 129 (59)             | FRN726D12XS                  | FRN726D12XW         | C2-218                    | C2-224        |
|                                                                                                        | 480   | 23.0 | 3  | 1       | 26 3/16 (665.2)      | 129 (59)             | FRN726D13XS                  | FRN726D13XW         | C2-225                    | C2-226        |
|                                                                                                        | 240   | 33.0 | 3  | 2       | 36 3/16 (919.2)      | 142 (65)             | FRN736D12XS                  | FRN736D12XW         | C2-218                    | C2-224        |
|                                                                                                        | 480   | 33.0 | 3  | 1       | 36 3/16 (919.2)      | 142 (65)             | FRN736D13XS                  | FRN736D13XW         | C2-225                    | C2-226        |
|                                                                                                        | 240   | 44.0 | 3  | 4       | 44 1/16 (1135.1)     | 147 (67)             | FRN744M12XS                  | FRN744M12XW         | C4-148                    | C4-149        |
|                                                                                                        | 480   | 44.0 | 3  | 2       | 44 1/16 (1135.1)     | 147 (67)             | FRN744M13XS                  | FRN744M13XW         | C2-229                    | C2-230        |
|                                                                                                        | 240   | 56.0 | 3  | 4       | 54 1/16 (1389.1)     | 158 (72)             | FRN754M12XS                  | FRN754M12XW         | C4-148                    | C4-149        |
|                                                                                                        | 480   | 56.0 | 3  | 2       | 54 1/16 (1389.1)     | 158 (72)             | FRN754M13XS                  | FRN754M13XW         | C2-229                    | C2-230        |
|                                                                                                        | 480   | 67.0 | 3  | 2       | 63 1/16 (1617.6)     | 166 (76)             | FRN763M13XS                  | FRN763M13XW         | C2-229                    | C2-230        |
|                                                                                                        | 480   | 77.0 | 3  | 2       | 73 3/16 (1859.0)     | 175 (80)             | FRN773D13XS                  | FRN773D13XW         | C2-229                    | C2-230        |
|                                                                                                        | 480   | 89.0 | 3  | 4       | 82 1/16 (2100.3)     | 184 (84)             | FRN782M13XS                  | FRN782M13XW         | C4-156                    | C4-157        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



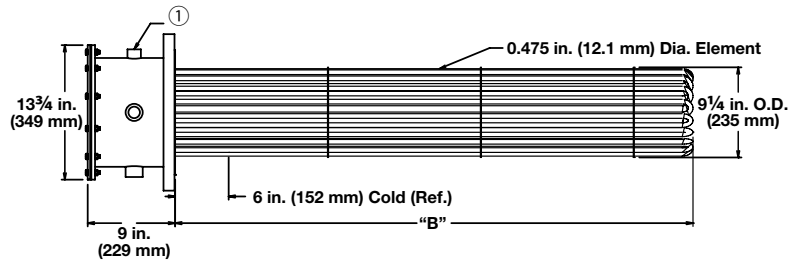
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 10 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

General Purpose or  
NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                    | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------------------------|-------|------|----|---------|---------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                                |       |      |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 16 W/in <sup>2</sup> ③<br>Steel Flange<br>27-Alloy 800<br>Elements<br>(2.5 W/cm <sup>2</sup> ) | 480   | 63.0 | 3  | 3       | 54 <sup>3</sup> / <sub>4</sub> (1391) | 240 (109)         | FSN754N13S                | FSN754N13W       | C4-152                 | C4-153     |
|                                                                                                | 480   | 75.0 | 3  | 3       | 63 <sup>3</sup> / <sub>4</sub> (1619) | 250 (114)         | FSN763N13S                | FSN763N13W       | C4-152                 | C4-153     |
|                                                                                                | 480   | 87.0 | 3  | 3       | 73 <sup>1</sup> / <sub>4</sub> (1861) | 260 (118)         | FSN773E13S                | FSN773E13W       | C4-152                 | C4-153     |

Notes: • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
• For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



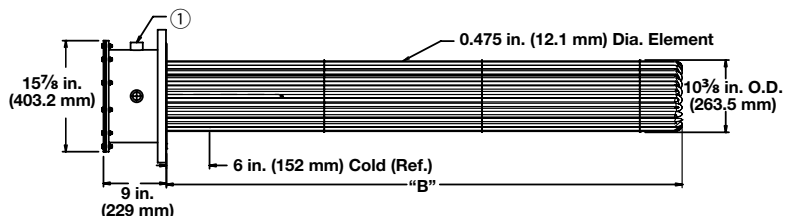
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 12 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                    | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------------------------|-------|-------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                                |       |       |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 16 W/in <sup>2</sup> ③<br>Steel Flange<br>36-Alloy 800<br>Elements<br>(2.5 W/cm <sup>2</sup> ) | 480   | 83.0  | 3  | 3       | 54 <sup>5</sup> / <sub>8</sub> (1387.5) | 280 (127)         | FTN754L13S                | FTN754L13W       | C4-152                 | C4-153     |
|                                                                                                | 480   | 117.0 | 3  | 3       | 73 <sup>1</sup> / <sub>8</sub> (1857.4) | 291 (132)         | FTN773C13S                | FTN773C13W       | C4-152                 | C4-153     |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



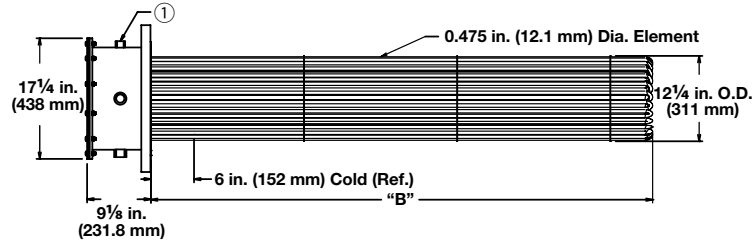
## WATROD ANSI Flange Immersion Heaters



### Application: Medium Weight Oils and Heat Transfer Oils

- 14 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                   | Volts | kW    | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-----------------------------------------------------------------------------------------------|-------|-------|----|---------|-------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                               |       |       |    |         |                   |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 16 Win <sup>2</sup> ③<br>Steel Flange<br>45-Alloy 800<br>Elements<br>(2.5 W/cm <sup>2</sup> ) | 480   | 105.0 | 3  | 3       | 54 1/2 (1384)     | 300 (136)         | FWN754J13S                | FWN754J13W       | C4-152                 | C4-153     |
|                                                                                               | 480   | 125.0 | 3  | 5       | 63 1/2 (1613)     | 310 (141)         | FWN763J13S                | FWN763J13W       | C/F                    | C/F        |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

③ Wired for 3-phase operation only

# Immersion Heaters



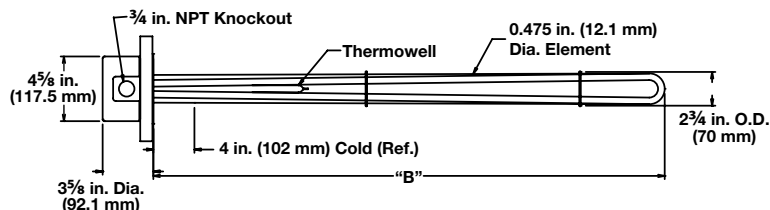
## WATROD ANSI Flange Immersion Heaters



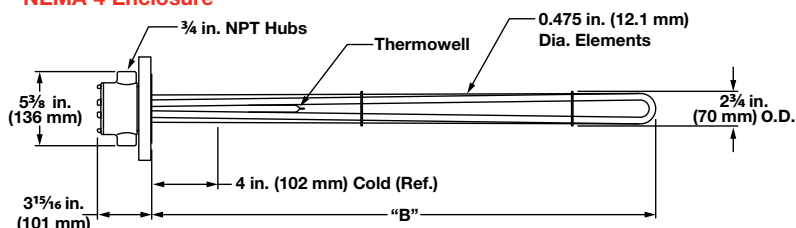
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 3 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure
- Single circuit

#### General Purpose



#### NEMA 4 Enclosure



| Description                                                                              | Volts | kW  | Ph | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number      | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------------------------------|-------|-----|----|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                                          |       |     |    |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| 8 W/in <sup>2</sup> ③<br>Steel Flange<br>3-Steel<br>Elements<br>(1.3 W/cm <sup>2</sup> ) | 240   | 2.0 | 3  | 33 (838)             | 28 (13)              | FMS733A12S                   | FMS733A12W          | C2-50                     | C2-92         |
|                                                                                          | 480   | 2.0 | 3  | 33 (838)             | 28 (13)              | FMS733A13S                   | FMS733A13W          | C2-43                     | C2-35         |
|                                                                                          | 240   | 3.0 | 3  | 48 (1219)            | 32 (15)              | FMS748A12S                   | FMS748A12W          | C2-50                     | C2-92         |
|                                                                                          | 480   | 3.0 | 3  | 48 (1219)            | 32 (15)              | FMS748A13S                   | FMS748A13W          | C2-43                     | C2-35         |
|                                                                                          | 240   | 4.0 | 3  | 64 1/2 (1638)        | 37 (17)              | FMS764J12S                   | FMS764J12W          | C2-50                     | C2-92         |
|                                                                                          | 480   | 4.0 | 3  | 64 1/2 (1638)        | 37 (17)              | FMS764J13S                   | FMS764J13W          | C2-43                     | C2-35         |
|                                                                                          | 240   | 5.0 | 3  | 77 (1956)            | 42 (19)              | FMS777A12S                   | FMS777A12W          | C2-50                     | C2-92         |
|                                                                                          | 480   | 5.0 | 3  | 77 (1956)            | 42 (19)              | FMS777A13S                   | FMS777A13W          | C2-43                     | C2-35         |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



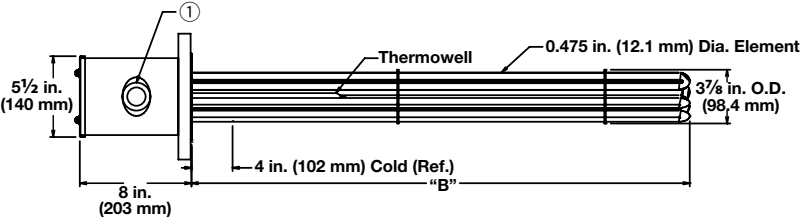
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 4 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                      | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number       | WATCONNECT Part Number |              |
|----------------------------------------------------------------------------------|-------|------|----|---------|---------------------------------------|-------------------|---------------------------|-------------------|------------------------|--------------|
|                                                                                  |       |      |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure  | Type J T/C             | Type K T/C   |
| <b>8 W/in<sup>2</sup> ③ Steel Flange 6-Steel Elements (1.3 W/cm<sup>2</sup>)</b> | 240   | 5.0  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 43 (20)           | <b>FOS740J12S</b>         | <b>FOS740J12W</b> | <b>C2-50</b>           | <b>C2-92</b> |
|                                                                                  | 480   | 5.0  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 43 (20)           | <b>FOS740J13S</b>         | <b>FOS740J13W</b> | <b>C2-43</b>           | <b>C2-35</b> |
|                                                                                  | 240   | 6.0  | 3  | 1       | 48 (1219)                             | 48 (22)           | <b>FOS748A12S</b>         | <b>FOS748A12W</b> | <b>C2-50</b>           | <b>C2-92</b> |
|                                                                                  | 480   | 6.0  | 3  | 1       | 48 (1219)                             | 48 (22)           | <b>FOS748A13S</b>         | <b>FOS748A13W</b> | <b>C2-43</b>           | <b>C2-35</b> |
|                                                                                  | 240   | 8.0  | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 53 (24)           | <b>FOS764J12S</b>         | <b>FOS764J12W</b> | <b>C2-50</b>           | <b>C2-92</b> |
|                                                                                  | 480   | 8.0  | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 53 (24)           | <b>FOS764J13S</b>         | <b>FOS764J13W</b> | <b>C2-43</b>           | <b>C2-35</b> |
|                                                                                  | 240   | 10.0 | 3  | 1       | 77 (1956)                             | 61 (28)           | <b>FOS777A12S</b>         | <b>FOS777A12W</b> | <b>C2-50</b>           | <b>C2-92</b> |
|                                                                                  | 480   | 10.0 | 3  | 1       | 77 (1956)                             | 61 (28)           | <b>FOS777A13S</b>         | <b>FOS777A13W</b> | <b>C2-43</b>           | <b>C2-35</b> |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



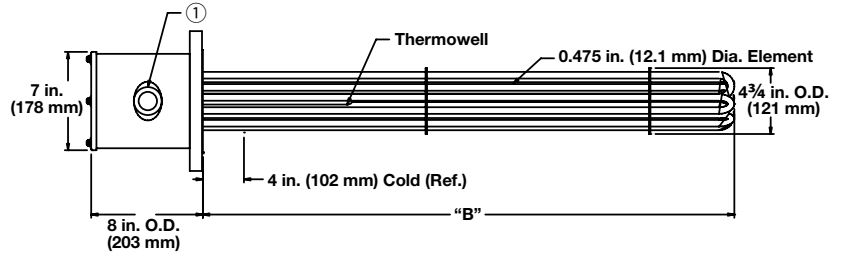
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 5 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                  | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|------------------------------------------------------------------------------|-------|------|----|---------|---------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                              |       |      |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| 8 W/in <sup>2</sup> ③ Steel Flange 6-Steel Elements (1.3 W/cm <sup>2</sup> ) | 240   | 5.0  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 47 (22)           | FNS740J12S                | FNS740J12W       | C2-50                  | C2-92      |
|                                                                              | 480   | 5.0  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 47 (22)           | FNS740J13S                | FNS740J13W       | C2-43                  | C2-35      |
|                                                                              | 240   | 6.0  | 3  | 1       | 48 (1219)                             | 52 (24)           | FNS748A12S                | FNS748A12W       | C2-50                  | C2-92      |
|                                                                              | 480   | 6.0  | 3  | 1       | 48 (1219)                             | 52 (24)           | FNS748A13S                | FNS748A13W       | C2-43                  | C2-35      |
|                                                                              | 240   | 8.0  | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 57 (26)           | FNS764J12S                | FNS764J12W       | C2-50                  | C2-92      |
|                                                                              | 480   | 8.0  | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 57 (26)           | FNS764J13S                | FNS764J13W       | C2-43                  | C2-35      |
|                                                                              | 240   | 10.0 | 3  | 1       | 77 (1956)                             | 65 (28)           | FNS777A12S                | FNS777A12W       | C2-50                  | C2-92      |
|                                                                              | 480   | 10.0 | 3  | 1       | 77 (1956)                             | 65 (28)           | FNS777A13S                | FNS777A13W       | C2-43                  | C2-35      |
| 8 W/in <sup>2</sup> ③ Steel Flange 9-Steel Elements (1.3 W/cm <sup>2</sup> ) | 240   | 7.5  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 53 (24)           | FNS740J12XS               | FNS740J12XW      | C2-50                  | C2-92      |
|                                                                              | 480   | 7.5  | 3  | 1       | 40 <sup>1</sup> / <sub>2</sub> (1029) | 53 (24)           | FNS740J13XS               | FNS740J13XW      | C2-43                  | C2-35      |
|                                                                              | 240   | 9.0  | 3  | 1       | 48 (1219)                             | 60 (28)           | FNS748A12XS               | FNS748A12XW      | C2-50                  | C2-92      |
|                                                                              | 480   | 9.0  | 3  | 1       | 48 (1219)                             | 60 (28)           | FNS748A13XS               | FNS748A13XW      | C2-43                  | C2-35      |
|                                                                              | 240   | 12.0 | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 68 (31)           | FNS764J12XS               | FNS764J12XW      | C2-236                 | C2-214     |
|                                                                              | 480   | 12.0 | 3  | 1       | 64 <sup>1</sup> / <sub>2</sub> (1638) | 68 (31)           | FNS764J13XS               | FNS764J13XW      | C2-43                  | C2-35      |
|                                                                              | 240   | 15.0 | 3  | 1       | 77 (1956)                             | 78 (36)           | FNS777A12XS               | FNS777A12XW      | C2-236                 | C2-214     |
|                                                                              | 480   | 15.0 | 3  | 1       | 77 (1956)                             | 78 (36)           | FNS777A13XS               | FNS777A13XW      | C2-225                 | C2-226     |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only



# Immersion Heaters



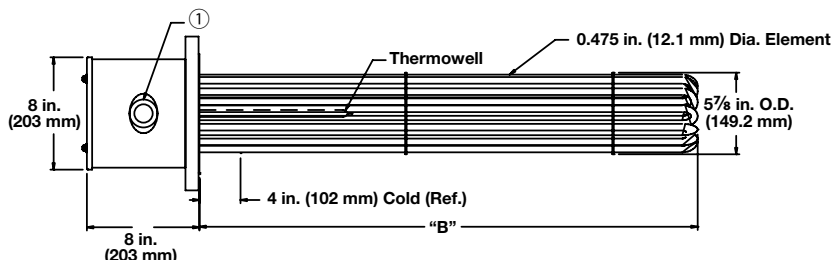
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 6 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                       | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number      | WATCONNECT Part Number |            |
|-----------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|------------------|------------------------|------------|
|                                                                                   |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure | Type J T/C             | Type K T/C |
| <b>8 W/in<sup>2</sup> ③ Steel Flange 12-Steel Elements (1.3 W/cm<sup>2</sup>)</b> | 240   | 8.0  | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R12S                | FPS732R12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 8.0  | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 85 (39)           | FPS732R13S                | FPS732R13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 10.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G12S                | FPS740G12W       | C2-50                  | C2-92      |
|                                                                                   | 480   | 10.0 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 92 (42)           | FPS740G13S                | FPS740G13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 12.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R12S                | FPS747R12W       | C2-236                 | C2-214     |
|                                                                                   | 480   | 12.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 100 (46)          | FPS747R13S                | FPS747R13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 16.5 | 3  | 1       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPS764G12S                | FPS764G12W       | C2-236                 | C2-214     |
|                                                                                   | 480   | 16.5 | 3  | 1       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 110 (50)          | FPS764G13S                | FPS764G13W       | C2-43                  | C2-35      |
|                                                                                   | 240   | 20.0 | 3  | 2       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPS776R12S                | FPS776R12W       | C2-236                 | C2-214     |
|                                                                                   | 480   | 20.0 | 3  | 1       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 118 (54)          | FPS776R13S                | FPS776R13W       | C2-43                  | C2-35      |
| <b>8 W/in<sup>2</sup> ③ Steel Flange 15-Steel Elements (1.3 W/cm<sup>2</sup>)</b> | 240   | 10.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R12XS               | FPS732R12XW      | C2-50                  | C2-92      |
|                                                                                   | 480   | 10.0 | 3  | 1       | 32 <sup>7</sup> / <sub>8</sub> (835.0)  | 90 (41)           | FPS732R13XS               | FPS732R13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 12.5 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G12XS               | FPS740G12XW      | C2-236                 | C2-214     |
|                                                                                   | 480   | 12.5 | 3  | 1       | 40 <sup>3</sup> / <sub>8</sub> (1025.5) | 98 (45)           | FPS740G13XS               | FPS740G13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 15.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R12XS               | FPS747R12XW      | C2-236                 | C2-214     |
|                                                                                   | 480   | 15.0 | 3  | 1       | 47 <sup>7</sup> / <sub>8</sub> (1216.0) | 108 (49)          | FPS747R13XS               | FPS747R13XW      | C2-43                  | C2-35      |
|                                                                                   | 240   | 21.0 | 3  | 5       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPS764G12XS               | FPS764G12XW      | C4-143                 | C4-142     |
|                                                                                   | 480   | 21.0 | 3  | 1       | 64 <sup>3</sup> / <sub>8</sub> (1635.1) | 120 (55)          | FPS764G13XS               | FPS764G13XW      | C2-225                 | C2-226     |
|                                                                                   | 240   | 25.0 | 3  | 5       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPS776R12XS               | FPS776R12XW      | C4-143                 | C4-142     |
|                                                                                   | 480   | 25.0 | 3  | 1       | 76 <sup>7</sup> / <sub>8</sub> (1952.4) | 131 (60)          | FPS776R13XS               | FPS776R13XW      | C2-224                 | C2-226     |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

- For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



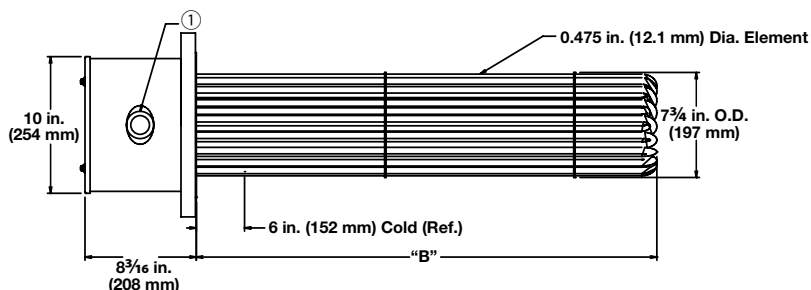
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 8 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



- ① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                      | Volts | kW   | Ph | # Circ. | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part Number                  | Part Number         | WATCONNECT<br>Part Number |               |
|------------------------------------------------------------------|-------|------|----|---------|----------------------|----------------------|------------------------------|---------------------|---------------------------|---------------|
|                                                                  |       |      |    |         |                      |                      | General Purpose<br>Enclosure | NEMA 4<br>Enclosure | Type J<br>T/C             | Type K<br>T/C |
| 8 W/in² ③<br>Steel Flange<br>18-Steel<br>Elements<br>(1.3 W/cm²) | 240   | 12.5 | 3  | 1       | 43 1/4 (1099.0)      | 132 (60)             | FRS743E12S                   | FRS743E12W          | C2-236                    | C2-214        |
|                                                                  | 480   | 12.5 | 3  | 1       | 43 1/4 (1099.0)      | 132 (60)             | FRS743E13S                   | FRS743E13W          | C2-43                     | C2-35         |
|                                                                  | 240   | 16.5 | 3  | 1       | 51 11/16 (1312.9)    | 137 (63)             | FRS751M12S                   | FRS751M12W          | C2-236                    | C2-214        |
|                                                                  | 480   | 16.5 | 3  | 1       | 51 11/16 (1312.9)    | 137 (63)             | FRS751M13S                   | FRS751M13W          | C2-43                     | C2-35         |
|                                                                  | 240   | 20.0 | 3  | 2       | 62 3/16 (1579.6)     | 154 (70)             | FRS762D12S                   | FRS762D12W          | C2-219                    | C2-220        |
|                                                                  | 480   | 20.0 | 3  | 1       | 62 3/16 (1579.6)     | 154 (70)             | FRS762D13S                   | FRS762D13W          | C2-43                     | C2-50         |
|                                                                  | 240   | 24.0 | 3  | 2       | 70 11/16 (1795.5)    | 160 (73)             | FRS770M12S                   | FRS770M12W          | C2-218                    | C2-224        |
|                                                                  | 480   | 24.0 | 3  | 1       | 70 11/16 (1795.5)    | 160 (73)             | FRS770M13S                   | FRS770M13W          | C2-225                    | C2-226        |
|                                                                  | 240   | 27.0 | 3  | 2       | 79 11/16 (2024.1)    | 172 (78)             | FRS779M12S                   | FRS779M12W          | C2-218                    | C2-224        |
| 8 W/in² ③<br>Steel Flange<br>24-Steel<br>Elements<br>(1.3 W/cm²) | 480   | 27.0 | 3  | 1       | 79 11/16 (2024.1)    | 172 (78)             | FRS779M13S                   | FRS779M13W          | C2-225                    | C2-226        |
|                                                                  | 240   | 17.0 | 3  | 1       | 43 11/16 (1109.7)    | 147 (67)             | FRS743M12XS                  | FRS743M12XW         | C2-236                    | C2-214        |
|                                                                  | 480   | 17.0 | 3  | 1       | 43 11/16 (1109.7)    | 147 (67)             | FRS743M13XS                  | FRS743M13XW         | C2-43                     | C2-35         |
|                                                                  | 240   | 22.0 | 3  | 2       | 51 11/16 (1312.9)    | 154 (70)             | FRS751M12XS                  | FRS751M12XW         | C2-218                    | C2-224        |
|                                                                  | 480   | 22.0 | 3  | 1       | 51 11/16 (1312.9)    | 154 (70)             | FRS751M13XS                  | FRS751M13XW         | C2-225                    | C2-226        |
|                                                                  | 240   | 27.0 | 3  | 2       | 62 3/16 (1579.6)     | 166 (76)             | FRS762D12XS                  | FRS762D12XW         | C2-218                    | C2-224        |
|                                                                  | 480   | 27.0 | 3  | 1       | 62 3/16 (1579.6)     | 166 (76)             | FRS762D13XS                  | FRS762D13XW         | C2-225                    | C2-226        |
|                                                                  | 240   | 32.0 | 3  | 2       | 70 11/16 (1795.5)    | 175 (80)             | FRS770M12XS                  | FRS770M12XW         | C2-218                    | C2-224        |
|                                                                  | 480   | 32.0 | 3  | 1       | 70 11/16 (1795.5)    | 175 (80)             | FRS770M13XS                  | FRS770M13XW         | C2-225                    | C2-226        |
|                                                                  | 240   | 36.0 | 3  | 2       | 79 11/16 (2024.1)    | 181 (82)             | FRS779M12XS                  | FRS779M12XW         | C2-218                    | C2-224        |
|                                                                  | 480   | 36.0 | 3  | 1       | 79 11/16 (2024.1)    | 181 (82)             | FRS779M13XS                  | FRS779M13XW         | C2-224                    | C2-226        |

- Notes:**
- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
  - For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



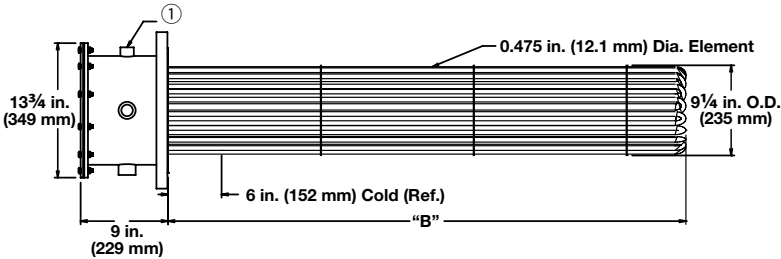
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 10 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                       | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                     | Ship Wt. lbs (kg) | Part Number               | Part Number       | WATCONNECT Part Number |               |
|-----------------------------------------------------------------------------------|-------|------|----|---------|---------------------------------------|-------------------|---------------------------|-------------------|------------------------|---------------|
|                                                                                   |       |      |    |         |                                       |                   | General Purpose Enclosure | NEMA 4 Enclosure  | Type J T/C             | Type K T/C    |
| <b>8 W/in<sup>2</sup> ③ Steel Flange 27-Steel Elements (1.3 W/cm<sup>2</sup>)</b> | 240   | 25.0 | 3  | 3       | 51 <sup>3</sup> / <sub>4</sub> (1314) | 230 (105)         | <b>FSS751N12S</b>         | <b>FSS751N12W</b> | <b>C4-143</b>          | <b>C4-142</b> |
|                                                                                   | 480   | 25.0 | 3  | 1       | 51 <sup>3</sup> / <sub>4</sub> (1314) | 230 (105)         | <b>FSS751N13S</b>         | <b>FSS751N13W</b> | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                   | 240   | 30.0 | 3  | 3       | 62 <sup>1</sup> / <sub>4</sub> (1581) | 250 (114)         | <b>FSS762E12S</b>         | <b>FSS762E12W</b> | <b>C4-143</b>          | <b>C4-142</b> |
|                                                                                   | 480   | 30.0 | 3  | 1       | 62 <sup>1</sup> / <sub>4</sub> (1581) | 250 (114)         | <b>FSS762E13S</b>         | <b>FSS762E13W</b> | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                   | 240   | 35.0 | 3  | 3       | 70 <sup>3</sup> / <sub>4</sub> (1797) | 258 (117)         | <b>FSS770N12S</b>         | <b>FSS770N12W</b> | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                   | 480   | 35.0 | 3  | 1       | 70 <sup>3</sup> / <sub>4</sub> (1797) | 258 (117)         | <b>FSS770N13S</b>         | <b>FSS770N13W</b> | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                   | 240   | 40.0 | 3  | 3       | 78 <sup>3</sup> / <sub>4</sub> (2000) | 265 (121)         | <b>FSS778N12S</b>         | <b>FSS778N12W</b> | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                   | 480   | 40.0 | 3  | 1       | 78 <sup>3</sup> / <sub>4</sub> (2000) | 265 (121)         | <b>FSS778N13S</b>         | <b>FSS778N13W</b> | <b>C2-225</b>          | <b>C2-226</b> |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters

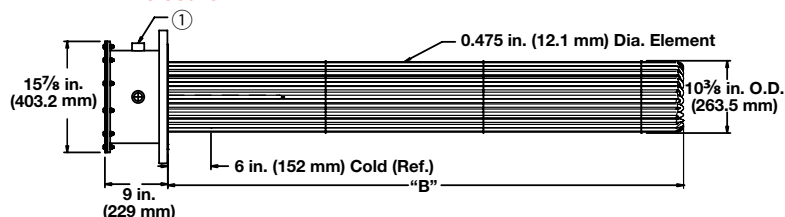


## WATROD ANSI Flange Immersion Heaters

### Application: Bunker C, Asphalt and #6 Fuel Oil

- 12 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

#### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                                   | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm)                       | Ship Wt. lbs (kg) | Part Number               | Part Number       | WATCONNECT Part Number |               |
|-----------------------------------------------------------------------------------------------|-------|------|----|---------|-----------------------------------------|-------------------|---------------------------|-------------------|------------------------|---------------|
|                                                                                               |       |      |    |         |                                         |                   | General Purpose Enclosure | NEMA 4 Enclosure  | Type J T/C             | Type K T/C    |
| <b>8 W/in<sup>2</sup> ③<br/>Steel Flange<br/>27-Steel Elements<br/>(1.3 W/cm<sup>2</sup>)</b> | 240   | 34.0 | 3  | 2       | 51 <sup>5</sup> / <sub>8</sub> (1311.3) | 280 (127)         | <b>FTS751L12S</b>         | <b>FTS751L12W</b> | <b>C2-218</b>          | <b>C2-224</b> |
|                                                                                               | 480   | 34.0 | 3  | 1       | 51 <sup>5</sup> / <sub>8</sub> (1311.3) | 280 (127)         | <b>FTS751L13S</b>         | <b>FTS751L13W</b> | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                               | 240   | 40.0 | 3  | 2       | 62 <sup>1</sup> / <sub>8</sub> (1578.0) | 285 (130)         | <b>FTS762C12S</b>         | <b>FTS762C12W</b> | <b>C2-218</b>          | <b>C2-224</b> |
|                                                                                               | 480   | 40.0 | 3  | 1       | 62 <sup>1</sup> / <sub>8</sub> (1578.0) | 285 (130)         | <b>FTS762C13S</b>         | <b>FTS762C13W</b> | <b>C2-225</b>          | <b>C2-226</b> |
|                                                                                               | 240   | 47.0 | 3  | 3       | 70 <sup>5</sup> / <sub>8</sub> (1793.9) | 290 (132)         | <b>FTS770L12S</b>         | <b>FTS770L12W</b> | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                               | 480   | 47.0 | 3  | 2       | 70 <sup>5</sup> / <sub>8</sub> (1793.9) | 290 (132)         | <b>FTS770L13S</b>         | <b>FTS770L13W</b> | <b>C2-229</b>          | <b>C2-230</b> |
|                                                                                               | 240   | 54.0 | 3  | 3       | 78 <sup>5</sup> / <sub>8</sub> (1997.1) | 300 (136)         | <b>FTS778L12S</b>         | <b>FTS778L12W</b> | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                               | 480   | 54.0 | 3  | 2       | 78 <sup>5</sup> / <sub>8</sub> (1997.1) | 300 (136)         | <b>FTS778L13S</b>         | <b>FTS778L13W</b> | <b>C2-229</b>          | <b>C2-230</b> |

**Notes:**

- All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe
- For ANSI flange dimensions, reference chart on page 224

③ Wired for 3-phase operation only

# Immersion Heaters



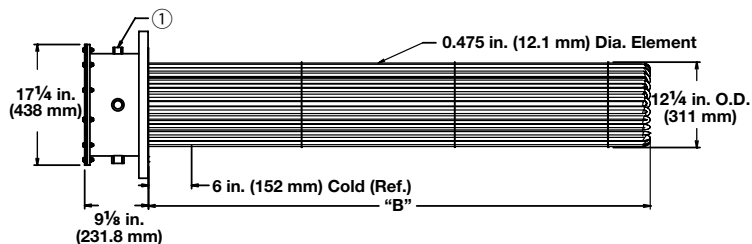
## WATROD ANSI Flange Immersion Heaters



### Application: Bunker C, Asphalt and #6 Fuel Oil

- 14 inch - 150 lb ANSI flange
- WATROD elements
- Without thermostat
- General purpose or NEMA 4 enclosure

### General Purpose or NEMA 4 Enclosure



① The number and size of the conduit opening will comply with the National Electrical Code® standards.

| Description                                                                       | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number                  | WATCONNECT Part Number |               |
|-----------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------------------|------------------------|---------------|
|                                                                                   |       |      |    |         |                   |                   | General Purpose Enclosure | Moisture-Resistant Enclosure | Type J T/C             | Type K T/C    |
| <b>8 W/in<sup>2</sup> ③ Steel Flange 27-Steel Elements (1.3 W/cm<sup>2</sup>)</b> | 240   | 42.0 | 3  | 3       | 51 1/2 (1308)     | 300 (136)         | <b>FWS751J12S</b>         | <b>FWS751J12W</b>            | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                   | 480   | 42.0 | 3  | 3       | 51 1/2 (1308)     | 300 (136)         | <b>FWS751J13S</b>         | <b>FWS751J13W</b>            | <b>C4-150</b>          | <b>C4-151</b> |
|                                                                                   | 240   | 50.0 | 3  | 3       | 62 (1575)         | 310 (141)         | <b>FWS762A12S</b>         | <b>FWS762A12W</b>            | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                   | 480   | 50.0 | 3  | 3       | 62 (1575)         | 310 (141)         | <b>FWS762A13S</b>         | <b>FWS762A13W</b>            | <b>C4-150</b>          | <b>C4-151</b> |
|                                                                                   | 240   | 60.0 | 3  | 3       | 70 1/2 (1791)     | 318 (145)         | <b>FWS770J12S</b>         | <b>FWS770J12W</b>            | <b>C4-144</b>          | <b>C4-145</b> |
|                                                                                   | 480   | 60.0 | 3  | 3       | 70 1/2 (1791)     | 318 (145)         | <b>FWS770J13S</b>         | <b>FWS770J13W</b>            | <b>C4-150</b>          | <b>C4-151</b> |
|                                                                                   | 240   | 67.0 | 3  | 5       | 78 1/2 (1994)     | 330 (150)         | <b>FWS778J12S</b>         | <b>FWS778J12W</b>            | <b>C/F</b>             | <b>C/F</b>    |
|                                                                                   | 480   | 67.0 | 3  | 3       | 78 1/2 (1994)     | 330 (150)         | <b>FWS778J13S</b>         | <b>FWS778J13W</b>            | <b>C4-152</b>          | <b>C4-153</b> |

**Notes:** • All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe  
 • For ANSI flange dimensions, reference chart on page 224

C/F - Contact factory, go to [www.watlow.com/en/contact-us](http://www.watlow.com/en/contact-us)

③ Wired for 3-phase operation only

# Immersion Heaters



## WATROD ANSI Flange Immersion Heaters

### Part Number

| Stock ANSI Flange Part Number | Optional Terminal Enclosures | Optional Process Sensors | Sheath Limit Sensors |
|-------------------------------|------------------------------|--------------------------|----------------------|
|                               |                              |                          |                      |

#### Stock ANSI Flange Part Number

**Note:** Catalog part numbers include optional enclosures and process sensors. To order optional enclosures or sensors, substitute the appropriate suffix.

#### Optional Terminal Enclosures

|     |                                      |
|-----|--------------------------------------|
| S = | General purpose enclosure            |
| W = | NEMA 4 enclosure                     |
| C = | CSA Type 4/explosion proof enclosure |

**Note:** Catalog listings include either a general purpose enclosure or NEMA 4 enclosure. Substitute enclosure options are noted.

#### Optional Bulb & Capillary Thermostats or Thermocouple Process Sensors

|     |                                           |
|-----|-------------------------------------------|
| 2 = | 30 to 250°F, (-1 to 121°C) SPST           |
| 3 = | 175 to 550°F, (79 to 288°C) SPST          |
| 4 = | 30 to 110°F, (-1 to 43°C) DPST            |
| 5A= | 60 to 250°F, (16 to 121°C) DPST           |
| 7A= | 100 to 550°F, (38 to 288°C) DPST          |
| PJ= | Type J process thermocouple in thermowell |
| PK= | Type K process thermocouple in thermowell |

**Note:** Thermostat part numbers are shown in the *Thermostat Chart* on page 517.

#### Sheath Limit Sensors

|     |                                                            |
|-----|------------------------------------------------------------|
| HJ= | Type J high-limit thermocouple, horizontal mount           |
| TJ= | Type J high-limit thermocouple, vertical/housing at top    |
| BJ= | Type J high-limit thermocouple, vertical/housing at bottom |
| HK= | Type K high-limit thermocouple, horizontal mount           |
| TK= | Type K high-limit thermocouple, vertical/housing at top    |
| BK= | Type K high-limit thermocouple, vertical/housing at bottom |

**Note:** Heater orientation is critical to accurate sensing of limit conditions. Use the appropriate code to indicate heater mounting orientation.

**Example Part Number:** FPS732R12 S 2 HJ

# Immersion Heaters



## WATROD™ Plate Flange Immersion Heaters

Watlow plate flange heaters are easy to install and maintain. These products are designed for heating heat transfer fluids, medium and lightweight oils and water in tanks and pressure vessels. Plate flange heaters are ideal for applications requiring low to medium wattage requirements.

Watlow plate flange heaters are made with WATROD tubular elements that are brazed or welded to the flange. Stock plate flange heaters are supplied with general purpose or moisture-resistant terminal enclosures.

### Performance Capabilities

- Watt densities up to 100 W/in<sup>2</sup> (15.5 W/cm<sup>2</sup>)
- Wattages up to 18 kilowatts
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)
- 304 stainless steel sheath temperatures up to 1200°F (650°C)
- Steel sheath temperatures up to 750°F (400°C)

### Features and Benefits

#### Direct replacement for many OEM mold temperature control units

- Provides a single source supplier for many OEM applications

#### ANSI compatible 2 and 2½ inch flanges

- Provides appropriate heater size-to-application fit

#### Standard general purpose or moisture resistant terminal enclosures

- Offers easy access to wiring
- Limits accidental contact with termination
- Denies access to wiring connection in local environment





# Immersion Heaters

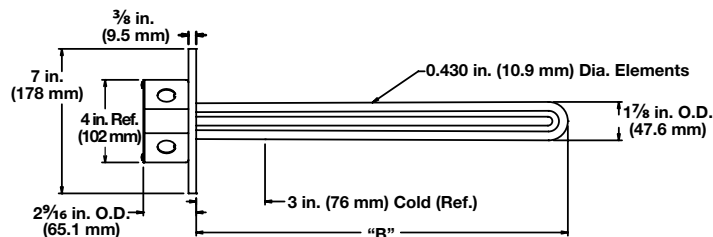


## WATROD Plate Flange Immersion Heaters

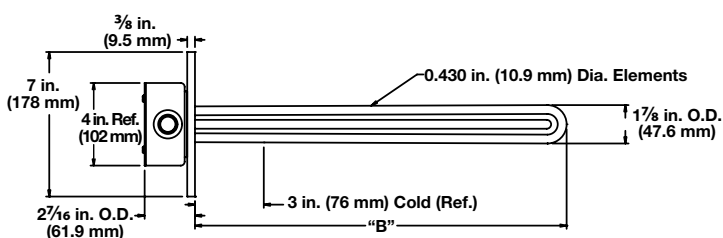
### Application: Clean Water

- 2 1/2 inch plate flange (bolt pattern matches 2 1/2 inch - 150 lb ANSI flange)
- WATROD elements
- Not available with thermowell or thermostat
- General purpose or moisture-resistant enclosures

### General Purpose



### Moisture Resistant



| Description                                                                     | Volts | kW   | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number                  |
|---------------------------------------------------------------------------------|-------|------|----|---------|-------------------|-------------------|---------------------------|------------------------------|
|                                                                                 |       |      |    |         |                   |                   | General Purpose Enclosure | Moisture-Resistant Enclosure |
| 100 W/in <sup>2</sup> Steel Flange 3-304 SS Elements (15.5 W/cm <sup>2</sup> )  | 240   | 12.0 | 1  | 3       | 18 (457)          | 22 (10)           | FLN18A10S                 | FLN18A10W                    |
|                                                                                 | 240   | 12.0 | 3  | 1       | 18 (457)          | 22 (10)           | FLN18A3S                  | FLN18A3W                     |
|                                                                                 | 480   | 12.0 | 1  | 1       | 18 (457)          | 22 (10)           | FLN18A11S                 | FLN18A11W                    |
|                                                                                 | 480   | 12.0 | 3  | 1       | 18 (457)          | 22 (10)           | FLN18A5S                  | FLN18A5W                     |
| 80 W/in <sup>2</sup> Steel Flange 3-304 SS Elements (12.4 W/cm <sup>2</sup> )   | 240   | 9.0  | 1  | 1       | 17 3/4 (451)      | 22 (10)           | FLN17N10S                 | FLN17N10W                    |
|                                                                                 | 240   | 9.0  | 3  | 1       | 17 3/4 (451)      | 22 (10)           | FLN17N3S                  | FLN17N3W                     |
|                                                                                 | 480   | 9.0  | 1  | 1       | 17 3/4 (451)      | 22 (10)           | FLN17N11S                 | FLN17N11W                    |
|                                                                                 | 480   | 9.0  | 3  | 1       | 17 3/4 (451)      | 22 (10)           | FLN17N5S                  | FLN17N5W                     |
|                                                                                 | 240   | 18.0 | 1  | 3       | 30 (762)          | 27 (13)           | FLN30A10S                 | FLN30A10W                    |
|                                                                                 | 240   | 18.0 | 3  | 1       | 30 (762)          | 27 (13)           | FLN30A3S                  | FLN30A3W                     |
|                                                                                 | 480   | 18.0 | 1  | 1       | 30 (762)          | 27 (13)           | FLN30A11S                 | FLN30A11W                    |
|                                                                                 | 480   | 18.0 | 3  | 1       | 30 (762)          | 27 (13)           | FLN30A5S                  | FLN30A5W                     |
| 60 W/in <sup>2</sup> Steel Flange 3-Alloy 800 Elements (9.3 W/cm <sup>2</sup> ) | 240   | 4.5  | 1  | 1       | 12 1/2 (318)      | 21 (10)           | FLN12J10S                 | FLN12J10W                    |
|                                                                                 | 240   | 4.5  | 3  | 1       | 12 1/2 (318)      | 21 (10)           | FLN12J3S                  | FLN12J3W                     |
|                                                                                 | 480   | 4.5  | 1  | 1       | 12 1/2 (318)      | 21 (10)           | FLN12J11S                 | FLN12J11W                    |
|                                                                                 | 480   | 4.5  | 3  | 1       | 12 1/2 (318)      | 21 (10)           | FLN12J5S                  | FLN12J5W                     |

**Note:** All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

# Immersion Heaters

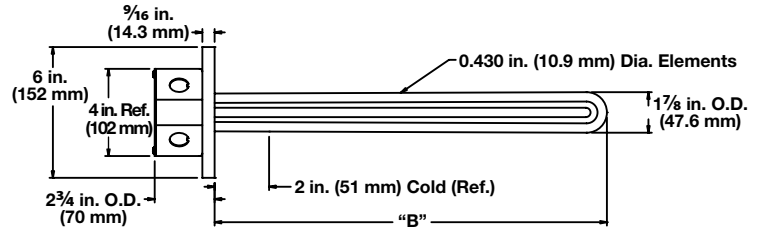


## WATROD Plate Flange Immersion Heaters

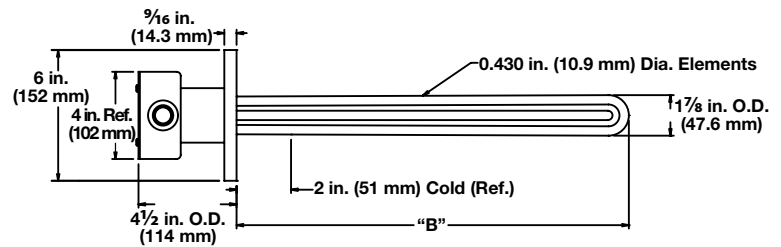
### Application: Process Water

- 2 inch flange (bolt pattern matches 2 inch - 150 lb ANSI flange)
- WATROD elements
- Not available with thermowell or thermostat
- General purpose or moisture-resistant enclosures

#### General Purpose



#### Moisture Resistant



| Description                                                                   | Volts | kW  | PH | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number                  |
|-------------------------------------------------------------------------------|-------|-----|----|---------|-------------------|-------------------|---------------------------|------------------------------|
|                                                                               |       |     |    |         |                   |                   | General Purpose Enclosure | Moisture-Resistant Enclosure |
| 45 W/in <sup>2</sup> Steel Flange 3-Alloy 800 Elements (7 W/cm <sup>2</sup> ) | 240   | 4.5 | 1  | 1       | 16 (406)          | 22 (10)           | FKN16A10S                 | FKN16A10W                    |
|                                                                               | 240   | 4.5 | 3  | 1       | 16 (406)          | 22 (10)           | FKN16A3S                  | FKN16A3W                     |
|                                                                               | 480   | 4.5 | 1  | 1       | 16 (406)          | 22 (10)           | FKN16A11S                 | FKN16A11W                    |
|                                                                               | 480   | 4.5 | 3  | 1       | 16 (406)          | 22 (10)           | FKN16A5S                  | FKN16A5W                     |
|                                                                               | 240   | 9.0 | 1  | 1       | 29 (737)          | 27 (13)           | FKN29A10S                 | FKN29A10W                    |
|                                                                               | 240   | 9.0 | 3  | 1       | 29 (737)          | 27 (13)           | FKN29A3S                  | FKN29A3W                     |
|                                                                               | 480   | 9.0 | 1  | 1       | 29 (737)          | 27 (13)           | FKN29A11S                 | FKN29A11W                    |
|                                                                               | 480   | 9.0 | 3  | 1       | 29 (737)          | 27 (13)           | FKN29A5S                  | FKN29A5W                     |
| 45 W/in <sup>2</sup> Steel Flange 3-Alloy 800 Elements (7 W/cm <sup>2</sup> ) | 240   | 9.0 | 1  | 1       | 28 (711)          | 27 (13)           | FKN28A10S                 | FKN28A10W                    |
|                                                                               | 240   | 9.0 | 3  | 1       | 28 (711)          | 27 (13)           | FKN28A3S                  | FKN28A3W                     |
|                                                                               | 480   | 9.0 | 1  | 1       | 28 (711)          | 27 (13)           | FKN28A11S                 | FKN28A11W                    |
|                                                                               | 480   | 9.0 | 3  | 1       | 28 (711)          | 27 (13)           | FKN28A5S                  | FKN28A5W                     |

**Note:** All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

# Immersion Heaters

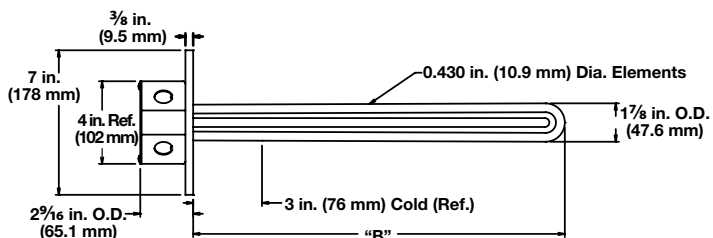


## WATROD Plate Flange Immersion Heaters

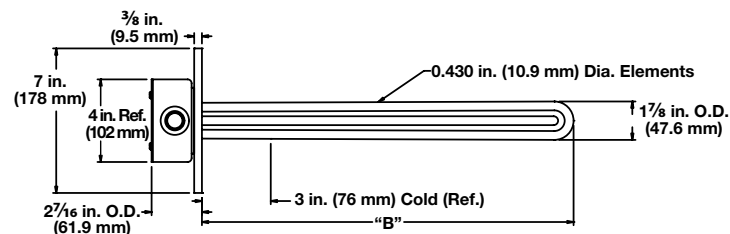
### Application: Forced Air and Caustic Solutions

- 2 1/2 inch flange (bolt pattern matches 2 1/2 inch - 150 lb ANSI flange)
- WATROD elements
- Not available with thermowell or thermostat
- General purpose or moisture-resistant enclosures

#### General Purpose



#### Moisture Resistant



| Description                                                                                 | Volts | kW  | Ph | # Circ. | "B" Dim. in. (mm)                    | Ship Wt. lbs (kg) | Part Number               | Part Number                  |
|---------------------------------------------------------------------------------------------|-------|-----|----|---------|--------------------------------------|-------------------|---------------------------|------------------------------|
|                                                                                             |       |     |    |         |                                      |                   | General Purpose Enclosure | Moisture-Resistant Enclosure |
| 30 W/in <sup>2</sup><br>Steel Flange<br>3-Alloy 800<br>Elements<br>(4.7 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 1       | 17 <sup>3</sup> / <sub>4</sub> (451) | 22 (10)           | FLN17N12S                 | FLN17N12W                    |
|                                                                                             | 480   | 3.0 | 3  | 1       | 17 <sup>3</sup> / <sub>4</sub> (451) | 22 (10)           | FLN17N13S                 | FLN17N13W                    |
|                                                                                             | 240   | 4.0 | 3  | 1       | 18 (457)                             | 22 (10)           | FLN18A12S                 | FLN18A12W                    |
|                                                                                             | 480   | 4.0 | 3  | 1       | 18 (457)                             | 22 (10)           | FLN18A13S                 | FLN18A13W                    |
|                                                                                             | 240   | 6.0 | 3  | 1       | 30 (762)                             | 27 (13)           | FLN30A12S                 | FLN30A12W                    |
|                                                                                             | 480   | 6.0 | 3  | 1       | 30 (762)                             | 27 (13)           | FLN30A13S                 | FLN30A13W                    |

**Note:** All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

# Immersion Heaters

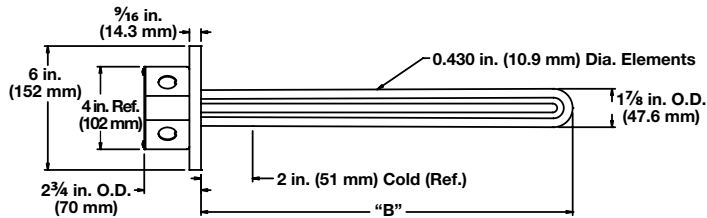


## WATROD Plate Flange Immersion Heaters

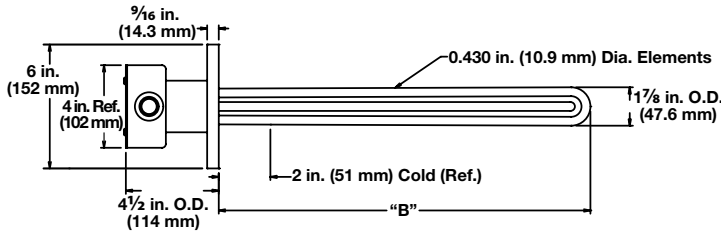
### Application: Lightweight Oils and Ethylene Glycol (100%)

- 2 inch flange (bolt pattern matches 2 inch - 150 lb ANSI flange)
- WATROD elements
- Not available with thermowell or thermostat
- General purpose or moisture-resistant enclosures

#### General Purpose



#### Moisture Resistant



| Description                                                                          | Volts | kW  | Ph | # Circ. | "B" Dim.<br>in. (mm) | Ship Wt.<br>lbs (kg) | Part<br>Number               | Part<br>Number                  |
|--------------------------------------------------------------------------------------|-------|-----|----|---------|----------------------|----------------------|------------------------------|---------------------------------|
|                                                                                      |       |     |    |         |                      |                      | General Purpose<br>Enclosure | Moisture-Resistant<br>Enclosure |
| 30 W/in <sup>2</sup><br>Steel Flange<br>3-Steel Elements<br>(4.7 W/cm <sup>2</sup> ) | 240   | 6.0 | 1  | 1       | 29 (737)             | 27 (13)              | FKS29A10S                    | FKS29A10W                       |
|                                                                                      | 240   | 6.0 | 3  | 1       | 29 (737)             | 27 (13)              | FKS29A3S                     | FKS29A3W                        |
|                                                                                      | 480   | 6.0 | 1  | 1       | 29 (737)             | 27 (13)              | FKS29A11S                    | FKS29A11W                       |
|                                                                                      | 480   | 6.0 | 3  | 1       | 29 (737)             | 27 (13)              | FKS29A5S                     | FKS29A5W                        |

**Note:** All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

# Immersion Heaters

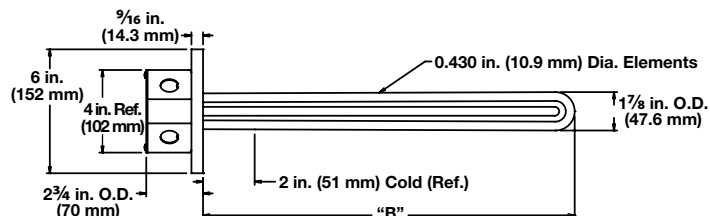


## WATROD Plate Flange Immersion Heaters

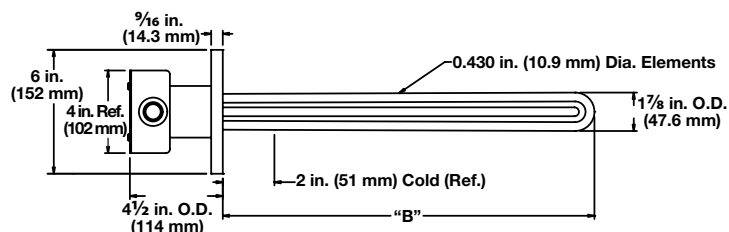
### Application: Medium Weight Oils and Heat Transfer Oils

- 2 inch flange (bolt pattern matches 2 inch - 150 lb ANSI flange)
- WATROD elements
- Not available with thermowell or thermostat
- General purpose or moisture-resistant enclosures

#### General Purpose



#### Moisture Resistant



| Description                                                                              | Volts | kW  | Ph | # Circ. | "B" Dim. in. (mm) | Ship Wt. lbs (kg) | Part Number               | Part Number                  |
|------------------------------------------------------------------------------------------|-------|-----|----|---------|-------------------|-------------------|---------------------------|------------------------------|
|                                                                                          |       |     |    |         |                   |                   | General Purpose Enclosure | Moisture-Resistant Enclosure |
| 15 W/in <sup>2</sup><br>Steel Flange<br>3-Alloy 800 Elements<br>(2.3 W/cm <sup>2</sup> ) | 240   | 3.0 | 3  | 1       | 28 (711)          | 27 (13)           | FKN28A12S                 | FKN28A12W                    |
|                                                                                          | 480   | 3.0 | 3  | 1       | 28 (711)          | 27 (13)           | FKN28A13S                 | FKN28A13W                    |
| 10 W/in <sup>2</sup><br>Steel Flange<br>3-Steel Elements<br>(1.6 W/cm <sup>2</sup> )     | 240   | 2.0 | 3  | 1       | 29 (737)          | 27 (13)           | FKS29A12S                 | FKS29A12W                    |
|                                                                                          | 480   | 2.0 | 3  | 1       | 29 (737)          | 27 (13)           | FKS29A13S                 | FKS29A13W                    |

**Note:** All flange bundles are designed to fit the inside diameter of the equivalent standard schedule pipe

# Immersion Heaters



## WATROD™ and FIREBAR® Square Flange Immersion Heaters

Designed for use in boilers and industrial storage tanks, the square flange immersion heater from Watlow® offers an energy efficient solution to heating water, oils and degreasing solutions.

Consisting of WATROD™ or FIREBAR® elements brazed, staked or welded to a four- or six-bolt flange, these heaters mount directly to a mating flange that is welded to a tank wall or nozzle.

Installation and maintenance is easy. Heater change-out is also simple-unbolt the flange and replace it with another-without extensive equipment downtime.

### Performance Capabilities

- Watt densities up to 100 W/in<sup>2</sup> (15.5 W/cm<sup>2</sup>)
- Wattages up to 24 kilowatts
- Voltages up to 480VAC
- Alloy 800/840 sheath temperatures up to 1600°F (870°C)

### Features and Benefits

#### 2½, 3⅛ and 4½ inch square flanges

- Adapts easily to application needs

#### Asbestos-free gaskets

- Come wire-tied to each flange. Spare gaskets also available

#### Epoxy or silicone resin seals rated to 250°F (120°C) or 390°F (200°C)

- Protects elements against moisture and other contaminants

#### WATROD hairpins are repressed (recompacted)

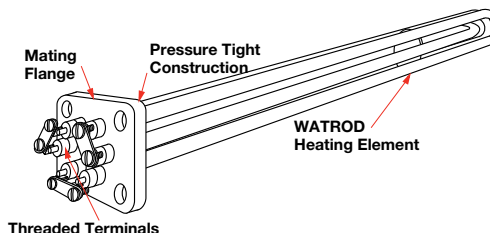
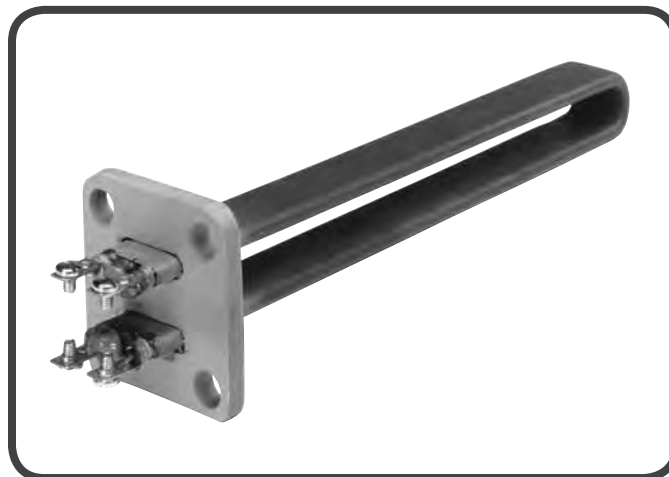
- Helps maintain MgO density, dielectric strength, heat transfer and life

#### UL® and CSA component recognition under file numbers E52951 and 31388

- Meets industry safety standards

### Typical Applications

- Water
- Boiler equipment
- Vapor degreasers
- Fuel oils
- Heat transfer fluids
- Caustic solutions



### Flange Materials

|         |                 |
|---------|-----------------|
| WATROD  | Steel<br>304 SS |
| FIREBAR | Steel           |

### Available on Request

- **Sheath materials** in steel, 304 and 316 stainless steel and titanium
- **Flange materials** in titanium and 316 stainless steel
- **Flange sizes** to meet specific application needs
- **External finishes** such as passivation, belt polishing and glass beading
- **Other voltage and wattage ratings**  
Contact your Watlow representative for details

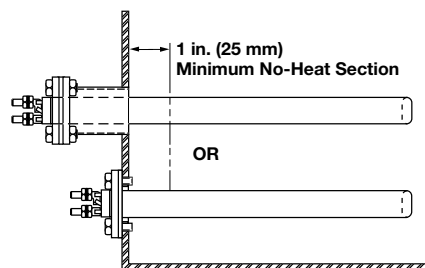
# Immersion Heaters



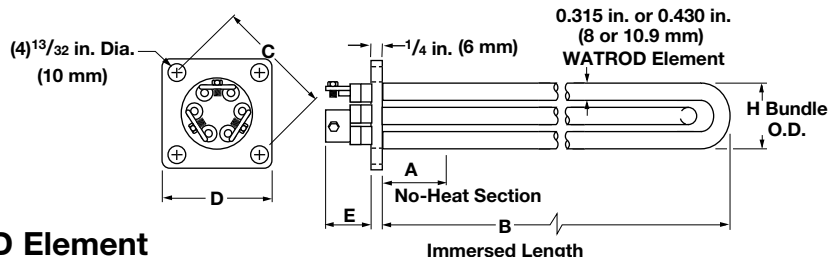
## WATROD and FIREBAR Square Flange Immersion Heaters

### Application Hints

- Determine recommended sheath materials and watt densities by using the *Element and Assembly Selection Guide* on pages 549 to 550. If wattage is not known, contact your Watlow representative.
- Extend the element's no-heat section completely in the fluid at all times to prevent premature heater failure. See the accompanying illustration for proper placement of the no-heat section.
- Mount WATROD and FIREBAR square flange heaters horizontally and low in the tank, but above sludge level.
- Periodically remove heaters to inspect and clean the elements.
- Keep terminations clean, dry and tight.
- Minimize problems associated with low liquid level conditions by using a low liquid level sensor.



| Heater Dimension | in.   | (mm) |
|------------------|-------|------|
| A                | 1 1/2 | (38) |
| C                | 2 1/2 | (64) |
| D                | 2 1/2 | (64) |
| E                | 1     | (25) |
| H                | 1 1/2 | (38) |



### 2 1/2 inch Square Flange—WATROD Element

| WATROD Description | kW | Immersed B Dimension in. (mm) | Part Number    |                |                |                | Est. Ship. Wt. lbs (kg) |
|--------------------|----|-------------------------------|----------------|----------------|----------------|----------------|-------------------------|
|                    |    |                               | 240VAC 1-Phase | 240VAC 3-Phase | 480VAC 1-Phase | 480VAC 3-Phase |                         |

#### Applications: Clean and Potable Water

|                                                                                   |     |                |          |         |          |         |        |
|-----------------------------------------------------------------------------------|-----|----------------|----------|---------|----------|---------|--------|
| 100 W/in <sup>2</sup><br>Steel Flange<br>3-Alloy 800<br>(15.5 W/cm <sup>2</sup> ) | 8.0 | 11 3/4 (298.0) | FHN11N10 | FHN11N3 | FHN11N11 | FHN11N5 | 18 (9) |
|-----------------------------------------------------------------------------------|-----|----------------|----------|---------|----------|---------|--------|

#### Applications: Forced Air and Gases, Caustic Solutions, Degreasing Solutions

|                                                                                  |             |                                   |                      |                    |                      |                    |                  |
|----------------------------------------------------------------------------------|-------------|-----------------------------------|----------------------|--------------------|----------------------|--------------------|------------------|
| 30 W/in <sup>2</sup><br>304 SS Flange<br>3-Alloy 800<br>(4.7 W/cm <sup>2</sup> ) | 3.0<br>3.75 | 18 1/2 (470.0)<br>23 1/16 (585.8) | FHN18J10<br>FHN23B10 | FHN18J3<br>FHN23B3 | FHN18J11<br>FHN23B11 | FHN18J5<br>FHN23B5 | 19 (9)<br>20 (9) |
| 25 W/in <sup>2</sup><br>304 SS Flange<br>3-Alloy 800<br>(3.9 W/cm <sup>2</sup> ) | 1.5         | 12 (305.0)                        | FHN12A10             | FHN12A3            | FHN12A11             | FHN12A5            | 18 (8)           |

#### Applications: Bunker C and #6 Fuel Oils

|                                                                                  |             |                                   |  |                      |  |                      |                  |
|----------------------------------------------------------------------------------|-------------|-----------------------------------|--|----------------------|--|----------------------|------------------|
| 10 W/in <sup>2</sup><br>304 SS Flange<br>3-Alloy 800<br>(1.6 W/cm <sup>2</sup> ) | 1.0<br>1.25 | 18 1/2 (470.0)<br>23 1/16 (585.8) |  | FHN18J12<br>FHN23B12 |  | FHN18J13<br>FHN23B13 | 19 (9)<br>20 (9) |
| 8 W/in <sup>2</sup><br>304 SS Flange<br>3-Alloy 800<br>(1.3 W/cm <sup>2</sup> )  | 0.5         | 12 (305.0)                        |  | FHN12A12             |  | FHN12A13             | 18 (8)           |

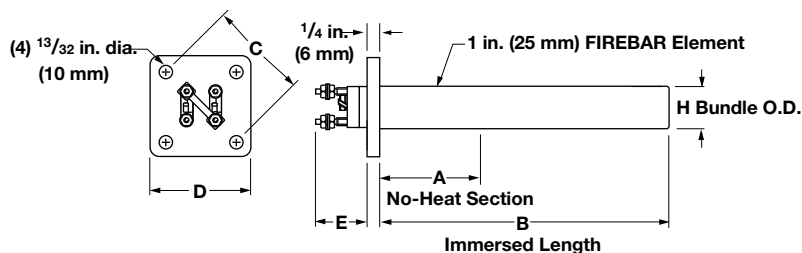


# Immersion Heaters



## WATROD and FIREBAR Square Flange Immersion Heaters

| Heater Dimension | in.    | (mm) |
|------------------|--------|------|
| A                | 1 1/2  | (38) |
| C                | 2 1/2  | (64) |
| D                | 2 1/2  | (64) |
| E                | 1 3/4  | (44) |
| H                | 1 5/16 | (33) |



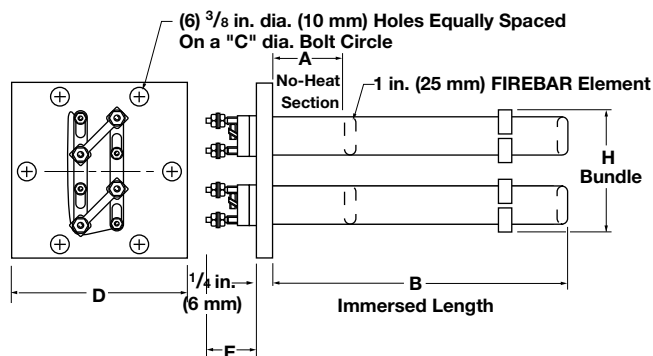
### 2 1/2 inch Square Flange—FIREBAR Element

| FIREBAR Description | kW | Immersed B Dimension in. (mm) | Part Number    |                |                |                |                | Est. Ship. |      |
|---------------------|----|-------------------------------|----------------|----------------|----------------|----------------|----------------|------------|------|
|                     |    |                               | 208VAC 3-Phase | 240VAC 1-Phase | 240VAC 3-Phase | 480VAC 1-Phase | 480VAC 3-Phase | Wt. lbs    | (kg) |

#### Applications: Clean and Potable Water

|                                                                                   |    |                |             |             |            |             |            |    |     |
|-----------------------------------------------------------------------------------|----|----------------|-------------|-------------|------------|-------------|------------|----|-----|
| 100 W/in <sup>2</sup><br>Steel Flange<br>1-Alloy 800<br>(15.5 W/cm <sup>2</sup> ) | 5  | 11 1/2 (292)   | FHNFA11J26N | FHNFA11J10N | FHNFA11J3N | FHNFA11J11N | FHNFA11J5N | 5  | (3) |
|                                                                                   | 8  | 20 3/4 (527)   | FHNFA20N26N | FHNFA20N10N | FHNFA20N3N | FHNFA20N11N | FHNFA20N5N | 7  | (4) |
|                                                                                   | 10 | 24 3/8 (619)   | FHNFA24G26N | FHNFA24G10N | FHNFA24G3N | FHNFA24G11N | FHNFA24G5N | 8  | (4) |
|                                                                                   | 15 | 33 15/16 (862) | FHNFA33S26N |             | FHNFA33S3N | FHNFA33S11N | FHNFA33S5N | 9  | (5) |
| 80 W/in <sup>2</sup><br>Steel Flange<br>1-Alloy 800<br>(12.4 W/cm <sup>2</sup> )  | 16 | 22 5/8 (575)   | FHNFB22L26J | FHNFB22L10J | FHNFB22L3J | FHNFB22L11J | FHNFB22L5J | 10 | (5) |

| Heater Dimension | in.     | (mm)    |
|------------------|---------|---------|
| A                | 1       | (25.0)  |
| C                | 3 13/16 | (96.8)  |
| D                | 4 1/2   | (114.0) |
| E                | 2 1/4   | (57.0)  |
| H                | 3 7/32  | (81.8)  |



### 4 1/2 inch Square Flange—FIREBAR Element

| FIREBAR Description | kW | Immersed B Dimension in. (mm) | Part Number    |                |                | Est. Ship. |      |
|---------------------|----|-------------------------------|----------------|----------------|----------------|------------|------|
|                     |    |                               | 208VAC 3-Phase | 240VAC 3-Phase | 480VAC 3-Phase | Wt. lbs    | (kg) |

#### Applications: Clean and Potable Water

|                                                                                   |    |              |             |            |            |    |     |
|-----------------------------------------------------------------------------------|----|--------------|-------------|------------|------------|----|-----|
| 100 W/in <sup>2</sup><br>Steel Flange<br>2-Alloy 800<br>(15.5 W/cm <sup>2</sup> ) | 18 | 10 1/2 (267) | FGNFB10J26N | FGNFB10J3N | FGNFB10J5N | 16 | (8) |
| 70 W/in <sup>2</sup><br>Steel Flange<br>2-Alloy 800<br>(10.9 W/cm <sup>2</sup> )  | 12 | 10 1/2 (267) | FGNFB10J26P | FGNFB10J3P | FGNFB10J5P | 16 | (8) |

# Immersion Heaters

**EXTENDED  
CAPABILITY**



## WATROD™ and FIREBAR® Flange Immersion Heaters

### *Extended Capabilities for Bayonet/Pipe Insert Immersion Heaters*

Bayonet/Pipe insert immersion heaters permit removing and servicing the heater bundle without draining the liquid being heated.

Heating is accomplished by mounting a flange or screw plug immersion heater inside a pressure-tight bayonet pipe vessel. The pipe vessel then mates to a flange connection on a storage tank's side. Heat transfer between element(s) and tank contents is accomplished by heating the air or heat transfer fluid inside the bayonet pipe for conduction to the tank's contents.

### Performance Capabilities

- Wattages up to 100 kilowatts
- Voltages up to 600VAC
- Ratings up to 600 lb pressure class
- Alloy 800 sheath temperatures up to 1400°F (760°C)
- Stainless steel sheath temperatures up to 1200°F (650°C)
- Steel sheath temperatures up to 750°F (400°C)

### Features and Benefits

#### Low watt density screw plug or flange heaters mounted in the bayonet vessel

- Provides long life

#### Carbon steel, 304 and 316 stainless steel bayonet vessels

- Offers compatibility with a wide range of liquids

#### Welded flange on pipe vessel

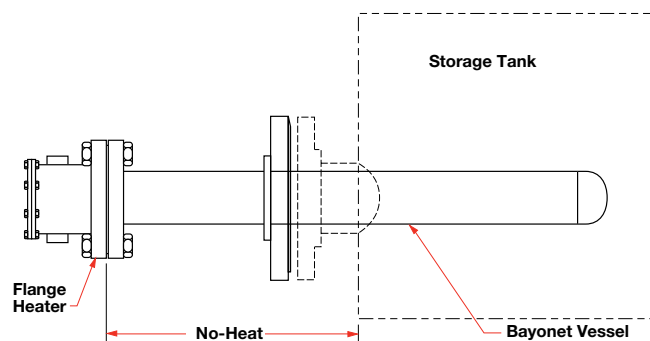
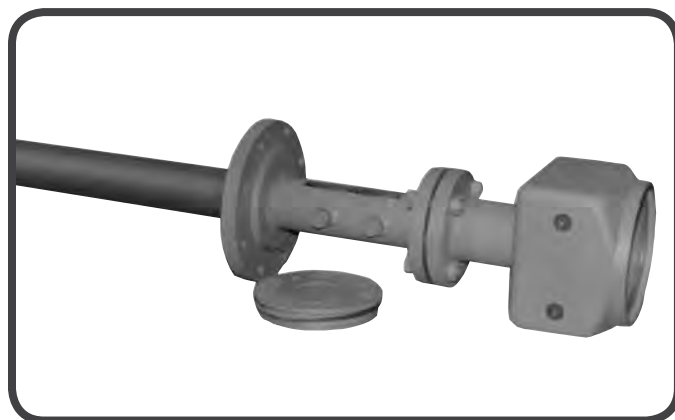
- Ensures pressure seal

#### Heating elements support(s)

- Ensures proper element spacing and maximum heater performance

### Typical Applications

- Indirect heating of viscous fluids:
  - Asphalt
  - Tar
  - Molasses
  - Syrup
  - Glue
- Corrosive liquids
- Degreasing fluids



# Immersion Heaters

**EXTENDED  
CAPABILITY**



## WATROD and FIREBAR Flange Immersion Heaters

### *Extended Capabilities for Bayonet/Pipe Insert Immersion Heaters (Continued)*

#### Options

Pipe insert heaters can be supplied with a variety of options, including:

- Appropriate gasket materials
- Passivation cleaning on pipe insert
- European screw plug to flange adapters
- CSA certified terminal enclosures
- Stand-off terminal enclosures
- Thermocouple temperature sensors
- Thermostats
- Customer specified materials, sizes and pressure class ratings

For descriptions and ordering information about these options, please refer to *Flange Immersion Heaters*, pages 220 to 281, or *Screw Plug Immersion Heaters*, pages 145 to 219.

#### Flanges

Flanges to 24 in. (610 mm) nominal pipe size are available in materials compatible with specific application needs. For information on flange materials and ratings, consult your Watlow representative.

#### Bayonet Vessels

Bayonet vessels are available up to 14 in. (356 mm) nominal pipe size and 20 feet long. Vessel size is dependent upon the kilowatt requirement and element watt density. For more information, contact your Watlow representative.

#### Application Hints

- Mount pipe insert heater horizontally
- Locate pipe insert heaters low in the tank, but above the sludge level
- Consider a low liquid level sensor to protect against low liquid level conditions
- Select a watt density that is compatible with the heat transfer media being used
- Insulate the pipe insert heater's exterior to minimize heat loss



#### **Caution:**

Do not insulate the terminal enclosure.

# Immersion Heaters



## FIREROD® Immersion Heaters

FIREROD® immersion heaters are ideal to replace large screw-plug immersion heaters. Packaging up to 300 W/in<sup>2</sup> (46.5 W/cm<sup>2</sup>) in a compact unit, these heaters are versatile when designed into a heating system.

FIREROD immersion heaters are complete with a stainless steel <sup>3</sup>/<sub>4</sub> inch National Pipe Thread Taper (NPT) double-threaded fitting, which allows conduit boxes to be added. They are also sealed at the lead end with a silicone rubber seal.

Solid copper leads with silicone rubber sleeves are provided for unrestricted wiring. These heaters are recommended for immersion in water of 90+ percent water soluble solutions.

### Performance Capabilities

- Maximum operating temperature in water up to 212°F (100°C) at atmospheric pressure
- Maximum watt density up to 300 W/in<sup>2</sup> (46.5 W/cm<sup>2</sup>)
- Maximum voltage up to 480VAC

### Features and Benefits

#### Nickel-chromium resistance wire precisely centered in the unit

- Ensures even, efficient distribution of heat to the sheath

#### Magnesium oxide (MgO) insulation compacted to the proper density

- Results in high dielectric strength and contributes to faster heat-up

#### Alloy 800 sheath

- Resists water corrosion

#### Metallurgically-bonded conductor pins

- Overlap the resistance wire inside of the core to ensure trouble-free electrical continuity

#### Lead end with silicone rubber seal

- Protects the heater against moisture contamination

#### Stainless steel fittings

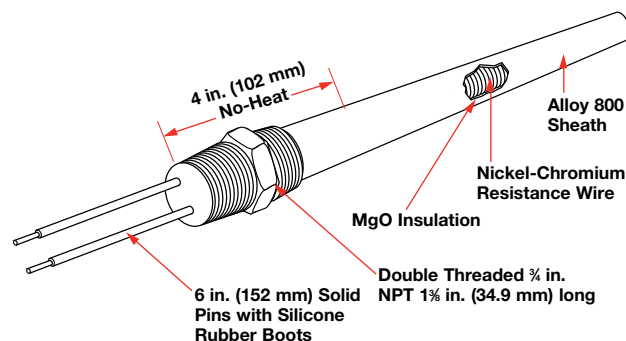
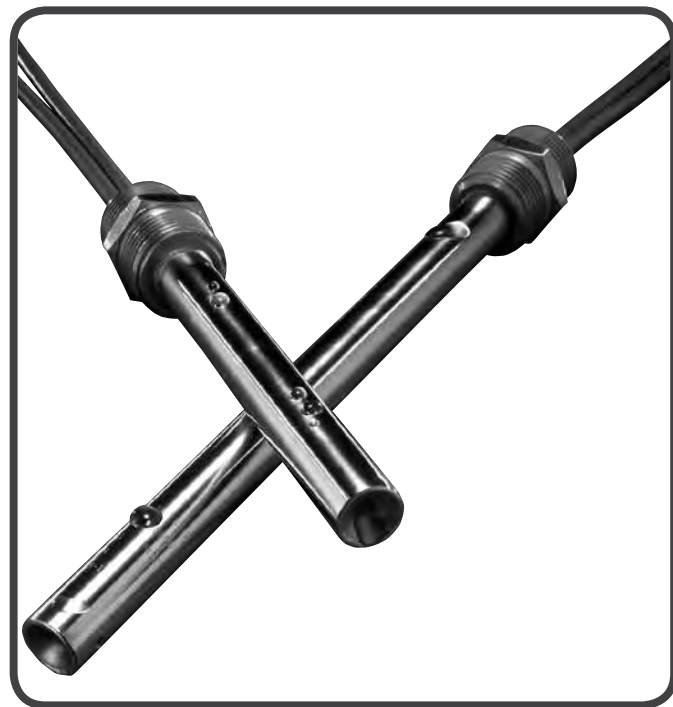
- Offer availability for use in corrosive applications

#### Horizontal through the wall tank mounting

- Provides faster set-up

#### 240 and 480VAC voltage

- Allows wiring flexibility for heater use in particular applications



### Typical Applications

- Plastic reclamation
- Food preparation
- Lab equipment

# Immersion Heaters



## FIREROD Immersion Heaters

### Applications and Technical Data

The small size and large capacity of FIREROD immersion heaters are ideal for use in cramped quarters. When heating liquids of low viscosity, FIREROD heaters have high watt density to pack more heat into tight spots. For water heating applications, a rating of 150 to 300 W/in<sup>2</sup> is recommended. Laboratory tests show that under certain conditions, ratings as high as 700 W/in<sup>2</sup> are safe. For longer life at high watt densities, the FIREROD heater:

- Should not be contained in the main body of the liquid or in a restricted space
- Should be covered with liquid at all times
- Should not be allowed to cycle on and off too frequently
- Should not form scale build up

When heating viscous liquids, such as oils, watt densities must be kept low to prevent carbonization at the heater sheath. FIREROD cartridges offer advantages for heating viscous materials where long life and high quality outweigh usual economic considerations.

As in all immersion applications, scale build-up on the sheath and sludge on the bottom of the tank must be carefully controlled to ensure long heater life.

Equipped with smaller threaded fittings than conventional immersion heaters, FIREROD heaters leave space for more units in the same location. Replacement of single FIREROD units in multi-heater assemblies is fast and easy to avoid discarding the complete assembly.

Moisture resistant seals are available for protection against damp atmospheres.

Threaded fittings are furnished in stainless steel. FIREROD heaters are designed with alloy 800 sheaths; however, other sheath materials can be provided on made-to-order FIREROD units.

Fittings and sheath material should be appropriate for the specific liquid material being heated.

### Sheath Material Compositions

| Sheath Material         | Chemical Composition |        |    |       |      |     |     |     |       |   |       |     |    |          |   |   |
|-------------------------|----------------------|--------|----|-------|------|-----|-----|-----|-------|---|-------|-----|----|----------|---|---|
|                         | Al                   | C      | Co | Cr    | Cu   | Fe  | Mn  | Mo  | Ni    | P | S     | Si  | Ta | Ti       | V | W |
| <b>Nickel Alloys</b>    |                      |        |    |       |      |     |     |     |       |   |       |     |    |          |   |   |
| Alloy 800               | 0.15-0.6             | 0.1    |    | 19-23 | 0.75 | Bal | 1.5 |     | 30-35 |   | 0.015 | 1.0 |    | 0.15-0.6 |   |   |
| <b>Stainless Steels</b> |                      |        |    |       |      |     |     |     |       |   |       |     |    |          |   |   |
| 304                     |                      | 0.08 ① |    | 18-20 |      | Bal | 2 ① |     | 8-12  |   |       | 1 ① |    |          |   |   |
| 316                     |                      | 0.08 ① |    | 16-18 |      | Bal | 2 ① | 2-3 | 10-14 |   |       | 1 ① |    |          |   |   |

① Maximum

# Immersion Heaters



## FIREROD Immersion Heaters

### Heater Part Numbers With Stainless Steel Fittings

| Diameter<br>in. | Overall Length<br>in. (mm) | Volts | Watts  | Watt Density<br>W/in <sup>2</sup> (W/cm <sup>2</sup> ) | Approx. Net Wt.<br>lbs (kg) | Part Number     |
|-----------------|----------------------------|-------|--------|--------------------------------------------------------|-----------------------------|-----------------|
| 5/8             | 6 1/4 (159)                | 120   | 500    | 127 (19.7)                                             | 0.58 (0.26)                 | <b>L6EX12B</b>  |
|                 | 6 1/4 (159)                | 240   | 500    | 127 (19.7)                                             | 0.58 (0.26)                 | <b>L6EX13B</b>  |
|                 | 6 1/4 (159)                | 120   | 750    | 191 (29.6)                                             | 0.58 (0.26)                 | <b>L6EX14B</b>  |
|                 | 6 1/4 (159)                | 240   | 750    | 191 (29.6)                                             | 0.58 (0.26)                 | <b>L6EX15B</b>  |
|                 | 6 1/4 (159)                | 120   | 1,000  | 254 (39.4)                                             | 0.58 (0.26)                 | <b>L6EX16B</b>  |
|                 | 6 1/4 (159)                | 240   | 1,000  | 254 (39.4)                                             | 0.58 (0.26)                 | <b>L6EX17B</b>  |
|                 | 6 3/4 (172)                | 240   | 1,500  | 300 (46.5)                                             | 0.60 (0.27)                 | <b>L6NX7B</b>   |
|                 | 6 3/4 (172)                | 480   | 1,500  | 300 (46.5)                                             | 0.60 (0.27)                 | <b>L6NX8B</b>   |
|                 | 7 3/4 (197)                | 240   | 2,000  | 291 (45.1)                                             | 0.66 (0.30)                 | <b>L7NX5B</b>   |
|                 | 7 3/4 (197)                | 480   | 2,000  | 291 (45.1)                                             | 0.66 (0.30)                 | <b>L7NX6B</b>   |
|                 | 8 1/2 (216)                | 240   | 2,500  | 300 (46.5)                                             | 0.68 (0.31)                 | <b>L8JX16B</b>  |
|                 | 8 1/2 (216)                | 480   | 2,500  | 300 (46.5)                                             | 0.68 (0.31)                 | <b>L8JX17B</b>  |
|                 | 9 1/4 (235)                | 240   | 3,000  | 300 (46.5)                                             | 0.72 (0.33)                 | <b>L9EX11B</b>  |
|                 | 9 1/4 (235)                | 480   | 3,000  | 300 (46.5)                                             | 0.72 (0.33)                 | <b>L9EX12B</b>  |
|                 | 11 (279)                   | 240   | 4,000  | 300 (46.5)                                             | 0.80 (0.36)                 | <b>L11AX59B</b> |
|                 | 11 (279)                   | 480   | 4,000  | 300 (46.5)                                             | 0.80 (0.36)                 | <b>L11AX60B</b> |
|                 | 12 3/4 (324)               | 240   | 5,000  | 300 (46.5)                                             | 0.89 (0.41)                 | <b>L12NX4B</b>  |
|                 | 12 3/4 (324)               | 480   | 5,000  | 300 (46.5)                                             | 0.89 (0.41)                 | <b>L12NX5B</b>  |
|                 | 14 1/2 (368)               | 240   | 6,000  | 300 (46.5)                                             | 0.95 (0.43)                 | <b>L14JX8B</b>  |
|                 | 14 1/2 (368)               | 480   | 6,000  | 300 (46.5)                                             | 0.95 (0.43)                 | <b>L14JX9B</b>  |
|                 | 18 (457)                   | 240   | 8,000  | 295 (45.7)                                             | 1.14 (0.52)                 | <b>L18AX43B</b> |
|                 | 18 (457)                   | 480   | 8,000  | 295 (45.7)                                             | 1.14 (0.52)                 | <b>L18AX44B</b> |
|                 | 21 1/4 (540)               | 240   | 10,000 | 300 (46.5)                                             | 1.30 (0.59)                 | <b>L21EX1B</b>  |
|                 | 21 1/4 (540)               | 480   | 10,000 | 300 (46.5)                                             | 1.30 (0.59)                 | <b>L21EX2B</b>  |
|                 | 24 3/4 (629)               | 480   | 12,000 | 300 (46.5)                                             | 1.50 (0.68)                 | <b>L24NX1B</b>  |
|                 | 29 3/4 (756)               | 480   | 15,000 | 300 (46.5)                                             | 1.80 (0.82)                 | <b>L29NX5B</b>  |
|                 | 35 (889)                   | 480   | 18,000 | 300 (46.5)                                             | 2.00 (0.91)                 | <b>L35AX5B</b>  |

