

# 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

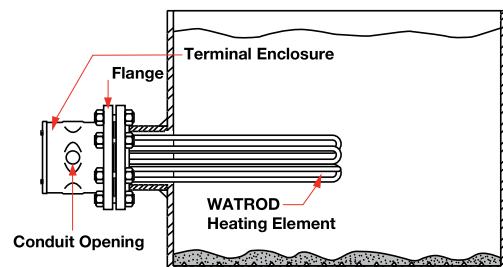
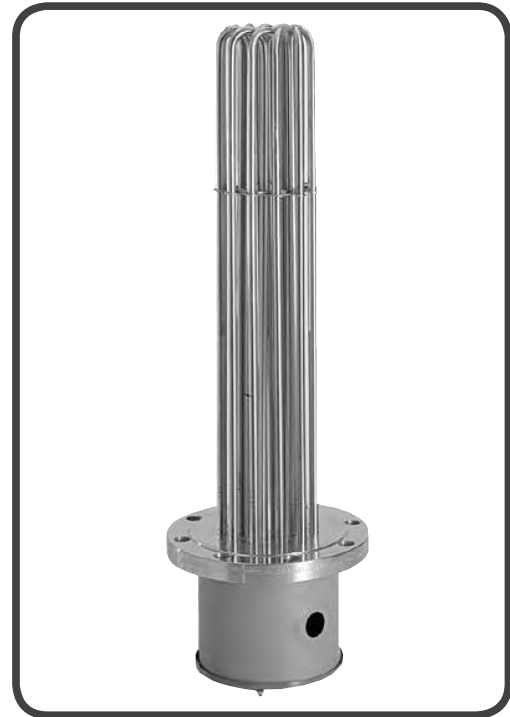
- Ensures element-to-flange pressure seals do not leak

#### 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



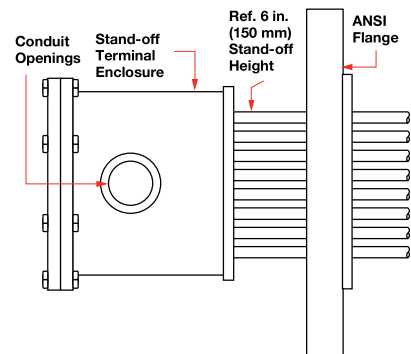
### Options (Continued)

**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**.



# Immersion Heaters

## 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		Recommended <sup>①</sup> Temperature Range °F (°C)
	Positive	Negative	
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.

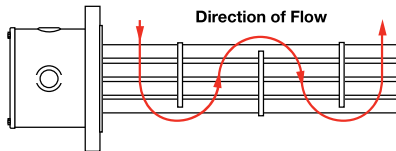


# Immersion Heaters

## 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

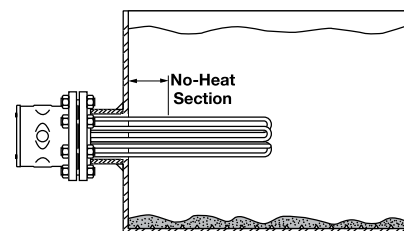
Bright annealing available to meet cosmetic demands.

### 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 304 and 321 SS Hastelloy C276 Alloy 600 Inconel®/Steel Monel®
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#### Flanges

##### Flange Materials

<b>Extended</b>	Exotic materials to meet specific application needs ①
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##### Pressure Classes

<b>Extended</b>	Over 300 lb ①
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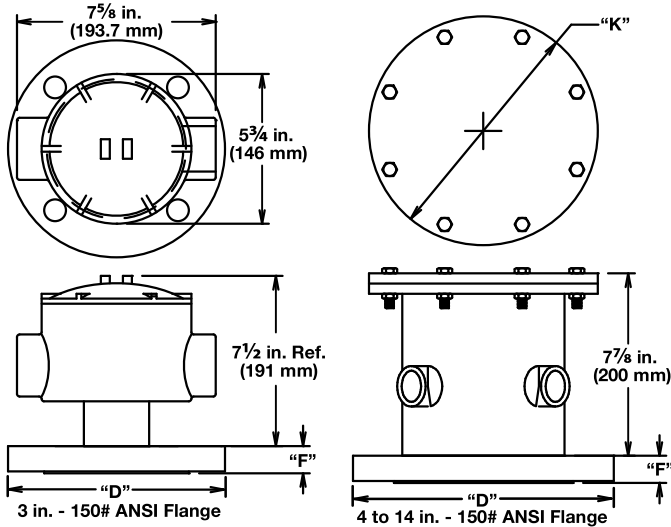
① Contact your Watlow representative



# 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

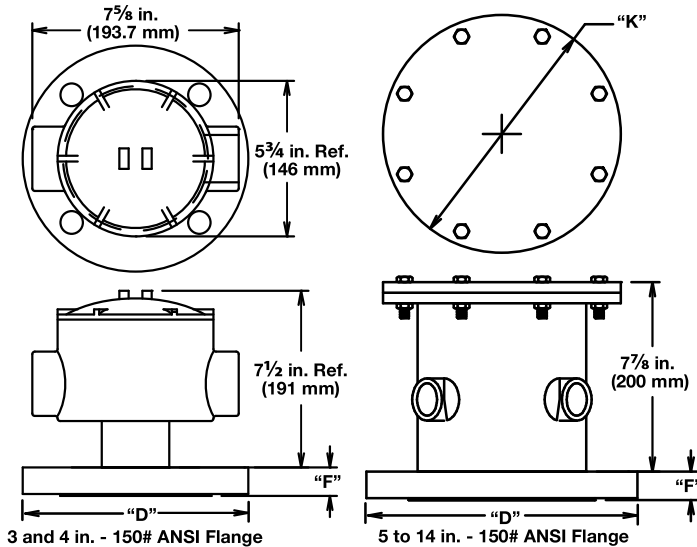
ANSI Flange Size in.	"F" Thickness in. (mm)	"K" With Thermostat	"K" Without Thermostat	"D" in. (mm)
3	15/16 (23.8)	5 3/4 (146)	See heater dwg.	7 1/2 (191)
4	15/16 (23.8)	5 3/4 (146)	See heater dwg.	9 (229)

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

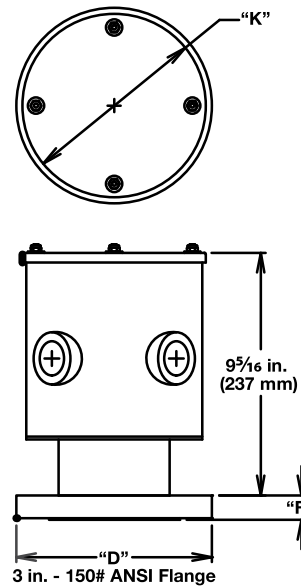
CSA Type 4/Explosion Proof Enclosures

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)

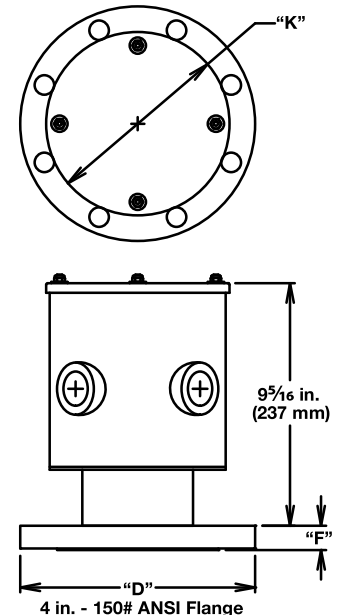
### Optional CSA Type 4/Explosion Proof Enclosure With Thermostat



### 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.



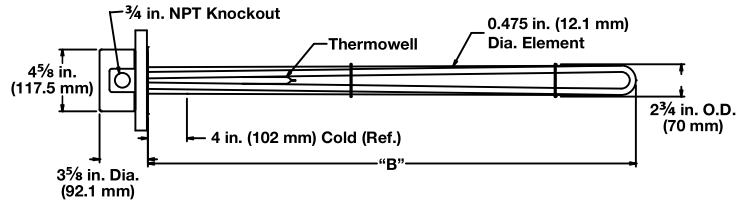
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

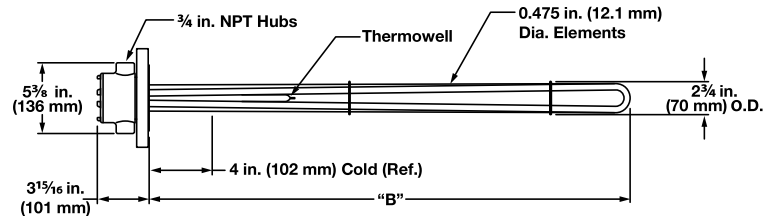
### Application: Clean Water

- 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. in. (mm)	Ship Wt. lbs (kg)	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> Steel Flange 3-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	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

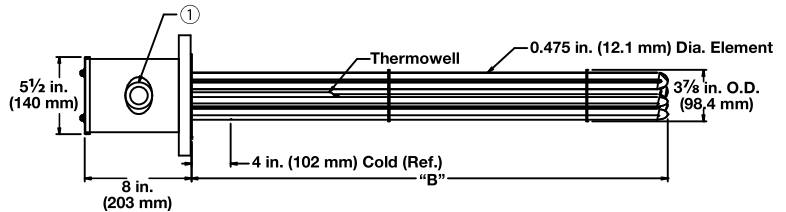
## WATROD ANSI Flange Immersion Heaters



### 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
60 W/in <sup>2</sup> Steel Flange 6-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	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

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



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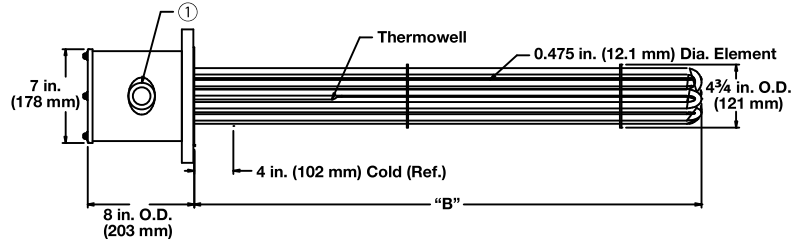
## WATROD ANSI Flange Immersion Heaters



### 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
60 W/in <sup>2</sup> Steel Flange 6-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	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

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



# Immersion Heaters

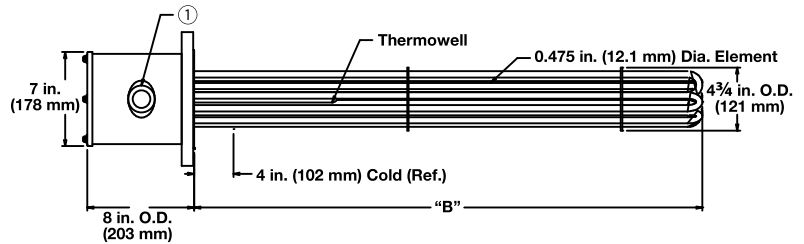
## WATROD ANSI Flange Immersion Heaters



### Application: Clean Water

- 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
60 W/in <sup>2</sup> Steel Flange 9-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	240	18.0	1	3	15 <sup>1</sup> / <sub>2</sub> (394)	38 (18)	FNN715J10XS	FNN715J10XW	C/F	C/F
	240	18.0	3	1	15 <sup>1</sup> / <sub>2</sub> (394)	38 (18)	FNN715J3XS	FNN715J3XW	C2-236	C2-214
	480	18.0	1	1	15 <sup>1</sup> / <sub>2</sub> (394)	38 (18)	FNN715J11XS	FNN715J11XW	C/F	C/F
	480	18.0	3	1	15 <sup>1</sup> / <sub>2</sub> (394)	38 (18)	FNN715J5XS	FNN715J5XW	C2-43	C2-35
	240	27.0	1	3	21 <sup>1</sup> / <sub>2</sub> (546)	42 (19)	FNN721J10XS	FNN721J10XW	C/F	C/F
	240	27.0	3	3	21 <sup>1</sup> / <sub>2</sub> (546)	42 (19)	FNN721J3XS	FNN721J3XW	C4-143	C4-142
	480	27.0	1	3	21 <sup>1</sup> / <sub>2</sub> (546)	42 (19)	FNN721J11XS	FNN721J11XW	C/F	C/F
	480	27.0	3	1	21 <sup>1</sup> / <sub>2</sub> (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 <sup>1</sup> / <sub>2</sub> (826)	48 (22)	FNN732J3XS	FNN732J3XW	C4-144	C4-145
	480	45.0	1	3	32 <sup>1</sup> / <sub>2</sub> (826)	48 (22)	FNN732J11XS	FNN732J11XW	C/F	C/F
	480	45.0	3	3	32 <sup>1</sup> / <sub>2</sub> (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 <sup>1</sup> / <sub>2</sub> (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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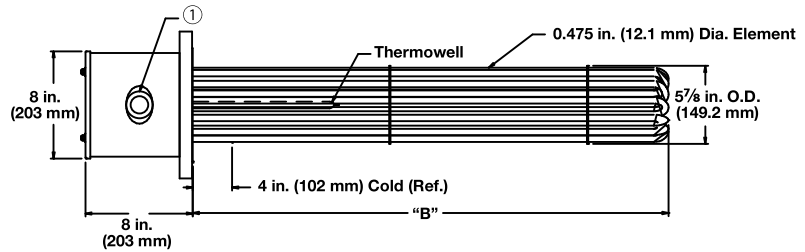
# Immersion Heaters

## 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
60 W/in <sup>2</sup> Steel Flange 12-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	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



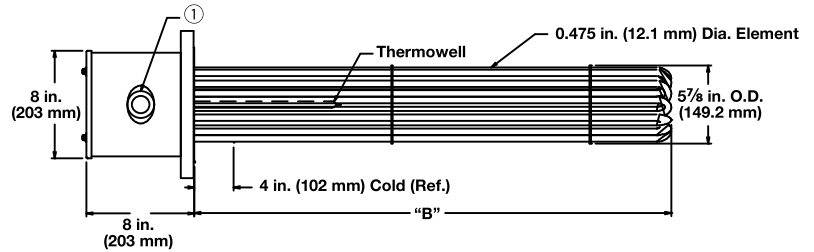
## WATROD ANSI Flange Immersion Heaters



### 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
60 W/in <sup>2</sup> Steel Flange 15-Alloy 800 Elements (9.3 W/cm <sup>2</sup> )	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

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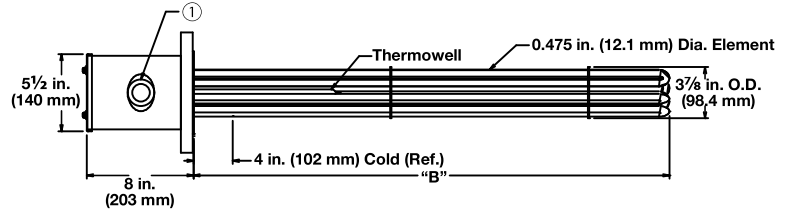
# Immersion Heaters

## 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
60 W/in <sup>2</sup> 316 SS Flange 6-316 SS Elements (9.3 W/cm <sup>2</sup> ) 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

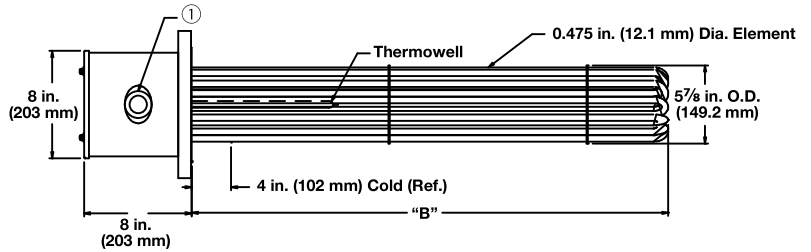
## WATROD ANSI Flange Immersion Heaters



### 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. 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> 316 SS Flange 12-316 SS Elements (9.3 W/cm <sup>2</sup> ) (Passivated)	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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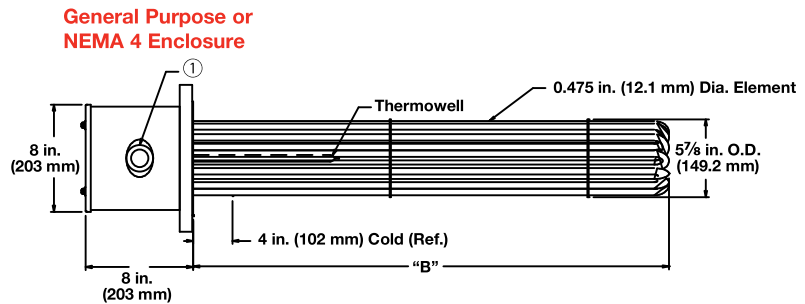


# Immersion Heaters

## 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
60 W/in <sup>2</sup> 316 SS Flange 15-316 SS Elements (9.3 W/cm <sup>2</sup> ) (Passivated)	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

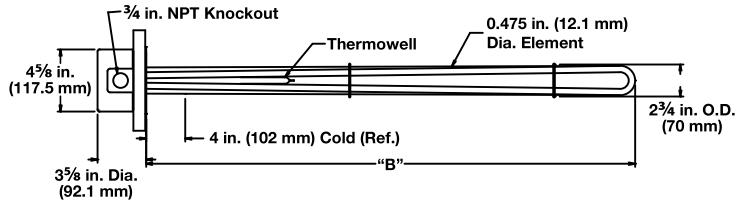
## WATROD ANSI Flange Immersion Heaters



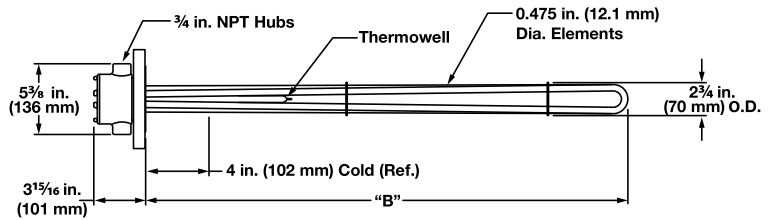
### Application: Process Water

- 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. in. (mm)	Ship Wt. lbs (kg)	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 3-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	240	4.5	1	13 <sup>1</sup> / <sub>2</sub> (343)	22 (10)	FMN713J10S	FMN713J10W	C/F	C/F
	240	4.5	3	13 <sup>1</sup> / <sub>2</sub> (343)	22 (10)	FMN713J3S	FMN713J3W	C2-50	C2-92
	480	4.5	1	13 <sup>1</sup> / <sub>2</sub> (343)	22 (10)	FMN713J11S	FMN713J11W	C/F	C/F
	480	4.5	3	13 <sup>1</sup> / <sub>2</sub> (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 <sup>1</sup> / <sub>2</sub> (521)	25 (12)	FMN720J10S	FMN720J10W	C/F	C/F
	240	7.5	3	20 <sup>1</sup> / <sub>2</sub> (521)	25 (12)	FMN720J3S	FMN720J3W	C2-50	C2-92
	480	7.5	1	20 <sup>1</sup> / <sub>2</sub> (521)	25 (12)	FMN720J11S	FMN720J11W	C/F	C/F
	480	7.5	3	20 <sup>1</sup> / <sub>2</sub> (521)	25 (12)	FMN720J5S	FMN720J5W	C2-43	C2-35
	240	9.0	1	25 <sup>1</sup> / <sub>2</sub> (648)	27 (13)	FMN725J10S	FMN725J10W	C/F	C/F
	240	9.0	3	25 <sup>1</sup> / <sub>2</sub> (648)	27 (13)	FMN725J3S	FMN725J3W	C2-50	C2-92
	480	9.0	1	25 <sup>1</sup> / <sub>2</sub> (648)	27 (13)	FMN725J11S	FMN725J11W	C/F	C/F
	480	9.0	3	25 <sup>1</sup> / <sub>2</sub> (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 <sup>1</sup> / <sub>2</sub> (1029)	30 (14)	FMN740J3S	FMN740J3W	C2-236	C2-214
480	15.0	1	40 <sup>1</sup> / <sub>2</sub> (1029)	30 (14)	FMN740J11S	FMN740J11W	C/F	C/F	
480	15.0	3	40 <sup>1</sup> / <sub>2</sub> (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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Ⓢ Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)



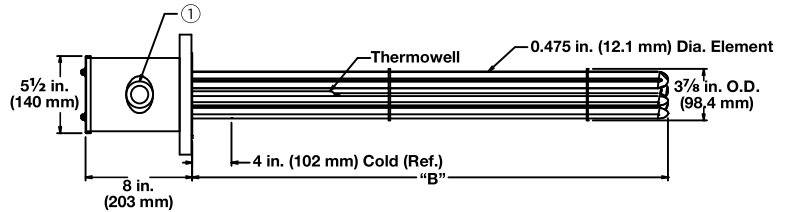
# Immersion Heaters

## 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		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 6-Alloy 800 Elements (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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® Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)

# Immersion Heaters



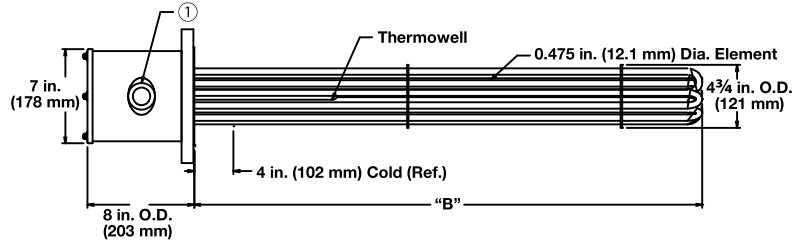
## WATROD ANSI Flange Immersion Heaters



### 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
48 W/in <sup>2</sup> Steel Flange 6-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	240	9.0	1	1	13 1/2 (343)	33 (15)	FNN713J10S	FNN713J10W	C/F	C/F
	240	9.0	3	1	13 1/2 (343)	33 (15)	FNN713J3S	FNN713J3W	C2-50	C2-92
	480	9.0	1	1	13 1/2 (343)	33 (15)	FNN713J11S	FNN713J11W	C/F	C/F
	480	9.0	3	1	13 1/2 (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 1/2 (521)	38 (18)	FNN720J10S	FNN720J10W	C/F	C/F
	240	15.0	3	1	20 1/2 (521)	38 (18)	FNN720J3S	FNN720J3W	C2-236	C2-214
	480	15.0	1	1	20 1/2 (521)	38 (18)	FNN720J11S	FNN720J11W	C/F	C/F
	480	15.0	3	1	20 1/2 (521)	38 (18)	FNN720J5S	FNN720J5W	C2-43	C2-35
	240	18.0	1	2	25 1/2 (648)	40 (19)	FNN725J10S	FNN725J10W	C/F	C/F
	240	18.0	3	1	25 1/2 (648)	40 (19)	FNN725J3S	FNN725J3W	C2-236	C2-214
	480	18.0	1	1	25 1/2 (648)	40 (19)	FNN725J11S	FNN725J11W	C/F	C/F
	480	18.0	3	1	25 1/2 (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 1/2 (1029)	47 (22)	FNN740J3S	FNN740J3W	C2-218	C2-224
	480	30.0	1	2	40 1/2 (1029)	47 (22)	FNN740J11S	FNN740J11W	C/F	C/F
	480	30.0	3	1	40 1/2 (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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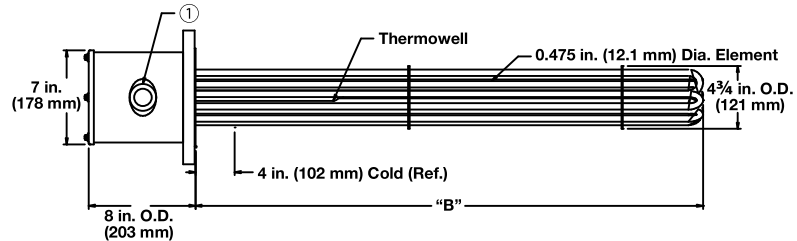
# Immersion Heaters

## 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		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

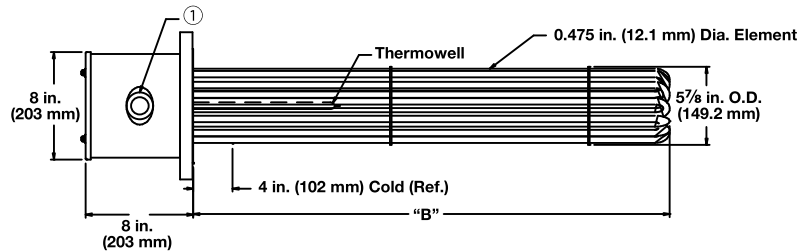
## WATROD ANSI Flange Immersion Heaters



### 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
48 W/in <sup>2</sup> Steel Flange 12-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	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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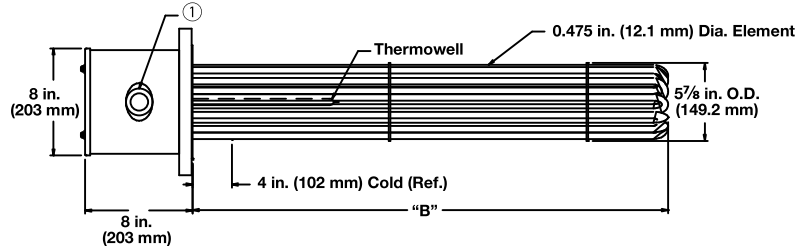
# Immersion Heaters

## 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		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 15-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	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

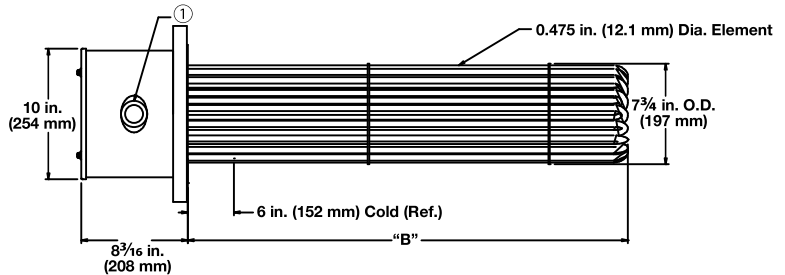
## WATROD ANSI Flange Immersion Heaters



### 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
48 W/in <sup>2</sup> Steel Flange 18-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	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
48 W/in <sup>2</sup> Steel Flange 24-Alloy 800 Elements (7.5 W/cm <sup>2</sup> )	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

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# Immersion Heaters

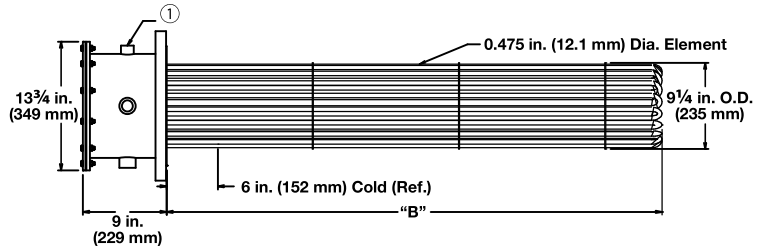


## WATROD ANSI Flange Immersion Heaters

### 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



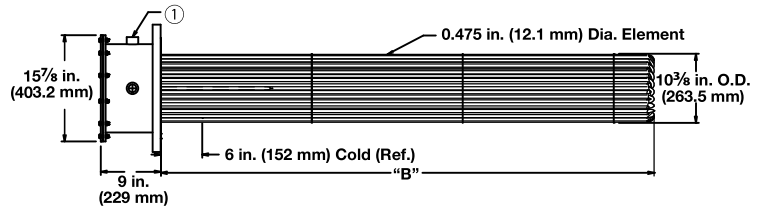
① The number and size of the conduit opening will comply with the National Electrical Code® standards.

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)	F5N754N5S	F5N754N5W	C/F	C/F
	480	262.0	3	9	73 <sup>1</sup> / <sub>4</sub> (1861)	260 (118)	F5N773E5S	F5N773E5W	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

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# Immersion Heaters

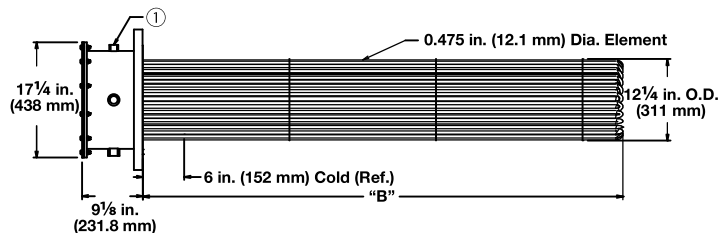
## WATROD ANSI Flange Immersion Heaters



### 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)



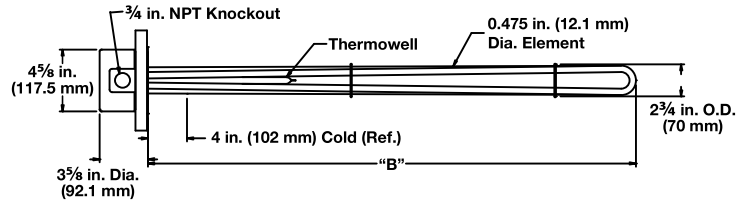
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

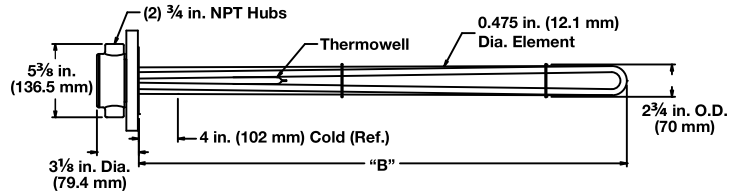
### Application: Forced Air and Caustic Solutions

- 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. in. (mm)	Ship Wt. lbs (kg)	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 3-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	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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© Can be rewired wye to produce 1/3 of the original kW and watt density (3-phase only)





# Immersion Heaters

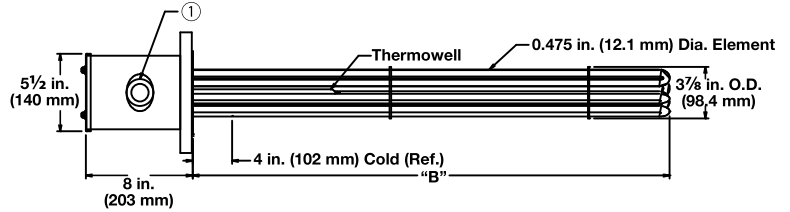
## WATROD ANSI Flange Immersion Heaters



### 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		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-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

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



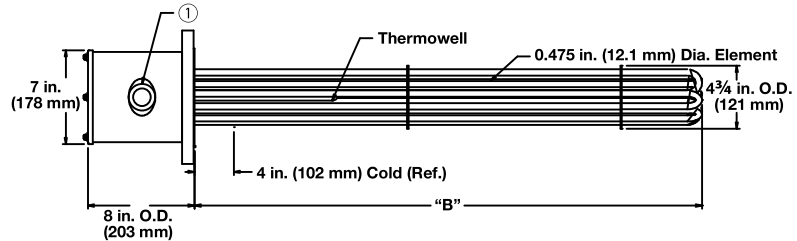
# Immersion Heaters

## 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		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 6-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	240	6.0	1	1	18 (457)	36 (17)	FNNA18A10S	FNNA18A10W	C/F	C/F
	240	6.0	3	1	18 (457)	36 (17)	FNNA18A3S	FNNA18A3W	C2-50	C2-92
	480	6.0	1	1	18 (457)	36 (17)	FNNA18A11S	FNNA18A11W	C/F	C/F
	480	6.0	3	1	18 (457)	36 (17)	FNNA18A5S	FNNA18A5W	C2-43	C2-35
	240	9.0	1	1	25 1/2 (648)	40 (19)	FNNA25J10S	FNNA25J10W	C/F	C/F
	240	9.0	3	1	25 1/2 (648)	40 (19)	FNNA25J3S	FNNA25J3W	C2-50	C2-92
	480	9.0	1	1	25 1/2 (648)	40 (19)	FNNA25J11S	FNNA25J11W	C/F	C/F
	480	9.0	3	1	25 1/2 (648)	40 (19)	FNNA25J5S	FNNA25J5W	C2-43	C2-35
	240	12.0	1	2	33 (838)	43 (20)	FNNA33A10S	FNNA33A10W	C/F	C/F
	240	12.0	3	1	33 (838)	43 (20)	FNNA33A3S	FNNA33A3W	C2-236	C2-214
	480	12.0	1	1	33 (838)	43 (20)	FNNA33A11S	FNNA33A11W	C/F	C/F
	480	12.0	3	1	33 (838)	43 (20)	FNNA33A5S	FNNA33A5W	C2-43	C2-35
	240	15.0	1	2	40 1/2 (1029)	47 (22)	FNNA40J10S	FNNA40J10W	C/F	C/F
	240	15.0	3	1	40 1/2 (1029)	47 (22)	FNNA40J3S	FNNA40J3W	C2-236	C2-214
	480	15.0	1	1	40 1/2 (1029)	47 (22)	FNNA40J11S	FNNA40J11W	C/F	C/F
	480	15.0	3	1	40 1/2 (1029)	47 (22)	FNNA40J5S	FNNA40J5W	C2-43	C2-35
	240	18.0	1	2	48 (1219)	52 (24)	FNNA48A10S	FNNA48A10W	C/F	C/F
	240	18.0	3	1	48 (1219)	52 (24)	FNNA48A3S	FNNA48A3W	C2-236	C2-214
	480	18.0	1	1	48 (1219)	52 (24)	FNNA48A11S	FNNA48A11W	C/F	C/F
	480	18.0	3	1	48 (1219)	52 (24)	FNNA48A5S	FNNA48A5W	C2-43	C2-35
240	25.0	3	2	64 1/2 (1638)	57 (26)	FNNA64J3S	FNNA64J3W	C2-218	C2-224	
480	25.0	1	2	64 1/2 (1638)	57 (26)	FNNA64J11S	FNNA64J11W	C/F	C/F	
480	25.0	3	1	64 1/2 (1638)	57 (26)	FNNA64J5S	FNNA64J5W	C2-225	C2-226	
240	30.0	3	2	77 (1956)	65 (30)	FNNA77A3S	FNNA77A3W	C2-218	C2-224	
480	30.0	1	2	77 (1956)	65 (30)	FNNA77A11S	FNNA77A11W	C/F	C/F	
480	30.0	3	1	77 (1956)	65 (30)	FNNA77A5S	FNNA77A5W	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)

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



# Immersion Heaters

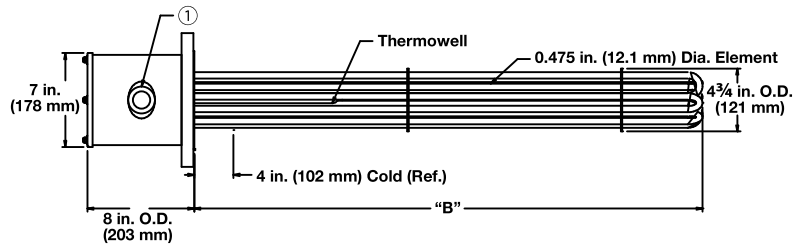
## WATROD ANSI Flange Immersion Heaters



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

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)



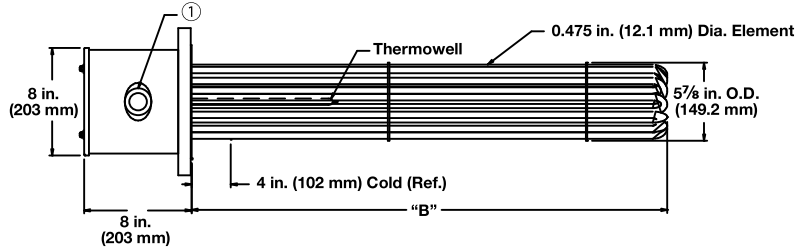
# Immersion Heaters

## 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		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 12-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	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)

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



# Immersion Heaters

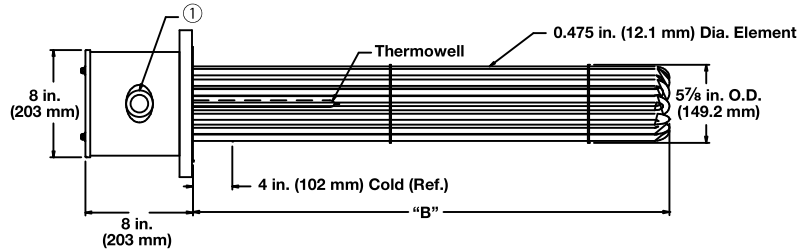
## WATROD ANSI Flange Immersion Heaters



### 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		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 1/3 of the original kW and watt density (3-phase only)

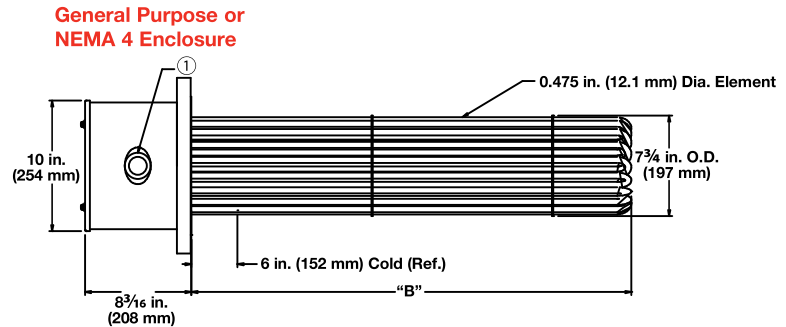


# Immersion Heaters

## 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
23 W/in <sup>2</sup> ⑥ Steel Flange 18-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	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
23 W/in <sup>2</sup> ⑥ Steel Flange 24-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	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

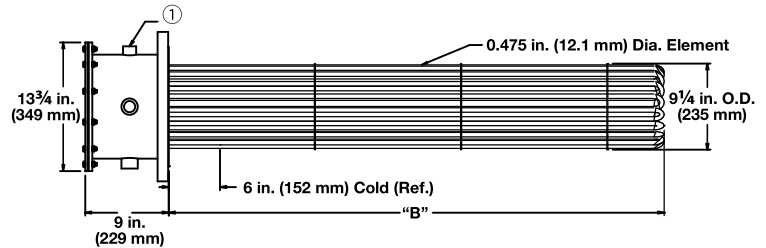
## WATROD ANSI Flange Immersion Heaters



### 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. in. (mm)	Ship Wt. lbs (kg)	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-Alloy 800 Elements (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



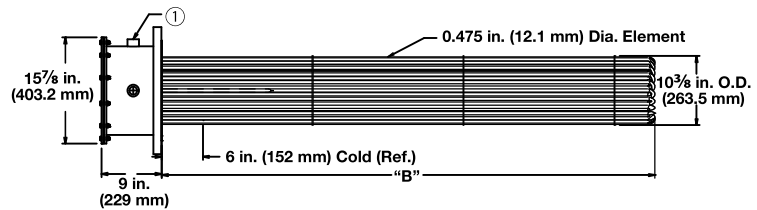
## WATROD ANSI Flange Immersion Heaters



### 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)	WATCONNECT			
							Part Number	Part Number	Part Number	Part Number
23 W/in <sup>2</sup> Steel Flange 36-Alloy 800 Elements (3.6 W/cm <sup>2</sup> )	480	60.0	3	3	33 <sup>1</sup> / <sub>8</sub> (841.4)	205 (93)	General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
	480	80.0	3	3	43 <sup>5</sup> / <sub>8</sub> (1108.1)	240 (109)	FTNA33C5S	FTNA33C5W	C4-150	C4-151
	480	100.0	3	3	51 <sup>5</sup> / <sub>8</sub> (1311.3)	280 (127)	FTNA43L5S	FTNA43L5W	C4-152	C4-153
							FTNA51L5S	FTNA51L5W	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)



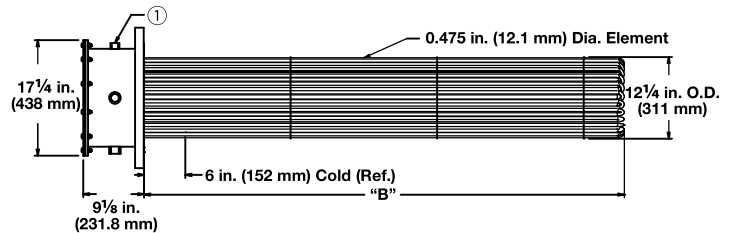
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

### Application: Forced Air and Caustic Solutions

- 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

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



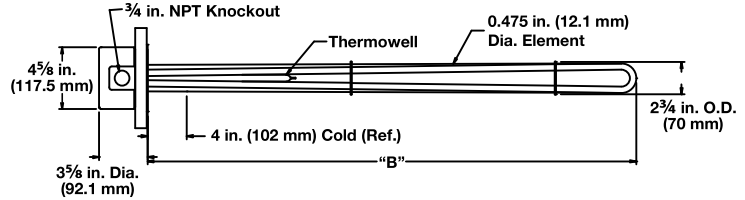
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

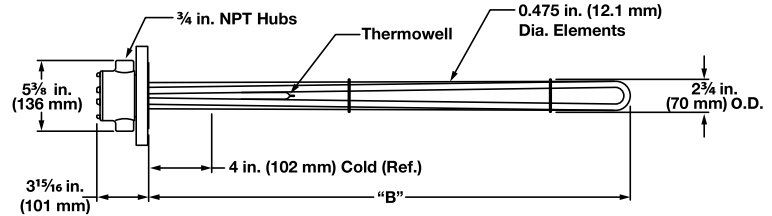
### Application: Lightweight Oils and Heat Transfer Oils

- 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. in. (mm)	Ship Wt. lbs (kg)	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 3-Steel Elements (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

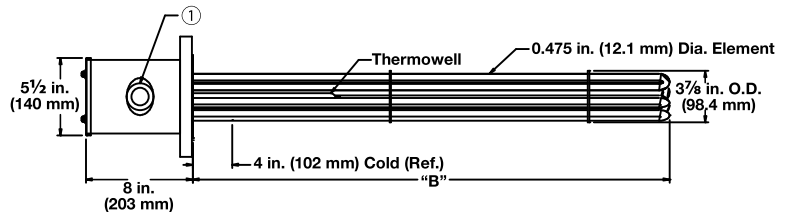
## WATROD ANSI Flange Immersion Heaters



### 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		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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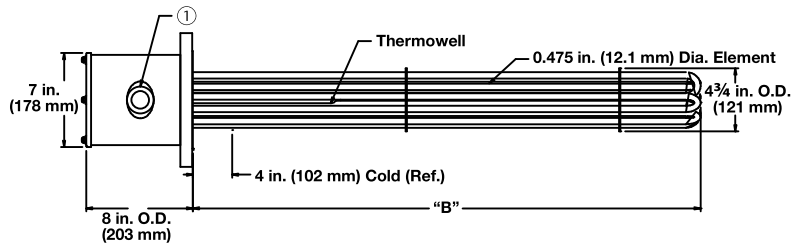
# Immersion Heaters

## 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
23 W/in <sup>2</sup> Steel Flange 6-Steel Elements (3.6 W/cm <sup>2</sup> )	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

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# Immersion Heaters

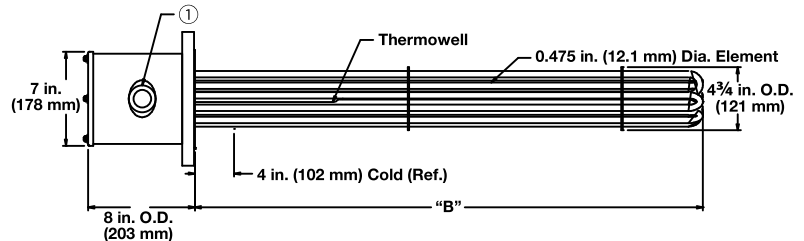
## WATROD ANSI Flange Immersion Heaters



### 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. lb (kg)	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 9-Steel Elements (3.6 W/cm <sup>2</sup> )	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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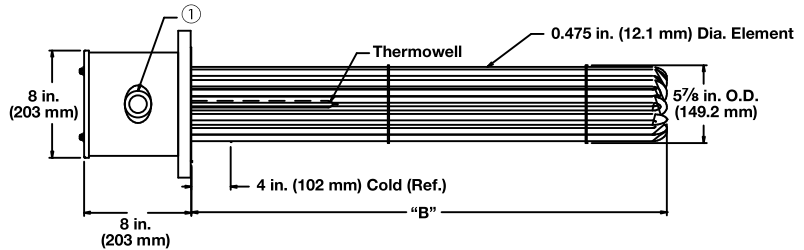
# Immersion Heaters

## 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		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 12-Steel Elements (3.6 W/cm <sup>2</sup> )	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



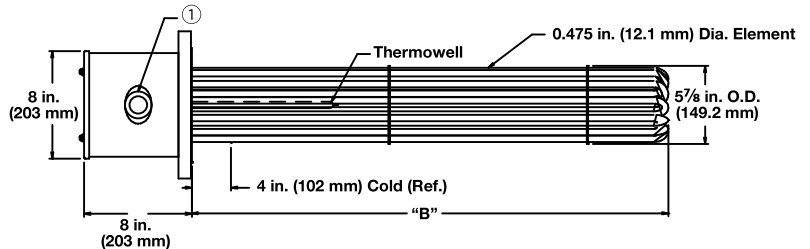
## WATROD ANSI Flange Immersion Heaters



### 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		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 15-Steel Elements (3.6 W/cm <sup>2</sup> )	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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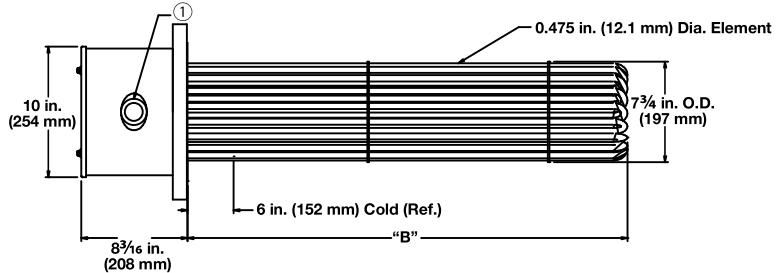
# Immersion Heaters

## 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

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		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

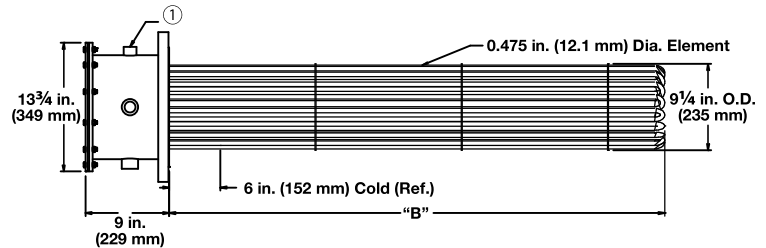
## WATROD ANSI Flange Immersion Heaters



### 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	240	45.0	3	3	33 <sup>1</sup> / <sub>4</sub> (845)	165 (75)	FSS733E3S	FSS733E3W	C4-144	C4-145
	480	45.0	3	3	33 <sup>1</sup> / <sub>4</sub> (845)	165 (75)	FSS733E5S	FSS733E5W	C4-150	C4-151
27-Steel Elements (3.6 W/cm <sup>2</sup> )	240	60.0	3	3	43 <sup>3</sup> / <sub>4</sub> (1111)	195 (89)	FSS743N3S	FSS743N3W	C4-144	C4-145
	480	60.0	3	3	43 <sup>3</sup> / <sub>4</sub> (1111)	195 (89)	FSS743N5S	FSS743N5W	C4-150	C4-151
	240	75.0	3	9	51 <sup>3</sup> / <sub>4</sub> (1314)	230 (105)	FSS751N3S	FSS751N3W	C/F	C/F
	480	75.0	3	3	51 <sup>3</sup> / <sub>4</sub> (1314)	230 (105)	FSS751N5S	FSS751N5W	C4-152	C4-153
	480	90.0	3	3	62 <sup>1</sup> / <sub>4</sub> (1581)	250 (114)	FSS762E5S	FSS762E5W	C4-152	C4-153
	480	105.0	3	3	70 <sup>3</sup> / <sub>4</sub> (1797)	258 (117)	FSS770N5S	FSS770N5W	C4-152	C4-153
	480	120.0	3	3	78 <sup>3</sup> / <sub>4</sub> (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



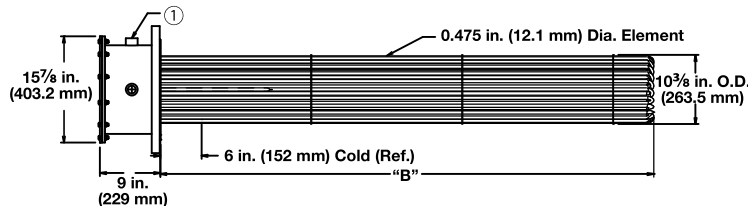
## WATROD ANSI Flange Immersion Heaters



### 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 <sup>1</sup> / <sub>8</sub> (841.4)	205 (93)	FTS733C5S	FTS733C5W	C4-150	C4-151
	480	80.0	3	3	43 <sup>5</sup> / <sub>8</sub> (1108.1)	240 (109)	FTS743L5S	FTS743L5W	C4-152	C4-153
	480	100.0	3	3	51 <sup>5</sup> / <sub>8</sub> (1311.3)	280 (127)	FTS751L5S	FTS751L5W	C4-152	C4-153
	480	120.0	3	3	62 <sup>1</sup> / <sub>8</sub> (1578.0)	285 (130)	FTS762C5S	FTS762C5W	C4-152	C4-153
	480	140.0	3	4	70 <sup>5</sup> / <sub>8</sub> (1793.9)	290 (132)	FTS770L5S	FTS770L5W	C4-156	C4-157
	480	160.0	3	4	78 <sup>5</sup> / <sub>8</sub> (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



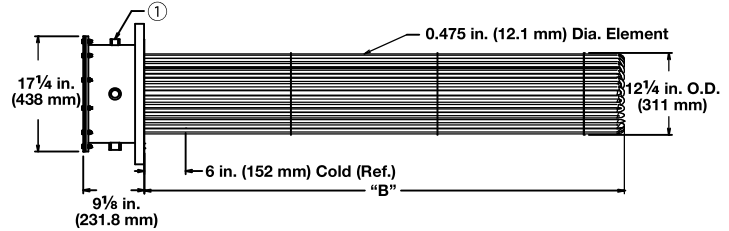
# Immersion Heaters

## 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		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

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



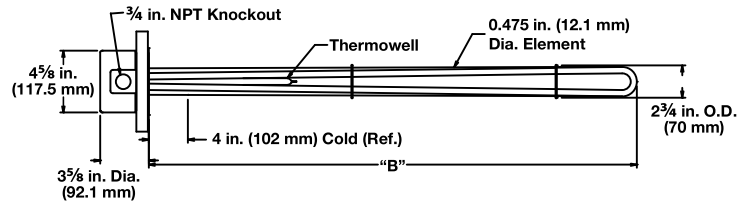
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

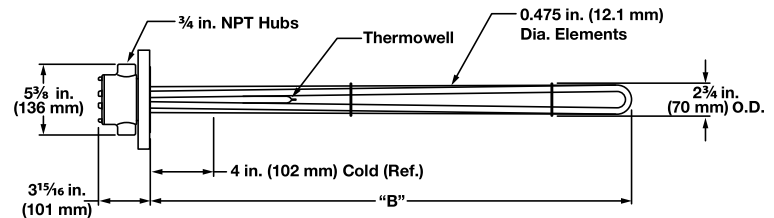
### Application: Medium Weight Oils and Heat Transfer Oils

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

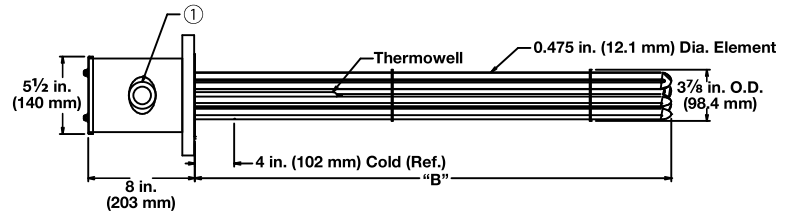
## WATROD ANSI Flange Immersion Heaters



### Application: 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. 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
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)	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



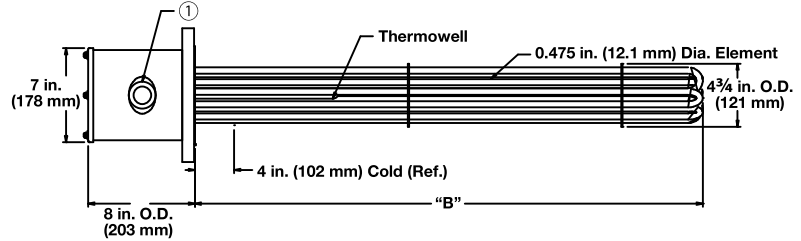
# Immersion Heaters

## 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		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

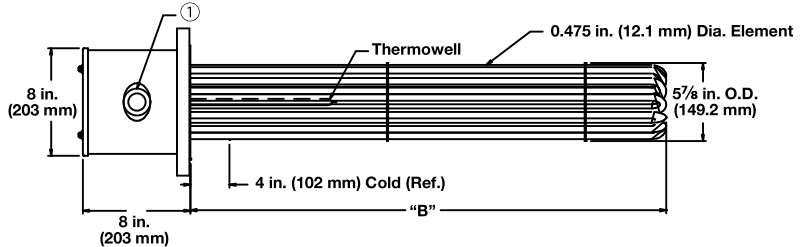
## WATROD ANSI Flange Immersion Heaters



### 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		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 12-Alloy 800 Elements (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 Steel Flange 15-Alloy 800 Elements (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



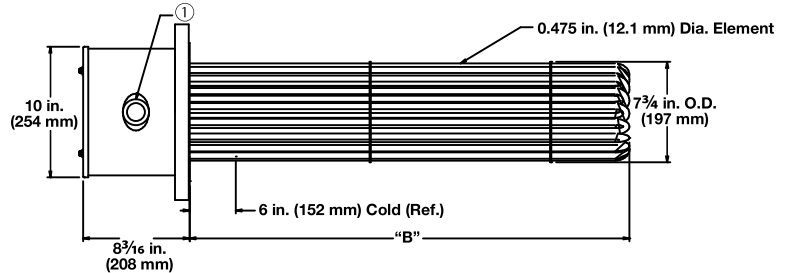
# Immersion Heaters

## 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. 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 18-Alloy 800 Elements (2.5 W/cm <sup>2</sup> )	240	17.0	3	1	25% (654.0)	121 (55)	FRN725N12S	FRN725N12W	C2-236	C2-214
	480	17.0	3	1	25% (654.0)	121 (55)	FRN725N13S	FRN725N13W	C2-43	C2-35
	240	25.0	3	2	35% (908.0)	130 (59)	FRN735N12S	FRN735N12W	C2-219	C2-220
	480	25.0	3	1	35% (908.0)	130 (59)	FRN735N13S	FRN735N13W	C2-225	C2-226
	240	33.0	3	2	44% (1124.0)	132 (60)	FRN744E12S	FRN744E12W	C2-218	C2-224
	480	33.0	3	1	44% (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 1/16 (1859.0)	151 (69)	FRN773D13S	FRN773D13W	C2-229	C2-230
16 W/in <sup>2</sup> ③ Steel Flange 24-Alloy 800 Elements (2.5 W/cm <sup>2</sup> )	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 1/16 (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



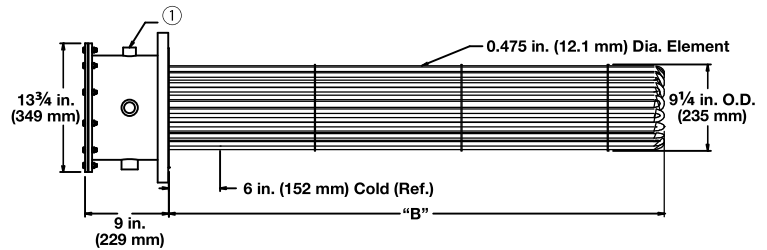
## WATROD ANSI Flange Immersion Heaters



### 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		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 27-Alloy 800 Elements (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



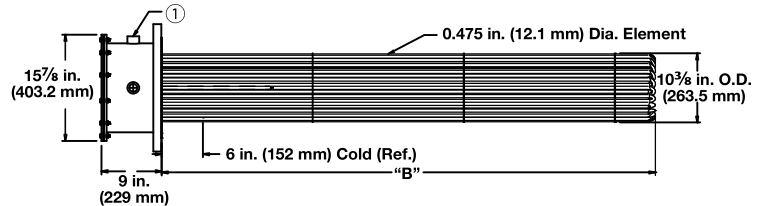
## WATROD ANSI Flange Immersion Heaters



### 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		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 36-Alloy 800 Elements (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

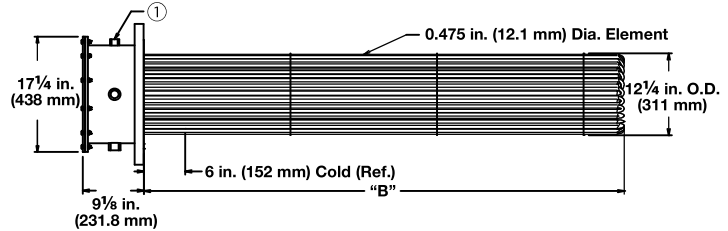
## WATROD ANSI Flange Immersion Heaters



### 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		WATCONNECT Part Number	
							General Purpose Enclosure	NEMA 4 Enclosure	Type J T/C	Type K T/C
16 Win <sup>2</sup> ③ Steel Flange 45-Alloy 800 Elements (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



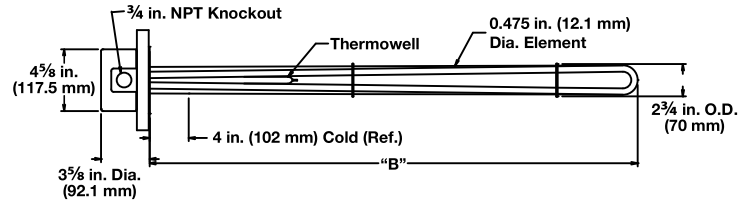
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

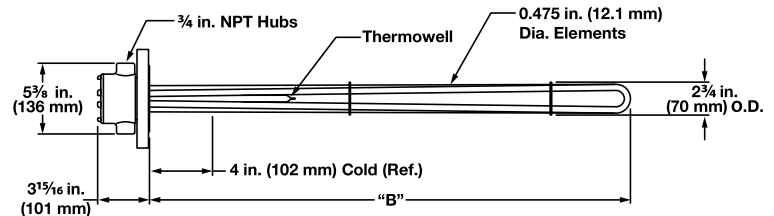
### Application: Bunker C, Asphalt and #6 Fuel Oil

- 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. in. (mm)	Ship Wt. lbs (kg)	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 3-Steel Elements (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 <sup>1/2</sup> (1638)	37 (17)	FMS764J12S	FMS764J12W	C2-50	C2-92
	480	4.0	3	64 <sup>1/2</sup> (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



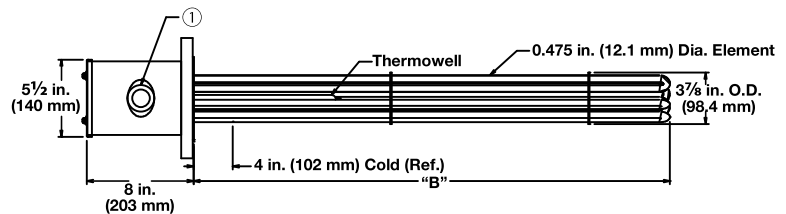
## WATROD ANSI Flange Immersion Heaters



### 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
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 1/2 (1029)	43 (20)	FOS740J12S	FOS740J12W	C2-50	C2-92
	480	5.0	3	1	40 1/2 (1029)	43 (20)	FOS740J13S	FOS740J13W	C2-43	C2-35
	240	6.0	3	1	48 (1219)	48 (22)	FOS748A12S	FOS748A12W	C2-50	C2-92
	480	6.0	3	1	48 (1219)	48 (22)	FOS748A13S	FOS748A13W	C2-43	C2-35
	240	8.0	3	1	64 1/2 (1638)	53 (24)	FOS764J12S	FOS764J12W	C2-50	C2-92
	480	8.0	3	1	64 1/2 (1638)	53 (24)	FOS764J13S	FOS764J13W	C2-43	C2-35
	240	10.0	3	1	77 (1956)	61 (28)	FOS777A12S	FOS777A12W	C2-50	C2-92
	480	10.0	3	1	77 (1956)	61 (28)	FOS777A13S	FOS777A13W	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



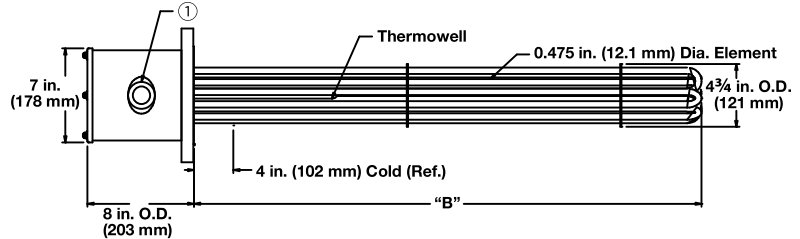
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

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

- 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		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



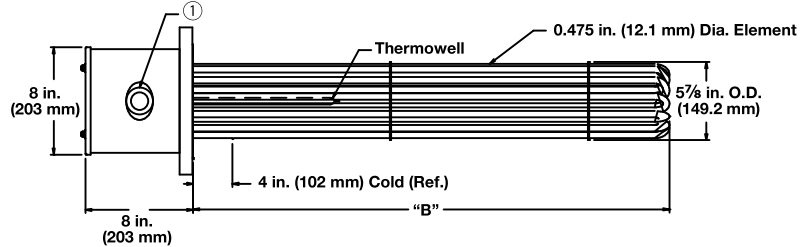
## WATROD ANSI Flange Immersion Heaters



### 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
8 W/in <sup>2</sup> ③ Steel Flange 12-Steel Elements (1.3 W/cm <sup>2</sup> )	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	
8 W/in <sup>2</sup> ③ Steel Flange 15-Steel Elements (1.3 W/cm <sup>2</sup> )	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



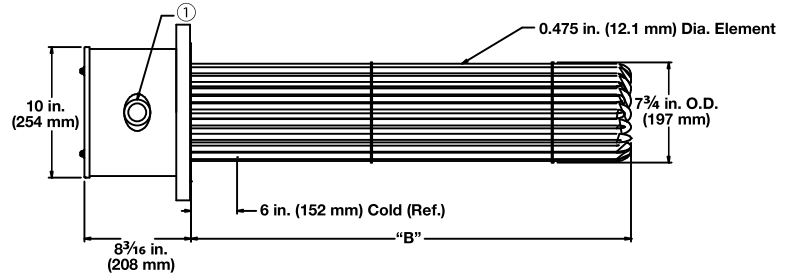
# Immersion Heaters

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

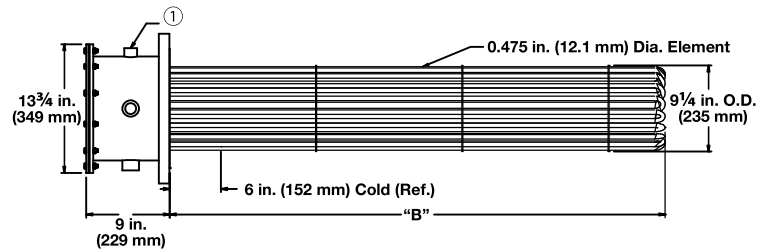
## WATROD ANSI Flange Immersion Heaters



### 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
8 W/in <sup>2</sup> ③ Steel Flange 27-Steel Elements (1.3 W/cm <sup>2</sup> )	240	25.0	3	3	51 <sup>3</sup> / <sub>4</sub> (1314)	230 (105)	FSS751N12S	FSS751N12W	C4-143	C4-142
	480	25.0	3	1	51 <sup>3</sup> / <sub>4</sub> (1314)	230 (105)	FSS751N13S	FSS751N13W	C2-225	C2-226
	240	30.0	3	3	62 <sup>1</sup> / <sub>4</sub> (1581)	250 (114)	FSS762E12S	FSS762E12W	C4-143	C4-142
	480	30.0	3	1	62 <sup>1</sup> / <sub>4</sub> (1581)	250 (114)	FSS762E13S	FSS762E13W	C2-225	C2-226
	240	35.0	3	3	70 <sup>3</sup> / <sub>4</sub> (1797)	258 (117)	FSS770N12S	FSS770N12W	C4-144	C4-145
	480	35.0	3	1	70 <sup>3</sup> / <sub>4</sub> (1797)	258 (117)	FSS770N13S	FSS770N13W	C2-225	C2-226
	240	40.0	3	3	78 <sup>3</sup> / <sub>4</sub> (2000)	265 (121)	FSS778N12S	FSS778N12W	C4-144	C4-145
	480	40.0	3	1	78 <sup>3</sup> / <sub>4</sub> (2000)	265 (121)	FSS778N13S	FSS778N13W	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



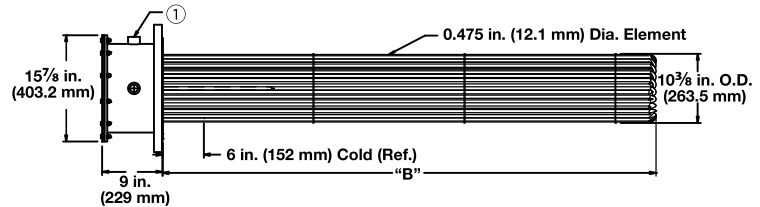
# Immersion Heaters

## WATROD ANSI Flange Immersion Heaters

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

- 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		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 27-Steel Elements (1.3 W/cm <sup>2</sup> )	240	34.0	3	2	51 <sup>5</sup> / <sub>8</sub> (1311.3)	280 (127)	FTS751L12S	FTS751L12W	C2-218	C2-224
	480	34.0	3	1	51 <sup>5</sup> / <sub>8</sub> (1311.3)	280 (127)	FTS751L13S	FTS751L13W	C2-225	C2-226
	240	40.0	3	2	62 <sup>1</sup> / <sub>8</sub> (1578.0)	285 (130)	FTS762C12S	FTS762C12W	C2-218	C2-224
	480	40.0	3	1	62 <sup>1</sup> / <sub>8</sub> (1578.0)	285 (130)	FTS762C13S	FTS762C13W	C2-225	C2-226
	240	47.0	3	3	70 <sup>5</sup> / <sub>8</sub> (1793.9)	290 (132)	FTS770L12S	FTS770L12W	C4-144	C4-145
	480	47.0	3	2	70 <sup>5</sup> / <sub>8</sub> (1793.9)	290 (132)	FTS770L13S	FTS770L13W	C2-229	C2-230
	240	54.0	3	3	78 <sup>5</sup> / <sub>8</sub> (1997.1)	300 (136)	FTS778L12S	FTS778L12W	C4-144	C4-145
	480	54.0	3	2	78 <sup>5</sup> / <sub>8</sub> (1997.1)	300 (136)	FTS778L13S	FTS778L13W	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

③ Wired for 3-phase operation only



# Immersion Heaters

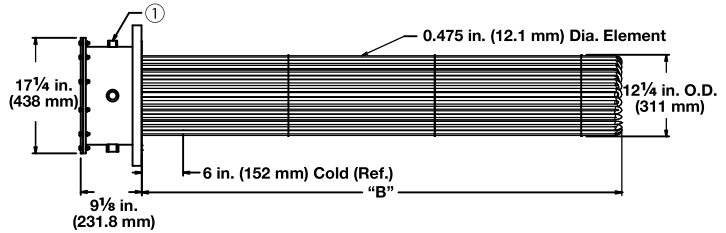
## WATROD ANSI Flange Immersion Heaters



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

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
<p><b>Note:</b> Catalog part numbers include optional enclosures and process sensors. To order optional enclosures or sensors, substitute the appropriate suffix.</p>

Optional Terminal Enclosures
S = General purpose enclosure
W = NEMA 4 enclosure
C = CSA Type 4/explosion proof enclosure
<p><b>Note:</b> Catalog listings include either a general purpose enclosure or NEMA 4 enclosure. Substitute enclosure options are noted.</p>

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
<p><b>Note:</b> Thermostat part numbers are shown in the <i>Thermostat Chart</i> on page 517.</p>

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
<p><b>Note:</b> Heater orientation is critical to accurate sensing of limit conditions. Use the appropriate code to indicate heater mounting orientation.</p>

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