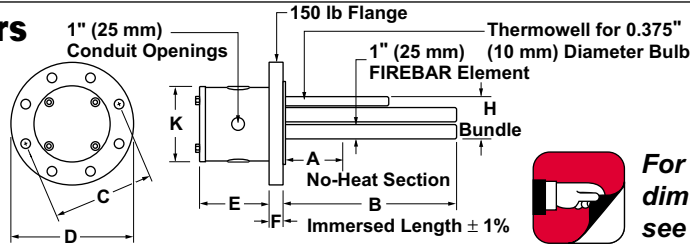


Tubular and Process Assemblies

Flange Immersion Heaters



For terminal enclosure dimensions (K and E) see page 341.

Flange Immersion Heater Dimensions

Element Type	Flange Size in	Flange Mounting Hole		Thermowell Length in (mm)	A Dimension in (mm)	C Dimension in (mm)	D Dimension in (mm)	F Dimension in (mm)	H Dimension in (mm)	Elements Standard
		Size in (mm)	Number							
FIREBAR	4	3/4 (19)	8	12 (305)	4 (102)	7 1/2 (191)	9 (229)	1 1/16 (24)	3 1/8 (98)	6
FIREBAR	6	7/8 (22)	8	12 (305)	4 (102)	9 1/2 (241)	11 (279)	1 (25)	6 (152)	15

6" O.D. Plate Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship. Weight lbs (kg)
			240V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 1-Phase	480V~(ac) 3-Phase	

Applications: Process Water, Ethylene Glycol (50%)

45 W/in ² Steel Flange 3-Copper (7 W/cm ²)	4.5	16 (406)	FKC16A10②	FKC16A3②	FKC16A11②	FKC16A5	22 (10)
	9	29 (737)	FKC29A10②	FKC29A3	FKC29A11②	FKC29A5	27 (13)

Application: Process Water

45 W/in ² Steel Flange 3-Incoloy® (7 W/cm ²)	9	28 (711)	FKN28A10②	FKN28A3②	FKN28A11②	FKN28A5	27 (13)
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Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² Steel Flange 3-Steel (4.7 W/cm ²)	6	29 (737)	FKS29A10②	FKS29A3②	FKS29A11②	FKS29A5	27 (13)
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Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

15 W/in ² ③ Steel Flange 3-Incoloy® (2.3 W/cm ²)	3	28 (711)		FKN28A12②		FKN28A13②	27 (13)
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Applications: Medium Weight Oils, Heat Transfer Oils, Lube Oils, Liquid Paraffin

10 W/in ² ③ Steel Flange 3-Steel (1.6 W/cm ²)	2	29 (737)		FKS29A12②		FKS29A13②	27 (13)
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All flange immersion heaters are Assembly Stock unless otherwise noted.

- ② Standard
- ③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters

7" O.D. Plate Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Applications: Clean and Potable Water

100 W/in ² Steel Flange 3-304 SS (15.5 W/cm ²)	12	18 (457)	FLN18A10②	2	FLN18A3②	1	FLN18A11②	1	FLN18A5	1	22 (10)

Applications: Clean and Potable Water

80 W/in ² Steel Flange 3-304 SS (12.4 W/cm ²)	9	17½ (451)	FLN17N10②	1	FLN17N3	1	FLN17N11②	1	FLN17N5②	1	22 (10)
	18	30 (762)	FLN30A10②	2	FLN30A3	1	FLN30A11②	1	FLN30A5②	1	27 (13)

Application: Process Water

60 W/in ² Steel Flange 3-Incoloy® (9.3 W/cm ²)	4.5	12½ (318)	FLN12J10②	1	FLN12J3	1	FLN12J11②	1	FLN12J5②	1	21 (10)
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Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² ③ Steel Flange 3-Incoloy® (4.7 W/cm ²)	3	17½ (451)			FLN17N12②	1			FLN17N13②	1	22 (10)
	4	18 (457)			FLN18A12②	1			FLN18A13	1	22 (10)
	6	30 (762)			FLN30A12	1			FLN30A13	1	27 (13)

All flange immersion heaters are Assembly Stock unless otherwise noted.

② Standard

③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters 3" 150 lb ANSI Flange—WATROD Element

Flange Heaters

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Application: Clean Water

60 W/in² Steel Flange 3-Copper (9.3 W/cm ²)	6	15½ (394)	FMC715J10	1	FMC715J3	1	FMC715J11	1	FMC715J5	1	22 (10)
	9	21½ (546)	FMC721J10	1	FMC721J3	1	FMC721J11	1	FMC721J5	1	25 (12)
	12	27 (686)			FMC727A3	1	FMC727A11	1	FMC727A5	1	27 (13)
	15	32½ (826)			FMC732J3	1	FMC732J11	1	FMC732J5	1	28 (13)
	18	38 (965)			FMC738A3	1	FMC738A11	1	FMC738A5	1	30 (14)
	25	51 (1295)					FMC751A11	1	FMC751A5	1	34 (16)
30	60½ (1537)					FMC760J11 ②	1	FMC760J5 ②	1	36 (17)	

Application: Process Water

48 W/in² ⑤⑥ Steel Flange 3-Incoloy® (7.5 W/cm ²)	4.5	13½ (343)	FMN713J10	1	FMN713J3	1	FMN713J11	1	FMN713J5	1	22 (10)
	6	18 (457)	FMN718A10	1	FMN718A3	1	FMN718A11	1	FMN718A5	1	23 (11)
	7.5	20½ (521)	FMN720J10	1	FMN720J3	1	FMN720J11	1	FMN720J5	1	25 (12)
	9	25½ (648)	FMN725J10	1	FMN725J3	1	FMN725J11	1	FMN725J5	1	27 (13)
	12	33 (838)			FMN733A3	1	FMN733A11	1	FMN733A5	1	28 (13)
	15	40½ (1029)			FMN740J3	1	FMN740J11	1	FMN740J5	1	30 (14)
	18	48 (1219)			FMN748A3	1	FMN748A11	1	FMN748A5	1	32 (15)

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

23 W/in² ⑤⑥ Steel Flange 3-Incoloy® (3.6 W/cm ²)	3	18 (457)	FMNA18A10	1	FMNA18A3	1	FMNA18A11	1	FMNA18A5	1	23 (11)
	4.5	25½ (648)	FMNA25J10	1	FMNA25J3	1	FMNA25J11	1	FMNA25J5	1	27 (13)
	6	33 (838)	FMNA33A10	1	FMNA33A3	1	FMNA33A11	1	FMNA33A5	1	28 (13)
	7.5	40½ (1029)	FMNA40J10	1	FMNA40J3	1	FMNA40J11	1	FMNA40J5	1	30 (14)
	9	48 (1219)	FMNA48A10	1	FMNA48A3	1	FMNA48A11	1	FMNA48A5	1	32 (15)
	12.5	64½ (1638)			FMNA64J3	1	FMNA64J11	1	FMNA64J5	1	37 (17)
	15	77 (1956)			FMNA77A3	1	FMNA77A11	1	FMNA77A5	1	42 (19)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in² Steel Flange 3-Steel (3.6 W/cm ²)	3	18 (457)	FMS718A10	1	FMS718A3	1	FMS718A11	1	FMS718A5	1	23 (11)
	4.5	25½ (648)	FMS725J10	1	FMS725J3	1	FMS725J11	1	FMS725J5	1	27 (13)
	6	33 (838)	FMS733A10	1	FMS733A3	1	FMS733A11	1	FMS733A5	1	28 (13)
	7.5	40½ (1029)	FMS740J10	1	FMS740J3	1	FMS740J11	1	FMS740J5	1	30 (14)
	9	48 (1219)	FMS748A10	1	FMS748A3	1	FMS748A11	1	FMS748A5	1	32 (15)
	12.5	64½ (1638)			FMS764J3	1	FMS764J11	1	FMS764J5	1	37 (17)
	15	77 (1956)			FMS777A3	1	FMS777A11	1	FMS777A5	1	42 (19)

CONTINUED

All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

② Standard

⑤ 240V~(ac) 3-phase can be rewired wye to produce ½ more kW and watt density when operated at 480V~(ac) 3-phase.

⑥ Can be rewired wye to produce ½ of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters

3" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ^③	1.5	13½ (343)			FMN713J12	1				FMN713J13	1	22 (10)
Steel Flange	2	18 (457)			FMN718A12	1				FMN718A13	1	23 (11)
3-Incoloy®	2.5	20½ (521)			FMN720J12	1				FMN720J13	1	25 (12)
(2.5 W/cm ²)	3	25½ (648)			FMN725J12	1				FMN725J13	1	27 (13)
	4	33 (838)			FMN733A12	1				FMN733A13	1	30 (14)
	5	40½ (1029)			FMN740J12	1				FMN740J13	1	30 (14)
	6	48 (1219)			FMN748A12	1				FMN748A13	1	33 (15)

Applications: Bunker C and #6 Fuel Oils

8 W/in ² ^③	2	33 (838)			FMS733A12	1				FMS733A13	1	28 (13)
Steel Flange	3	48 (1219)			FMS748A12	1				FMS748A13	1	32 (15)
3-Steel	4	64½ (1638)			FMS764J12	1				FMS764J13	1	37 (17)
(1.3 W/cm ²)	5	77 (1956)			FMS777A12	1				FMS777A13	1	42 (19)

4" 150 Lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Application: Clean Water

60 W/in ²	12	15½ (394)	FOC715J10	2	FOC715J3	1	FOC715J11	1	FOC715J5	1	31 (14)
Steel Flange	18	21½ (546)	FOC721J10	2	FOC721J3	1	FOC721J11	1	FOC721J5	1	34 (16)
6-Copper	24	27 (686)	FOC727A10	2	FOC727A3	2	FOC727A11	1	FOC727A5	1	36 (17)
(9.3 W/cm ²)	30	32½ (826)			FOC732J3	2	FOC732J11	2	FOC732J5	1	39 (18)
	36	38 (965)			FOC738A3	2	FOC738A11	2	FOC738A5	1	43 (20)
	50	51 (1295)							FOC751A5	2	48 (22)
	60	60½ (1537)							FOC760J5 ^②	2	52 (24)

Application: Deionized Water, Demineralized Water

60 W/in ²	12	16 (406)	FOR716A10	1	FOR716A3	1	FOR716A11	1	FOR716A5	1	31 (14)
316 SS Flange	18	22 (559)	FOR722A10	2	FOR722A3	1	FOR722A11	1	FOR722A5	1	34 (16)
6-316 SS	24	27½ (699)	FOR727J10	2	FOR727J3	2	FOR727J11	1	FOR727J5	1	36 (17)
(9.3 W/cm ²)	30	33 (838)			FOR733A3	2	FOR733A11	2	FOR733A5	1	39 (18)
Passivated	36	38½ (978)			FOR738J3	2	FOR738J11	2	FOR738J5	1	43 (20)
	50	51½ (1308)							FOR751J5	2	53 (25)
	60	61 (1549)							FOR761A5	2	56 (26)

CONTINUED 

All flange immersion heaters are Assembly Stock unless otherwise noted.

② Standard

③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters 4" 150 lb ANSI Flange—WATROD Element

Flange Heaters

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship. Weight lbs (kg)	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits		

Application: Process Water

48 W/in² ^⑤	9	13½ (343)	FON713J10	1	FON713J3	1	FON713J11	1	FON713J5	1	29 (14)
Steel Flange	12	18 (457)	FON718A10	2	FON718A3	1	FON718A11	1	FON718A5	1	32 (15)
6-Incoloy®	15	20½ (521)	FON720J10	2	FON720J3	1	FON720J11	1	FON720J5	1	34 (16)
(7.5 W/cm ²)	18	25½ (648)	FON725J10	2	FON725J3	1	FON725J11	1	FON725J5	1	36 (17)
	24	33 (838)	FON733A10	2	FON733A3	2	FON733A11	1	FON733A5	1	39 (18)
	30	40½ (1029)			FON740J3	2	FON740J11	2	FON740J5	1	43 (20)
	36	48 (1219)			FON748A3	2	FON748A11	2	FON748A5	1	48 (22)

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

23 W/in² ^{⑤⑥}	6	18 (457)	FONA18A10	1	FONA18A3	1	FONA18A11	1	FONA18A5	1	32 (15)
Steel Flange	9	25½ (648)	FONA25J10	1	FONA25J3	1	FONA25J11	1	FONA25J5	1	36 (17)
6-Incoloy®	12	33 (838)	FONA33A10	2	FONA33A3	1	FONA33A11	1	FONA33A5	1	39 (18)
(3.6 W/cm ²)	15	40½ (1029)	FONA40J10	2	FONA40J3	1	FONA40J11	1	FONA40J5	1	43 (20)
	18	48 (1219)	FONA48A10	2	FONA48A3	1	FONA48A11	1	FONA48A5	1	48 (22)
	25	64½ (1638)			FONA64J3	2	FONA64J11	2	FONA64J5	1	53 (24)
	30	77 (1956)			FONA77A3	2	FONA77A11	2	FONA77A5	1	61 (28)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in²	6	18 (457)	FOS718A10	1	FOS718A3	1	FOS718A11	1	FOS718A5	1	32 (15)
Steel Flange	9	25½ (648)	FOS725J10	1	FOS725J3	1	FOS725J11	1	FOS725J5	1	36 (17)
6-Steel	12	33 (838)	FOS733A10	2	FOS733A3	1	FOS733A11	1	FOS733A5	1	39 (18)
(3.6 W/cm ²)	15	40½ (1029)	FOS740J10	2	FOS740J3	1	FOS740J11	1	FOS740J5	1	43 (20)
	18	48 (1219)	FOS748A10	2	FOS748A3	1	FOS748A11	1	FOS748A5	1	48 (22)
	25	64½ (1638)			FOS764J3	2	FOS764J11	2	FOS764J5	1	53 (24)
	30	77 (1956)			FOS777A3	2	FOS777A11	2	FOS777A5	1	61 (28)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in² ^③	3	13½ (343)			FON713J12	1			FON713J13	1	29 (14)
Steel Flange	4	18 (457)			FON718A12	1			FON718A13	1	32 (15)
6-Incoloy®	5	20½ (521)			FON720J12	1			FON720J13	1	34 (16)
(2.5 W/cm ²)	6	25½ (648)			FON725J12	1			FON725J13	1	36 (17)
	8	33 (838)			FON733A12	1			FON733A13	1	39 (18)
	10	40½ (1029)			FON740J12	1			FON740J13	1	43 (20)
	12	48 (1219)			FON748A12	1			FON748A13	1	48 (22)

Applications: Bunker C and #6 Fuel Oils

8 W/in² ^③	5	40½ (1029)			FOS740J12	1			FOS740J13	1	43 (20)
Steel Flange	6	48 (1219)			FOS748A12	1			FOS748A13	1	48 (22)
6-Steel	8	64½ (1638)			FOS764J12	1			FOS764J13	1	53 (24)
(1.3 W/cm ²)	10	77 (1956)			FOS777A12	1			FOS777A13	1	61 (28)

All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

③ Must be operated 3-phase wye

④ 240V~(ac) 3-phase can be rewired wye to produce ½ more kW and watt density when operated at 480V~(ac) 3-phase.

⑥ Can be rewired wye to produce ½ of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters

4" 150 lb ANSI Flange—FIREBAR Element

FIREBAR Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship.	
			240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs	(kg)

Applications: Process Water, Ethylene Glycol (50%)

45 W/in ² 304 SS Flange 6-Incoloy® (7 W/cm ²)	12	13½ (340)	FONF13G27	1			32 (20)
	15	16 (406)	FONF16A27	1			35 (20)
	18	18¾ (467)	FONF18G27	1			38 (21)
	24	22¾ (581)	FONF22R27	2	FONF22R28	1	41 (21)
	30	27¾ (708)	FONF27R27	2	FONF27R28	1	44 (20)
	36	32¾ (835)	FONF32R27	2	FONF32R28	1	46 (21)
	48	42¾ (1076)			FONF42G28	2	50 (23)
	60	51¾ (1318)			FONF51R28	2	54 (25)

Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² ⓐ 304 SS Flange 6-Incoloy® (4.7 W/cm ²)	10	16½ (420)	FONF16J12	1	FONF16J13	1	35 (16)
	13	19½ (495)	FONF19J12	1	FONF19J13	1	38 (17)
	17	24½ (622)	FONF24J12	1	FONF24J13	1	41 (19)
	21	30 (762)	FONF30A12	2	FONF30A13	1	44 (20)
	25.5	35 (889)	FONF35A12	2	FONF35A13	1	46 (21)
	34	45½ (1156)	FONF45J12	2	FONF45J13	1	50 (23)
	43	56 (1422)			FONF56A13	2	54 (25)

Applications: Heat Transfer Oils, Mineral Oils, Degreasing Solutions

23 W/in ² ⓐ 304 SS Flange 6-Incoloy® (3.6 W/cm ²)	7.5	16½ (419)	FONF16J20	1			35 (16)
	10	19½ (495)	FONF19J20	1			38 (18)
	12.8	24½ (622)	FONF24J20	1	FONF24J19	1	41 (19)
	15.8	30 (762)	FONF30A20	1	FONF30A19	1	44 (20)
	19	35 (889)	FONF35A20	1	FONF35A19	1	46 (21)
	25	45½ (1156)	FONF45J20	2	FONF45J19	1	50 (23)
	32.3	56 (1422)	FONF56A20	2	FONF56A19	1	54 (25)

Applications: Medium Weight Oils, Heat Transfer Oils, Lube Oils, Liquid Paraffin

15 W/in ² ⓐ 304 SS Flange 6-Incoloy® (2.3 W/cm ²)	4	13¾ (340)	FONF13G29	1			32 (15)
	5	16 (406)	FONF16A29	1			35 (16)
	6	18¾ (467)	FONF18G29	1			38 (18)
	8	22¾ (581)	FONF22R29	1	FONF22R30	1	41 (19)
	10	27¾ (708)	FONF27R29	1	FONF27R30	1	44 (20)
	12	32¾ (835)	FONF32R29	1	FONF32R30	1	46 (21)
	16	42¾ (1076)	FONF42G29	1	FONF42G30	1	50 (23)
	20	51¾ (1318)	FONF51R29	1	FONF51R30	1	54 (25)

Applications: Bunker C and #6 Fuel Oils, Asphalt

8 W/in ² ⓐ 304 SS Flange 6-Incoloy® (1.3 W/cm ²)	2.5	16½ (419)	FONF16J22	1			35 (16)
	3.25	19½ (495)	FONF19J22	1			38 (17)
	4.25	24½ (622)	FONF24J22	1	FONF24J21	1	41 (19)
	5.25	30 (762)	FONF30A22	1	FONF30A21	1	44 (20)
	6.38	35 (889)	FONF35A22	1	FONF35A21	1	46 (21)
	8.5	45½ (1156)	FONF45J22	1	FONF45J21	1	50 (23)
	10.75	56 (1422)	FONF56A22	1	FONF56A21	1	54 (25)

All flange immersion heaters are Assembly Stock unless otherwise noted.

ⓐ Must be operated 3-phase wye

ⓑ Can be rewired for 1-phase

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters 5" 150 lb ANSI Flange—WATROD Element

Flange Heaters

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Application: Clean Water

60 W/in² Steel Flange 6-Copper (9.3 W/cm ²)	12	15 ½ (394)	FNC715J10	2	FNC715J3	1	FNC715J11	1	FNC715J5	1	35 (16)
	18	21 ½ (546)	FNC721J10	2	FNC721J3	1	FNC721J11	1	FNC721J5	1	38 (18)
	24	27 (686)	FNC727A10	3	FNC727A3	2	FNC727A11	3	FNC727A5	1	40 (19)
	30	32 ½ (826)			FNC732J3	2	FNC732J11	2	FNC732J5	1	43 (20)
	36	38 (965)			FNC738A3	2	FNC738A11	2	FNC738A5	1	47 (22)
	50	51 (1295)							FNC751A5	2	52 (24)
60	60 ½ (1537)							FNC760J5 ②	2	56 (26)	
60 W/in² Steel Flange 9-Copper (9.3 W/cm ²)	18	15 ½ (394)	FNC715J10X	3	FNC715J3X	1	FNC715J11X	1	FNC715J5X	1	38 (18)
	27	21 ½ (546)	FNC721J10X	3	FNC721J3X	3	FNC721J11X	3	FNC721J5X	1	42 (19)
	36	27 (686)			FNC727A3X	3	FNC727A11X	3	FNC727A5X	1	45 (21)
	45	32 ½ (826)			FNC732J3X	3	FNC732J11X	3	FNC732J5X	3	48 (22)
	54	38 (965)			FNC738A3X	3	FNC738A11X	3	FNC738A5X	3	53 (24)
	75	51 (1295)							FNC751A5X	3	60 (28)
90	60 ½ (1537)							FNC760J5X ②	3	66 (30)	

Application: Process Water

48 W/in² Steel Flange 6-Incoloy® (7.5 W/cm ²)	9	13 ½ (343)	FNN713J10	1	FNN713J3	1	FNN713J11	1	FNN713J5	1	33 (15)
	12	18 (457)	FNN718A10	2	FNN718A3	1	FNN718A11	1	FNN718A5	1	36 (17)
	15	20 ½ (521)	FNN720J10	2	FNN720J3	1	FNN720J11	1	FNN720J5	1	38 (18)
	18	25 ½ (648)	FNN725J10	2	FNN725J3	1	FNN725J11	1	FNN725J5	1	40 (19)
	24	33 (838)	FNN733A10	3	FNN733A3	2	FNN733A11	3	FNN733A5	1	43 (20)
	30	40 ½ (1029)			FNN740J3	2	FNN740J11	2	FNN740J5	1	47 (22)
36	48 (1219)			FNN748A3	2	FNN748A11	2	FNN748A5	1	52 (24)	
48 W/in² Steel Flange 9-Incoloy® (7.5 W/cm ²)	14	13 ½ (343)	FNN713J10X	3	FNN713J3X	1	FNN713J11X	1	FNN713J5X	1	35 (16)
	18	18 (457)	FNN718A10X	3	FNN718A3X	1	FNN718A11X	1	FNN718A5X	1	39 (18)
	23	20 ½ (521)	FNN720J10X	3	FNN720J3X	3	FNN720J11X	1	FNN720J5X	1	42 (19)
	27	25 ½ (648)	FNN725J10X	3	FNN725J3X	3	FNN725J11X	3	FNN725J5X	1	45 (21)
	36	33 (838)			FNN733A3X	3	FNN733A11X	3	FNN733A5X	1	48 (22)
	45	40 ½ (1029)			FNN740J3X	3	FNN740J11X	3	FNN740J5X	3	53 (24)
54	48 (1219)			FNN748A3X	3	FNN748A11X	3	FNN748A5X	3	60 (28)	

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

23 W/in² Steel Flange 6-Incoloy® (3.6 W/cm ²)	6	18 (457)	FNNA18A10	1	FNNA18A3	1	FNNA18A11	1	FNNA18A5	1	36 (17)
	9	25 ½ (648)	FNNA25J10	1	FNNA25J3	1	FNNA25J11	1	FNNA25J5	1	40 (19)
	12	33 (838)	FNNA33A10	2	FNNA33A3	1	FNNA33A11	1	FNNA33A5	1	43 (20)
	15	40 ½ (1029)	FNNA40J10	2	FNNA40J3	1	FNNA40J11	1	FNNA40J5	1	47 (22)
	18	48 (1219)	FNNA48A10	2	FNNA48A3	1	FNNA48A11	1	FNNA48A5	1	52 (24)
	25	64 ½ (1638)			FNNA64J3	2	FNNA64J11	2	FNNA64J5	1	57 (26)
30	77 (1956)			FNNA77A3	2	FNNA77A11	2	FNNA77A5	1	65 (28)	

CONTINUED

All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

② Standard

⑤ 240V~(ac) 3-phase can be rewired wye to produce ½ more kW and watt density when operated at 480V~(ac) 3-phase.

⑥ Can be rewired wye to produce ½ of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters 5" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

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

23 W/in ² Steel Flange 9-Incoloy® (3.6 W/cm ²)	9	18 (457)	FNNA18A10X	1	FNNA18A3X	1	FNNA18A11X	1	FNNA18A5X	1	39 (18)
	14	25½ (648)	FNNA25J10X	3	FNNA25J3X	1	FNNA25J11X	1	FNNA25J5X	1	45 (21)
	18	33 (838)	FNNA33A10X	3	FNNA33A3X	1	FNNA33A11X	1	FNNA33A5X	1	48 (22)
	23	40½ (1029)	FNNA40J10X	3	FNNA40J3X	3	FNNA40J11X	1	FNNA40J5X	1	53 (24)
	27	48 (1219)	FNNA48A10X	3	FNNA48A3X	3	FNNA48A11X	3	FNNA48A5X	1	60 (28)
	38	64½ (1638)			FNNA64J3X	3	FNNA64J11X	3	FNNA64J5X	1	68 (31)
	45	77 (1956)			FNNA77A3X	3	FNNA77A11X	3	FNNA77A5X	3	78 (36)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in ² Steel Flange 6-Steel (3.6 W/cm ²)	6	18 (457)	FNS718A10	1	FNS718A3	1	FNS718A11	1	FNS718A5	1	36 (17)
	9	25½ (648)	FNS725J10	1	FNS725J3	1	FNS725J11	1	FNS725J5	1	40 (18)
	12	33 (838)	FNS733A10	2	FNS733A3	1	FNS733A11	1	FNS733A5	1	43 (20)
	15	40½ (1029)	FNS740J10	2	FNS740J3	1	FNS740J11	1	FNS740J5	1	47 (22)
	18	48 (1219)	FNS748A10	2	FNS748A3	3	FNS748A11	1	FNS748A5①	1	52 (24)
	25	64½ (1638)			FNS764J3	2	FNS764J11	2	FNS764J5	1	57 (26)
	30	77 (1956)			FNS777A3	2	FNS777A11	2	FNS777A5	1	65 (30)
23 W/in ² Steel Flange 9-Steel (3.6 W/cm ²)	9	18 (457)	FNS718A10X	1	FNS718A3X	1	FNS718A11X	1	FNS718A5X	1	39 (18)
	14	25½ (648)	FNS725J10X	3	FNS725J3X	1	FNS725J11X	1	FNS725J5X	1	45 (21)
	18	33 (838)	FNS733A10X	3	FNS733A3X	1	FNS733A11X	1	FNS733A5X	1	48 (22)
	23	40½ (1029)	FNS740J10X	3	FNS740J3X	3	FNS740J11X	1	FNS740J5X	1	53 (24)
	27	48 (1219)	FNS748A10X	3	FNS748A3X	1	FNS748A11X	3	FNS748A5X	1	60 (28)
	38	64½ (1638)			FNS764J3X	3	FNS764J11X	3	FNS764J5X	1	68 (31)
	45	77 (1956)			FNS777A3X	3	FNS777A11X	3	FNS777A5X	3	78 (36)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ③ Steel Flange 6-Incoloy® (2.5 W/cm ²)	3	13½ (343)			FNN713J12	1		FNN713J13	1	36 (17)
	4	18 (457)			FNN718A12	1		FNN718A13	1	40 (18)
	5	20½ (521)			FNN720J12	1		FNN720J13	1	43 (20)
	6	25½ (648)			FNN725J12	1		FNN725J13	1	47 (22)
	8	33 (838)			FNN733A12	1		FNN733A13	1	52 (24)
	10	40½ (1029)			FNN740J12	1		FNN740J13	1	57 (26)
	12	48 (1219)			FNN748A12	1		FNN748A13	1	65 (30)
16 W/in ² ③ Steel Flange 9-Incoloy® (2.5 W/cm ²)	4.5	13½ (343)			FNN713J12X	1		FNN713J13X	1	39 (18)
	6	18 (457)			FNN718A12X	1		FNN718A13X	1	45 (21)
	7.5	20½ (521)			FNN720J12X	1		FNN720J13X	1	48 (22)
	9	25½ (648)			FNN725J12X	1		FNN725J13X	1	53 (24)
	12	33 (838)			FNN733A12X	1		FNN733A13X	1	60 (28)
	15	40½ (1029)			FNN740J12X	1		FNN740J13X	1	68 (31)
	18	48 (1219)			FNN748A12X	1		FNN748A13X	1	78 (36)

CONTINUED 

All flange immersion heaters are Assembly Stock unless otherwise noted.

- ① Stock
- ③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters 5" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Applications: Bunker C and #6 Fuel Oils

8 W/in² Steel Flange	5	40½ (1029)			FNS740J12	1				FNS740J13	1	47 (22)
	6	48 (1219)			FNS748A12	1				FNS748A13	1	52 (24)
6-Steel (1.3 W/cm ²)	8	64½ (1638)			FNS764J12	1				FNS764J13	1	57 (26)
	10	77 (1956)			FNS777A12	1				FNS777A13	1	65 (30)
8 W/in² Steel Flange	7.5	40½ (1029)			FNS740J12X	1				FNS740J13X	1	53 (24)
	9	48 (1219)			FNS748A12X	1				FNS748A13X	1	60 (28)
9-Steel (1.3 W/cm ²)	12	64½ (1638)			FNS764J12X	1				FNS764J13X	1	68 (31)
	15	77 (1956)			FNS777A12X	1				FNS777A13X	1	78 (36)

6" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Application: Clean Water

60 W/in² Steel Flange	24	15¾ (391)	FPC715G10	3	FPC715G3	2	FPC715G11	2	FPC715G5	1	73 (33)
	36	21¾ (543)	FPC721G10	4	FPC721G3	2	FPC721G11	2	FPC721G5	1	78 (36)
12-Copper (9.3 W/cm ²)	48	26¾ (683)			FPC726R3	4	FPC726R11	3	FPC726R5	2	81 (37)
	60	32¾ (822)			FPC732G3	4	FPC732G11	3	FPC732G5	2	85 (39)
	72	37¾ (962)			FPC737R3	4			FPC737R5	2	92 (42)
	100	50¾ (1292)							FPC750R5	4	100 (45)
	120	60¾ (1534)							FPC760G5 [Ⓜ]	4	110 (50)
60 W/in² Steel Flange	30	15¾ (391)	FPC715G10X	3	FPC715G3X	5	FPC715G11X	3	FPC715G5X	1	76 (35)
	45	21¾ (543)	FPC721G10X	5	FPC721G3X	5	FPC721G11X	3	FPC721G5X	5	82 (38)
15-Copper (9.3 W/cm ²)	60	26¾ (683)			FPC726R3X	5	FPC726R11X	3	FPC726R5X	5	85 (39)
	75	32¾ (822)			FPC732G3X	5	FPC732G11X	5	FPC732G5X	5	90 (41)
	90	37¾ (962)			FPC737R3X	5			FPC737R5X	5	98 (45)
	125	50¾ (1292)							FPC750R5X	5	108 (49)
	150	60¾ (1534)							FPC760G5X [Ⓜ]	5	120 (55)

Application: Deionized Water, Demineralized Water

60 W/in² 316 SS Flange	24	15¾ (400)	FPR715N10	3	FPR715N3	2	FPR715N11	2	FPR715N5	1	73 (33)
	36	21¾ (552)	FPR721N10	4	FPR721N3	2	FPR721N11	3	FPR721N5	1	78 (36)
12-316 SS (9.3 W/cm ²)	48	27¾ (692)			FPR727E3	4	FPR727E11	3	FPR727E5	2	81 (37)
	60	32¾ (832)			FPR732N3	4	FPR732N11	3	FPR732N5	2	85 (39)
Passivated	72	38¾ (972)			FPR738E3	4			FPR738E5	2	92 (42)
	100	51¾ (1302)							FPR751E5	4	100 (46)
	120	60¾ (1543)							FPR760N5	4	110 (50)

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All flange immersion heaters are Assembly Stock unless otherwise noted.

Ⓜ Standard
Ⓝ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters

6" 150 Lbs ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs (kg)	

Application: Deionized Water, Demineralized Water

60 W/in ²	30	15¾ (400)	FPR715N10X	3	FPR715N3X	5	FPR715N11X	3	FPR715N5X	1	76 (35)
316 SS Flange	45	21¾ (552)	FPR721N10X	5	FPR721N3X	5	FPR721N11X	3	FPR721N5X	5	82 (38)
15-316 SS (9.3 W/cm ²)	60	27¾ (692)			FPR727E3X	5	FPR727E11X	3	FPR727E5X	5	85 (39)
	75	32¾ (832)			FPR732N3X	5	FPR732N11X	5	FPR732N5X	5	90 (41)
Passivated	90	38¾ (972)			FPR738E3X	5			FPR738E5X	5	98 (45)
	125	51¾ (1302)							FPR751E5X	5	108 (49)
	150	60¾ (1543)							FPR760N5X	5	120 (55)

Application: Process Water

48 W/in ² Ⓢ Steel Flange 12-Incoloy® (7.5 W/cm ²)	18	13¾ (340)	FPN713G10	2	FPN713G3	1	FPN713G11	1	FPN713G5	1	73 (33)
	24	17¾ (454)	FPN717R10	3	FPN717R3	2	FPN717R11	2	FPN717R5	1	75 (34)
	30	20¾ (518)	FPN720G10	3	FPN720G3	2	FPN720G11	2	FPN720G5	1	78 (36)
	36	25¾ (645)	FPN725G10	4	FPN725G3	2	FPN725G11	2	FPN725G5	1	81 (37)
	48	32¾ (835)			FPN732R3	4	FPN732R11	3	FPN732R5	2	85 (39)
48 W/in ² Steel Flange 15-Incoloy® (7.5 W/cm ²)	60	40¾ (1026)			FPN740G3	4	FPN740G11	3	FPN740G5	2	92 (42)
	72	47¾ (1216)			FPN747R3	4			FPN747R5	2	100 (46)
	23	13¾ (340)	FPN713G10X	3	FPN713G3X	5	FPN713G11X	1	FPN713G5X	1	76 (35)
	30	17¾ (454)	FPN717R10X	3	FPN717R3X	5	FPN717R11X	3	FPN717R5X	1	78 (36)
	38	20¾ (518)	FPN720G10X	5	FPN720G3X	5	FPN720G11X	3	FPN720G5X	1	82 (38)
23 W/in ² Steel Flange 15-Incoloy® (3.6 W/cm ²)	45	25¾ (645)	FPN725G10X	5	FPN725G3X	5	FPN725G11X	3	FPN725G5X	5	85 (39)
	60	32¾ (835)			FPN732R3X	5	FPN732R11X	3	FPN732R5X	5	90 (41)
	75	40¾ (1026)			FPN740G3X	5	FPN740G11X	5	FPN740G5X	5	98 (45)
	90	47¾ (1216)			FPN747R3X	5			FPN747R5X	5	108 (49)

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

23 W/in ² Ⓢ Steel Flange 12-Incoloy® (3.6 W/cm ²)	12	17¾ (454)	FPNA17R10	2	FPNA17R3	1	FPNA17R11	1	FPNA17R5	1	75 (34)
	18	25¾ (645)	FPNA25G10	2	FPNA25G3	1	FPNA25G11	1	FPNA25G5	1	81 (37)
	24	32¾ (835)	FPNA32R10	3	FPNA32R3	2	FPNA32R11	2	FPNA32R5	1	85 (39)
	30	40¾ (1026)	FPNA40G10	3	FPNA40G3	2	FPNA40G11	1	FPNA40G5	1	92 (42)
	36	47¾ (1216)	FPNA47R10	4	FPNA47R3	2	FPNA47R11	2	FPNA47R5	1	100 (46)
23 W/in ² Steel Flange 15-Incoloy® (3.6 W/cm ²)	50	64¾ (1635)			FPNA64G3	4	FPNA64G11	3	FPNA64G5	2	110 (50)
	60	76¾ (1953)			FPNA76R3	4	FPNA76R11	3	FPNA76R5	2	118 (54)
	15	17¾ (454)	FPNA17R10X	3	FPNA17R3X	1	FPNA17R11X	1	FPNA17R5X	1	78 (36)
	23	25¾ (645)	FPNA25G10X	3	FPNA25G3X	5	FPNA25G11X	1	FPNA25G5X	1	85 (39)
	30	32¾ (835)	FPNA32R10X	3	FPNA32R3X	5	FPNA32R11X	3	FPNA32R5X	1	90 (41)
23 W/in ² Steel Flange 15-Incoloy® (3.6 W/cm ²)	38	40¾ (1026)	FPNA40G10X	5	FPNA40G3X	5	FPNA40G11X	3	FPNA40G5X	1	98 (45)
	45	47¾ (1216)	FPNA47R10X	5	FPNA47R3X	5	FPNA47R11X	3	FPNA47R5X	5	108 (49)
	63	64¾ (1635)			FPNA64G3X	5	FPNA64G11X	3	FPNA64G5X	5	120 (55)
	75	76¾ (1953)			FPNA76R3X	5	FPNA76R11X	5	FPNA76R5X	5	131 (60)

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All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Ⓢ 240V~(ac) 3-phase can be rewired wye to produce ⅓ more kW and watt density when operated at 480V~(ac) 3-phase.

Ⓢ Can be rewired wye to produce ⅓ of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters 6" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs	(kg)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in² Steel Flange 12-Steel (3.6 W/cm ²)	12	17% (454)	FPS717R10	2	FPS717R3	1	FPS717R11	1	FPS717R5	1	75 (34)
	18	25% (645)	FPS725G10	2	FPS725G3	1	FPS725G11	1	FPS725G5	1	81 (37)
	24	32% (835)	FPS732R10	3	FPS732R3	2	FPS732R11	2	FPS732R5	1	85 (39)
	30	40% (1026)	FPS740G10	3	FPS740G3	2	FPS740G11	2	FPS740G5	1	92 (42)
	36	47% (1216)	FPS747R10	4	FPS747R3	2	FPS747R11	2	FPS747R5	1	100 (46)
	50	64% (1635)			FPS764G3	4	FPS764G11	3	FPS764G5	2	110 (50)
60	76% (1953)			FPS776R3	4	FPS776R11	3	FPS776R5	2	118 (54)	
23 W/in² Steel Flange 15-Steel (3.6 W/cm ²)	15	17% (454)	FPS717R10X	3	FPS717R3X	1	FPS717R11X	1	FPS717R5X	1	78 (36)
	23	25% (645)	FPS725G10X	3	FPS725G3X	5	FPS725G11X	1	FPS725G5X	1	85 (39)
	30	32% (835)	FPS732R10X	3	FPS732R3X	5	FPS732R11X	3	FPS732R5X	1	90 (41)
	38	40% (1026)	FPS740G10X	5	FPS740G3X	5	FPS740G11X	3	FPS740G5X	1	98 (45)
	45	47% (1216)	FPS747R10X	5	FPS747R3X	5	FPS747R11X	3	FPS747R5X	5	108 (49)
	63	64% (1635)			FPS764G3X	5	FPS764G11X	3	FPS764G5X	5	120 (55)
75	76% (1953)			FPS776R3X	5	FPS776R11X	5	FPS776R5X	5	131 (60)	

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in² Steel Flange 12-Incoloy[®] (2.5 W/cm ²)	6	13% (340)			FPN713G12	1			FPN713G13	1	73 (33)
	8	17% (454)			FPN717R12	1			FPN717R13	1	75 (34)
	10	20% (518)			FPN720G12	1			FPN720G13	1	78 (36)
	12	25% (645)			FPN725G12	1			FPN725G13	1	81 (37)
	16	32% (835)			FPN732R12	1			FPN732R13	1	85 (39)
	20	40% (1026)			FPN740G12	2			FPN740G13	1	92 (42)
24	47% (1216)			FPN747R12	2			FPN747R13	1	100 (46)	
16 W/in² Steel Flange 15-Incoloy[®] (2.5 W/cm ²)	7.5	13% (340)			FPN713G12X	1			FPN713G13X	1	76 (35)
	10	17% (454)			FPN717R12X	1			FPN717R13X	1	78 (36)
	12.5	20% (518)			FPN720G12X	1			FPN720G13X	1	82 (38)
	15	25% (645)			FPN725G12X	1			FPN725G13X	1	85 (39)
	20	32% (835)			FPN732R12X	5			FPN732R13X	1	90 (41)
	25	40% (1026)			FPN740G12X	5			FPN740G13X	1	98 (45)
30	47% (1216)			FPN747R12X	5			FPN747R13X	1	108 (49)	

Applications: Bunker C and #6 Fuel Oils

8 W/in² Steel Flange 12-Steel (1.3 W/cm ²)	8	32% (835)			FPS732R12	1			FPS732R13	1	85 (39)
	10	40% (1026)			FPS740G12	1			FPS740G13	1	92 (42)
	12	47% (1216)			FPS747R12	1			FPS747R13	1	100 (46)
	16.5	64% (1635)			FPS764G12	1			FPS764G13	1	110 (50)
	20	76% (1953)			FPS776R12	2			FPS776R13	1	118 (54)
8 W/in² Steel Flange 15-Steel (1.3 W/cm ²)	10	32% (835)			FPS732R12X	1			FPS732R13X	1	90 (41)
	12.5	40% (1026)			FPS740G12X	1			FPS740G13X	1	98 (45)
	15	47% (1216)			FPS747R12X	1			FPS747R13X	1	108 (49)
	21	64% (1635)			FPS764G12X	5			FPS764G13X	1	120 (55)
	25	76% (1953)			FPS776R12X	5			FPS776R13X	1	131 (60)

All flange immersion heaters are Assembly Stock unless otherwise noted.

③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters

6" 150 lb ANSI Flange—FIREBAR Element

FIREBAR Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship.	
			240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	lbs	(kg)

Applications: Process Water, Ethylene Glycol (50%)

45 W/in ² 304 SS Flange 15-Incoloy® (7 W/cm ²)	30	13 1/2 (340)	FPNF13G27				78 (36)
	37.5	16 (406)	FPNF16A27	5			81 (37)
	45	18 3/4 (467)	FPNF18G27	5			84 (38)
	60	22 1/2 (581)	FPNF22R27	5	FPNF22R28	5	87 (40)
	75	27 1/2 (708)	FPNF27R27	5	FPNF27R28	5	91 (42)
	90	32 1/2 (835)	FPNF32R27	5	FPNF32R28	5	95 (43)
	120	42 1/2 (1076)			FPNF42G28	5	106 (48)
150	51 1/2 (1318)			FPNF51R28	5	116 (53)	

Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² ③ 304 SS Flange 15-Incoloy® (4.7 W/cm ²)	25	16 1/2 (419)	FPNF16J12	5	FPNF16J13	5	81 (37)
	32	19 1/2 (495)	FPNF19J12	5	FPNF19J13	5	84 (38)
	42	24 1/2 (622)	FPNF24J12	5	FPNF24J13	5	87 (40)
	52	30 (762)	FPNF30A12	5	FPNF30A13	5	91 (42)
	64	35 (889)	FPNF35A12	5	FPNF35A13	5	95 (43)
	85	45 1/2 (1156)	FPNF45J12	5	FPNF45J13	5	106 (48)
	110	56 (1422)			FPNF56A13	5	116 (53)

Applications: Heat Transfer Oils, Mineral Oils, Degreasing Solutions

23 W/in ² ④ 304 SS Flange 15-Incoloy® (3.6 W/cm ²)	19	16 1/2 (419)	FPNF16J20	5			81 (37)
	24	19 1/2 (495)	FPNF19J20	5			84 (38)
	32	24 1/2 (622)	FPNF24J20	5	FPNF24J19	5	87 (40)
	40	30 (762)	FPNF30A20	5	FPNF30A19	5	91 (42)
	48	35 (889)	FPNF35A20	5	FPNF35A19	5	95 (43)
	64	45 1/2 (1156)	FPNF45J20	5	FPNF45J19	5	106 (48)
	80	56 (1422)	FPNF56A20	5	FPNF56A19	5	116 (53)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

15 W/in ² ③ 304 SS Flange 15-Incoloy® (2.3 W/cm ²)	10	13 3/4 (340)	FPNF13G29	5			78 (36)
	12.5	16 (406)	FPNF16A29	5			81 (37)
	15	18 3/4 (467)	FPNF18G29	5			84 (38)
	20	22 1/2 (581)	FPNF22R29	5	FPNF22R30	5	87 (40)
	25	27 1/2 (708)	FPNF27R29	5	FPNF27R30	5	91 (42)
	30	32 1/2 (835)	FPNF32R29	5	FPNF32R30	5	95 (43)
	40	42 1/2 (1076)	FPNF42G29	5	FPNF42G30	5	106 (48)
50	51 1/2 (1318)	FPNF51R29	5	FPNF51R30	5	116 (53)	

Applications: Bunker C and #6 Fuel Oils, Asphalt

8 W/in ² ③ 304 SS Flange 15-Incoloy® (1.3 W/cm ²)	6.3	16 1/2 (419)	FPNF16J22	5			81 (37)
	8.1	19 1/2 (495)	FPNF19J22	5			84 (38)
	10.6	24 1/2 (622)	FPNF24J22	5	FPNF24J21	5	87 (40)
	13.1	30 (762)	FPNF30A22	5	FPNF30A21	5	91 (42)
	16	35 (889)	FPNF35A22	5	FPNF35A21	5	95 (43)
	21.3	45 1/2 (1156)	FPNF45J22	5	FPNF45J21	5	106 (48)
	26	56 (1422)	FPNF56A22	5	FPNF56A21	5	116 (53)

All flange immersion heaters are Assembly Stock unless otherwise noted.

③ Must be operated 3-phase wye.

④ Can be rewired for 1-phase.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Tubular and Process Assemblies

Flange Immersion Heaters 8" 150 lb ANSI Flange—WATROD Element

Flange Heaters

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	lbs	(kg)

Application: Clean Water

60 W/in² Steel Flange 18-Copper (9.3 W/cm ²)	50	21 3/4 (553)			FRC721N3 ②	3	FRC721N11	3	FRC721N5	2	118 (54)
	75	29 3/4 (756)			FRC729N3 ②	6			FRC729N5 ②	2	126 (58)
	100	37 3/4 (946)			FRC737E3 ②	6			FRC737E5	3	130 (59)
	125	45 3/4 (1149)			FRC745E3 ②	6			FRC745E5 ②	6	132 (60)
	150	52 3/4 (1340)							FRC752N5 ②	6	137 (63)
	175	60 3/4 (1543)							FRC760N5 ②	6	144 (66)
	200	68 3/4 (1734)							FRC768E5 ②	6	149 (68)

Application: Process Water

48 W/in² ⑤ Steel Flange 18-Incoloy® (7.5 W/cm ²)	50	25 3/4 (654)			FRN725N3 ②	3	FRN725N11 ②	3	FRN725N5 ②	2	121 (55)
	75	35 3/4 (908)			FRN735N3 ②	6			FRN735N5 ②	2	130 (59)
	100	44 1/4 (1124)			FRN744E3	6			FRN744E5	3	132 (60)
	125	54 11/16 (1389)			FRN754M3 ②	6			FRN754M5 ②	6	140 (64)
	150	63 11/16 (1617)							FRN763M5 ②	6	145 (66)
48 W/in² Steel Flange 24-Incoloy® (7.5 W/cm ²)	175	73 3/8 (1859)							FRN773D5	6	151 (69)
	200	82 11/16 (2100)							FRN782M5 ②	6	157 (72)
	67	26 3/8 (665)			FRN726D3X ②	4	FRN726D11X ②	3	FRN726D5X ②	2	129 (59)
	100	36 3/8 (919)			FRN736D3X ②	8			FRN736D5X ②	4	142 (65)
	133	44 11/16 (1135)			FRN744M3X ②	8			FRN744M5X ②	4	147 (67)
	167	54 11/16 (1389)			FRN754M3X ②	8			FRN754M5X ②	8	158 (72)
	200	63 11/16 (1618)							FRN763M5X ②	8	166 (76)
233	73 3/8 (1859)							FRN773D5X	8	175 (80)	
267	82 11/16 (2100)							FRN782M5X ②	8	184 (84)	

Application: Forced Air and Gases, Caustic Solutions, Degreasing Solutions

23 W/in² ⑤⑥ Steel Flange 18-Incoloy® (3.6 W/cm ²)	30	32 3/4 (832)	FRNA32N10 ②	3	FRNA32N3 ②	2	FRNA32N11 ②	2	FRNA32N5 ②	1	130 (59)
	40	43 3/4 (1099)			FRNA43E3 ②	3	FRNA43E11 ②	2	FRNA43E5 ②	2	132 (60)
	50	51 11/16 (1313)			FRNA51M3	3	FRNA51M11	3	FRNA51M5	2	137 (63)
23 W/in² Steel Flange 24-Incoloy® (3.6 W/cm ²)	40	33 3/8 (843)	FRNA33D10X ②	4	FRNA33D3X ②	4	FRNA33D11X ②	2	FRNA33D5X ②	2	142 (65)
	53	43 11/16 (1110)			FRNA43M3X ②	4	FRNA43M11X ②	3	FRNA43M5X ②	2	147 (67)
	67	51 11/16 (1313)			FRNA51M3X ②	4	FRNA51M11X ②	3	FRNA51M5X ②	2	154 (70)

CONTINUED

All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

Truck Shipment only

② Standard

⑤ 240V~(ac) 3-phase can be rewired wye to produce 1/2 more kW and watt density when operated at 480V~(ac) 3-phase.

⑥ Can be rewired wye to produce 1/2 of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters

8" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.								Est. Ship.	
			240V~(ac) 1-Phase	No. of Circuits	240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 1-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs	(kg)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in² Steel Flange 18-Steel (3.6 W/cm ²)	30	32 ³ / ₁₆ (832)	FRS732N10 ②	3	FRS732N3 ②	2	FRS732N11 ②	2	FRS732N5 ②	1	130 (59)
	40	43 ¹ / ₁₆ (1099)			FRS743E3 ②	3	FRS743E11 ②	2	FRS743E5	2	132 (60)
	50	51 ¹ / ₁₆ (1313)			FRS751M3	3	FRS751M11	3	FRS751M5	2	137 (63)
	60	62 ³ / ₁₆ (1580)			FRS762D3 ②	6	FRS762D11 ②	3	FRS762D5 ②	2	154 (70)
	70	70 ¹ / ₁₆ (1795)			FRS770M3 ②	6	FRS770M11	6	FRS770M5	2	160 (73)
	80	79 ¹ / ₁₆ (2024)			FRS779M3 ②	6			FRS779M5 ②	3	172 (78)
23 W/in² Steel Flange 24-Steel (3.6 W/cm ²)	40	33 ³ / ₁₆ (843)	FRS733D10X ②	4	FRS733D3X ②	4	FRS733D11X ②	2	FRS733D5X ②	2	142 (65)
	53	43 ¹ / ₁₆ (1110)			FRS743M3X ②	4	FRS743M11X ②	3	FRS743M5X ②	2	147 (67)
	67	51 ¹ / ₁₆ (1313)			FRS751M3X ②	4	FRS751M11X ②	3	FRS751M5X ②	2	154 (70)
	80	62 ³ / ₁₆ (1580)			FRS762D3X ②	8	FRS762D11X ②	4	FRS762D5X ②	4	166 (76)
	93	70 ¹ / ₁₆ (1796)			FRS770M3X ②	8	FRS770M11X ②	6	FRS770M5X ②	4	175 (80)
	107	79 ¹ / ₁₆ (2024)			FRS779M3X ②	8			FRS779M5X ②	4	181 (82)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in²③ Steel Flange 18-Incoloy® (2.5 W/cm ²)	17	25 ³ / ₁₆ (654)			FRN725N12 ②	1			FRN725N13 ②	1	121 (55)
	25	35 ³ / ₁₆ (908)			FRN735N12 ②	2			FRN735N13 ②	1	130 (59)
	33	44 ¹ / ₁₆ (1124)			FRN744E12 ②	2			FRN744E13	1	132 (60)
	42	54 ¹ / ₁₆ (1389)			FRN754M12 ②	3			FRN754M13 ②	2	140 (64)
	50	63 ¹ / ₁₆ (1618)							FRN763M13 ②	2	145 (66)
	58	73 ³ / ₁₆ (1859)							FRN773D13	2	151 (69)
67	82 ¹ / ₁₆ (2100)							FRN782M13 ②	2	157 (72)	
16 W/in²③ Steel Flange 24-Incoloy® (2.5 W/cm ²)	23	26 ³ / ₁₆ (665)			FRN726D12X ②	2			FRN726D13X ②	1	129 (59)
	33	36 ³ / ₁₆ (919)			FRN736D12X ②	2			FRN736D13X ②	1	142 (65)
	44	44 ¹ / ₁₆ (1135)			FRN744M12X ②	4			FRN744M13X ②	2	147 (67)
	56	54 ¹ / ₁₆ (1389)			FRN754M12X ②	4			FRN754M13X ②	2	158 (72)
	67	63 ¹ / ₁₆ (1618)							FRN763M13X ②	2	166 (76)
	77	73 ³ / ₁₆ (1859)							FRN773D13X ②	2	175 (80)
89	82 ¹ / ₁₆ (2100)							FRN782M13X ②	4	184 (84)	

Applications: Bunker C and #6 Fuel Oils

8 W/in²③ Steel Flange 18-Steel (1.3 W/cm ²)	12.5	43 ³ / ₁₆ (1099)			FRS743E12 ②	1			FRS743E13 ②	1	132 (60)
	16.5	51 ¹ / ₁₆ (1313)			FRS751M12	1			FRS751M13	1	137 (62)
	20	62 ³ / ₁₆ (1580)			FRS762D12 ②	2			FRS762D13 ②	1	145 (66)
	24	70 ¹ / ₁₆ (1795)			FRS770M12	2			FRS770M13	1	151 (69)
	27	79 ¹ / ₁₆ (2024)			FRS779M12 ②	2			FRS779M13 ②	1	155 (71)
8 W/in²③ Steel Flange 24-Steel (1.3 W/cm ²)	17	43 ¹ / ₁₆ (1110)			FRS743M12X ②	1			FRS743M13X ②	1	147 (67)
	22	51 ¹ / ₁₆ (1313)			FRS751M12X ②	2			FRS751M13X ②	1	154 (70)
	27	62 ³ / ₁₆ (1580)			FRS762D12X ②	2			FRS762D13X ②	1	166 (76)
	32	70 ¹ / ₁₆ (1796)			FRS770M12X ②	2			FRS770M13X ②	1	175 (80)
	36	79 ¹ / ₁₆ (2024)			FRS779M12X ②	2			FRS779M13X ②	1	181 (82)

All flange immersion heaters are Assembly Stock unless otherwise noted.

- ② Standard
- ③ Must be operated 3-phase wye

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

■ Truck Shipment only

Tubular and Process Assemblies

Flange Immersion Heaters 10" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship. Weight lbs (kg)
			240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	

Application: Process Water

48 W/in ² ⑤	190	54¾ (1391)			FSN754N5②	9	240 (109)
Steel Flange	262	73¾ (1861)			FSN773E5	9	260 (118)
27-Incoloy® (7.5 W/cm ²)							

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

23 W/in ² ⑥	45	33¾ (845)	FSNA33E3②	3	FSNA33E5②	3	165 (75)
Steel Flange	60	43¾ (1111)	FSNA43N3②	3	FSNA43N5②	3	195 (89)
27-Incoloy® (3.6 W/cm ²)	75	51¾ (1314)	FSNA51N3	9	FSNA51N5	3	230 (105)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in ²	45	33¾ (845)	FSS733E3②	3	FSS733E5②	3	165 (75)
Steel Flange	60	43¾ (1111)	FSS743N3②	3	FSS743N5②	3	195 (89)
27-Steel (3.6 W/cm ²)	75	51¾ (1314)	FSS751N3	9	FSS751N5	3	230 (105)
	90	62¾ (1581)			FSS762E5②	3	250 (114)
	105	70¾ (1797)			FSS770N5	3	258 (117)
	120	78¾ (2000)			FSS778N5②	3	265 (121)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ③	63	54¾ (1391)			FSN754N13②	3	240 (109)
Steel Flange	75	63¾ (1619)			FSN763N13②	3	250 (114)
27-Incoloy® (2.5 W/cm ²)	87	73¾ (1861)			FSN773E13	3	258 (117)

Applications: Bunker C and #6 Fuel Oils

8 W/in ² ③	25	51¾ (1314)	FSS751N12	3	FSS751N13	1	230 (105)
Steel Flange	30	62¾ (1581)	FSS762E12②	3	FSS762E13②	1	250 (114)
27-Steel	35	70¾ (1797)	FSS770N12	3	FSS770N13	1	258 (117)
(1.3 W/cm ²)	40	78¾ (2000)	FSS778N12②	3	FSS778N13②	1	265 (121)

All flange immersion heaters are Assembly Stock unless otherwise noted.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

■ Truck Shipment only

② Standard

③ Must be operated 3-phase wye.

⑤ 240V~(ac) 3-phase can be rewired wye to produce ½ more kW and watt density when operated at 480V~(ac) 3-phase.

⑥ Can be rewired wye to produce ½ of the original kW and watt density (3-phase only).

Tubular and Process Assemblies

Flange Immersion Heaters

12" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship.	
			240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs	(kg)

Application: Process Water

48 W/in ²	250	54% (1387)			FTN754L5 ^②	6	280 (127)
Steel Flange	350	73% (1857)			FTN773C5	12	291 (132)
36-Incoloy [®] (7.5 W/cm ²)							

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

23 W/in ²	60	33% (841)			FTNA33C5 ^②	3	205 (93)
Steel Flange	80	43% (1108)			FTNA43L5 ^②	3	240 (109)
36-Incoloy [®] (3.6 W/cm ²)	100	51% (1311)			FTNA51L5	3	280 (127)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in ²	60	33% (841)			FTS733C5 ^②	3	205 (93)
Steel Flange	80	43% (1108)			FTS743L5 ^②	3	240 (109)
36-Steel (3.6 W/cm ²)	100	51% (1311)			FTS751L5	3	280 (127)
	120	62% (1578)			FTS762C5 ^②	3	285 (130)
	140	70% (1794)			FTS770L5	4	290 (132)
	160	78% (1997)			FTS778L5 ^②	4	300 (136)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ^③	83	54% (1387)			FTN754L13 ^②	3	280 (127)
Steel Flange	117	73% (1857)			FTN773C13 ^②	3	291 (132)
36-Incoloy [®] (2.5 W/cm ²)							

Applications: Bunker C and #6 Fuel Oils

8 W/in ² ^③	34	51% (1311)	FTS751L12 ^②	2	FTS751L13	1	280 (127)
Steel Flange	40	62% (1578)	FTS762C12 ^②	2	FTS762C13 ^②	1	285 (130)
36-Steel (1.3 W/cm ²)	47	70% (1794)	FTS770L12 ^②	3	FTS770L13	2	290 (132)
	54	78% (1997)	FTS778L12 ^②	3	FTS778L13 ^②	2	300 (136)

All flange immersion heaters are Assembly Stock unless otherwise noted.

② Standard

③ Must be operated 3-phase wye.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

■ Truck Shipment only

Tubular and Process Assemblies

Flange Immersion Heaters 14" 150 lb ANSI Flange—WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.				Est. Ship.	
			240V~(ac) 3-Phase	No. of Circuits	480V~(ac) 3-Phase	No. of Circuits	Weight lbs	(kg)

Application: Process Water

48 W/in ²	315	54½ (1384)			FWN754J5 ^②	15	300 (136)
Steel Flange	375	63½ (1613)			FWN763J5 ^②	15	310 (141)
45-Incoloy [®] (7.5 W/cm ²)							

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

23 W/in ²	75	33 (838)			FWNA33A5 ^②	3	225 (102)
Steel Flange	100	43½ (1105)			FWNA43J5 ^②	3	255 (116)
45-Incoloy [®] (3.6 W/cm ²)	125	51½ (1308)			FWNA51J5	5	300 (136)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in ²	75	33 (838)			FWS733A5 ^②	3	225 (102)
Steel Flange	100	43½ (1105)			FWS743J5 ^②	3	255 (116)
45-Steel (3.6 W/cm ²)	125	51½ (1308)			FWS751J5	5	300 (136)
	150	62 (1575)			FWS762A5 ^②	5	310 (141)
	175	70½ (1791)			FWS770J5	5	318 (145)
	200	78½ (1994)			FWS778J5 ^②	5	330 (150)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ^③	105	54½ (1384)			FWN754J13 ^②	3	300 (136)
Steel Flange	125	63½ (1613)			FWN763J13 ^②	5	310 (141)
45-Incoloy [®] (2.5 W/cm ²)							

Applications: Bunker C and #6 Fuel Oils

8 W/in ² ^③	42	51½ (1308)	FWS751J12	3	FWS751J13	3	300 (136)
Steel Flange	50	62 (1575)	FWS762A12 ^②	3	FWS762A13 ^②	3	310 (141)
45-Steel	60	70½ (1791)	FWS770J12	3	FWS770J13	3	318 (144)
(1.3 W/cm ²)	67	78½ (1994)	FWS778J12 ^②	5	FWS778J13 ^②	3	330 (150)

All flange immersion heaters are Assembly Stock unless otherwise noted.

^② Standard

^③ Must be operated 3-phase wye.

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Standard: 10 working days, depending on size

■ Truck Shipment only

Flange Immersion Heaters

Build-a-Code

Flange Immersion Heater Base Code Number^①

(Includes general purpose enclosure without thermostat)

Terminal Enclosure Type

- S** = General purpose (NEMA 1)
- W** = Moisture resistant (NEMA 4)
- E** = Explosion resistant (NEMA 7)
- E/W** = Explosion/moisture resistant (NEMA 7/4)

Thermostat^②

Thermocouple^③

- J** = Type J
- K** = Type K

- ① Flange immersion heaters are supplied with a standard, general purpose (NEMA 1) terminal enclosure. A thermostat will not fit the standard general purpose terminal enclosure on 2, 2½ and 3 inch flange sizes.
- ② Code numbers are shown on the Thermostat stock chart on [page 425](#). Check the temperature sensing bulb O.D. to be certain it will fit into the thermowell's I.D.
- ③ Specify Type J or K thermocouple. If overtemp thermocouple specify orientation horizontal, vertical up or vertical down.

How to Order

To order a stock flange heater, please specify:

- Watlow code number
- Flange size and material
- Volts/watts
- Phase
- Options
- Quantity

If the flange immersion heater is to be configured with options, add the suffix letter(s) to the base flange heater code number, as indicated on the Build-a-Code chart.

If our stock units do not meet your application needs, Watlow will make-to-order.

For **made-to-order** units please specify:

- Application, including media heated, flow rate, pressure, and process operating temperatures
- Volts/watts
- Watt density
- Phase
- Number of circuits
- Number of heating elements
- Element diameter (WATROD only)
- Immersed ('B' dimension) length
- Flange size, rating and material
- No-heat section below the flange
- Terminal enclosure type
- Options
- Quantity

Availability

Stock: Same day shipment

Assembly Stock: Five to seven working days

Modified Stock^③: Five to seven working days

Standard: 10 working days

Made-to-Order: Five to seven weeks

Options, complexity and quantity may affect availability and lead times. Consult factory.

③ Stock or Assembly Stock units with catalog options.