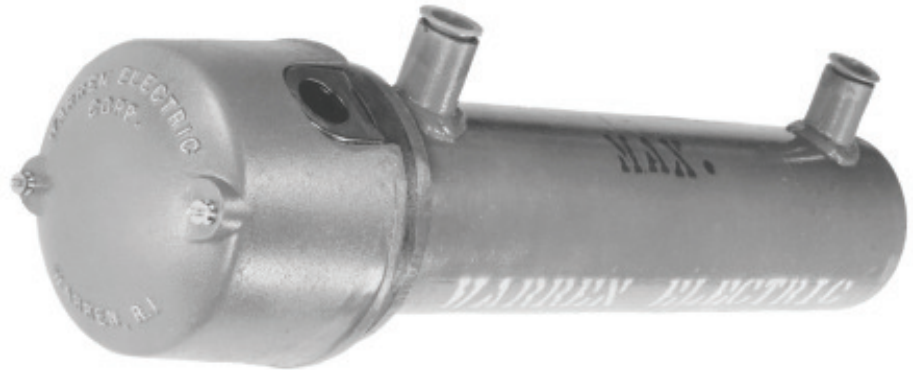


# ELECTRIC OIL HEATERS

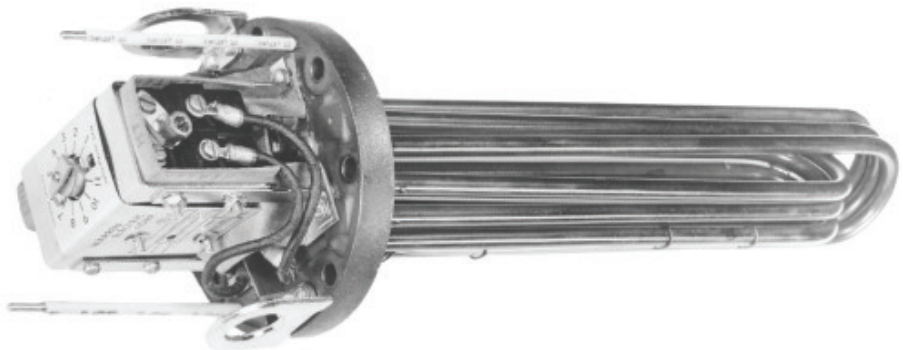


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*Most of these have become industry standards and many are U.L. Listed.  
With over forty years expertise, we can meet all your heating needs for residual fuel oils.*

*We also manufacture heaters for many other applications. We are specialists in designing, engineering, and manufacturing both standard and custom Electric Process Heaters.*

*Please do not hesitate to contact us for assistance on your particular heating requirement.  
Electric Process Heater solutions begin here...*



## WARREN ELECTRIC CORPORATION

36 Franklin Street, PO Box 86, Warren, Rhode Island 02885-0086 USA  
Toll Free: 1-877-399-HEAT (4328) Tel: 401-245-3700 Fax: 401-245-9331

Email: [wec@warrenonline.com](mailto:wec@warrenonline.com) [www.warrenonline.com](http://www.warrenonline.com)  
ISO 9001 REGISTERED ASME ACCREDITED





## Electric Fuel Oil Heaters

### How to Calculate Wattage Requirements:

$$\text{WATTS} = 1.3 \times \text{GPH} \times \Delta T$$

EXAMPLE: 40 GPH @ High Fire  
 150°F = Outlet Temperature  
 100°F = Inlet Temperature

GPH = Gallons per hour  
 $\Delta T$  = Temperature difference between Inlet and Outlet (Degrees Fahrenheit)

CALCULATIONS:  $\Delta T = 150^\circ\text{F} - 100^\circ\text{F} = 50^\circ\text{F}$

$$\begin{aligned} \text{WATTS} &= 1.3 \times \text{GPH} \times \Delta T \\ &= 1.3 \times 40 \times 50 = 2600 \text{ Watts} \end{aligned}$$

Heater must be greater than 2600 Watts - Use 3000 Watts

### Model Number Explanation:

EXAMPLE OF A TYPICAL MODEL: **ADF - 5 - 230 - 20 \*3**

Series Type: Denotes Thermostat and Flange or Screw Plug Type.  
 (See Pages 3 & 4 for Dimensions, etc.)  
 D = Interlock

5  
 Kilowatts  
 (5000 watts)

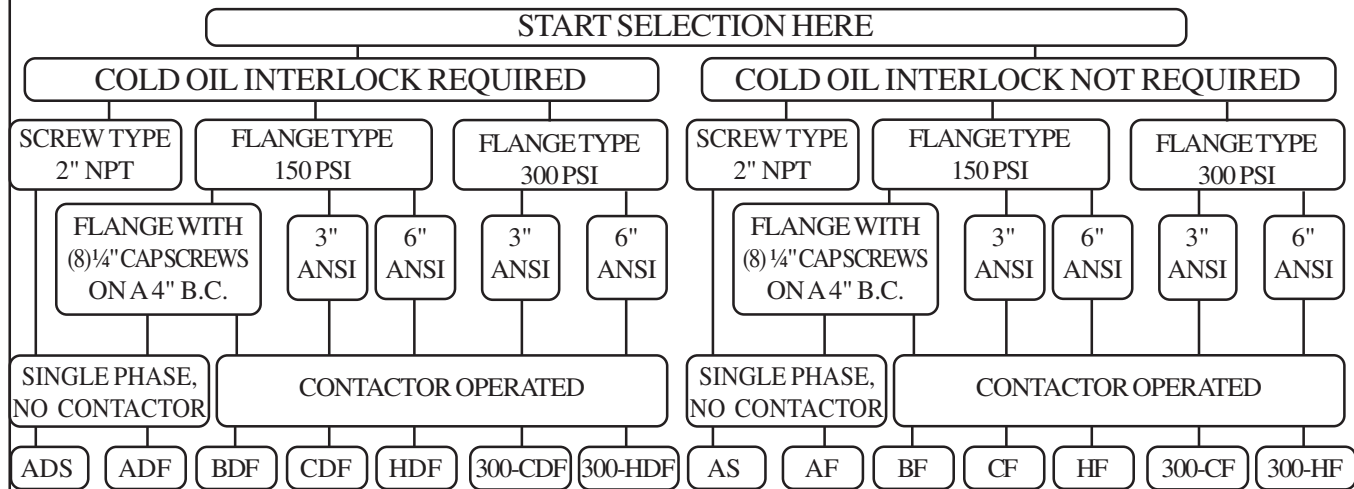
230  
 Voltage

20 \*3  
 Immersed length in inches

Blank = 1 circuit, +2 = 2 circuits, etc.

Phase: \*3 = 3 phase, Blank = 1 phase

### Heater Selection Chart:



Check Selection Above in Table 1, Page 3. Select complete model number, Pages 5 to 14. Flange and head dimensions are given on Page 3. Casing dimensions are given on page 15.

Warren Electric Corporation heaters are generally "Range Rated". A single heater may be used over a wide range of voltage conditions. "Range Rating" reduces inventory and minimizes stocking problems. Turnover is improved, fewer dollars are invested, shipping costs and paperwork are reduced. Operating voltage affects wattage output. The nameplate of each "Range Rated" heater shows the minimum and maximum voltage that would normally be applied to that heater. Also shown is the power output in watts for each of these voltages.

The following are available on request: Screw Plug and Flanged Heaters; Circulation Heaters; Over-the-Side Heaters; ASME Certification; Casing Insulation; Pilot Lights; Alloy, Stainless, Copper Elements; Flange Sizes and Types Not Cataloged; Thermocouples; Various Temperature Controls; and Custom Modifications.

PLEASE CONSULT FACTORY.



## Electric Fuel Oil Heaters

TABLE 1: (✓) = STANDARD HEATER (D = WITH INTERLOCK) (Consult factory for non-standard)							
WATTS	HEATER SERIES						
	AS & ADS	AF & ADF	BF & BDF	CF & 300-CF	CDF & 300-CDF	HF & 300-HF	HDF & 300-HDF
	CASING CONNECTION						
	2" NPT	STD. FL.	STD. FL.	3" x 150# 3" x 300#	3" x 150# 3" x 300#	6" x 150# 6" x 300#	6" x 150# 6" x 300#
	POWER SOURCE						
Line	Line	Contactor	Contactor	Contactor	Contactor	Contactor	
1000		✓					
2000	✓	✓	✓				
3000	✓	✓	✓				
4000	✓	✓	✓				
4500	✓						
5000	✓	✓	✓	✓	✓		
6000			✓	✓	✓		
7000			✓				
8000				✓	✓		
10000			✓	✓	✓	✓	✓
12000			✓	✓	✓	✓	✓
15000				✓	✓	✓	✓
16000						✓	✓
18000				✓	✓	✓	✓
20000			✓			✓	✓
24000				✓	✓	✓	✓
30000				✓	✓	✓	✓
36000, 42000, 48000, 60000, 75000, 100000						✓	✓

For other Watts or not checked above, consult factory.

TABLE 2:	
<p>SERIES AF, ADF, BF, BDF</p>	<p>SERIES AS, ADS</p>
<p>SERIES CF, CDF</p>	<p>SERIES 300-CF, 300-CDF</p>
<p>SERIES HF, HDF</p>	<p>SERIES 300-HF, 300-HDF</p>

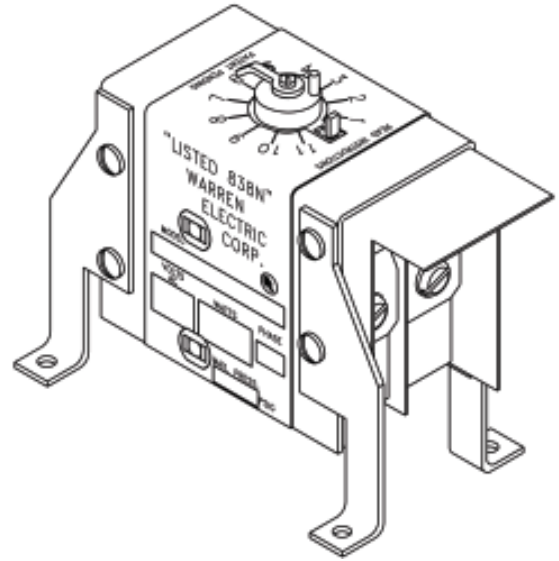
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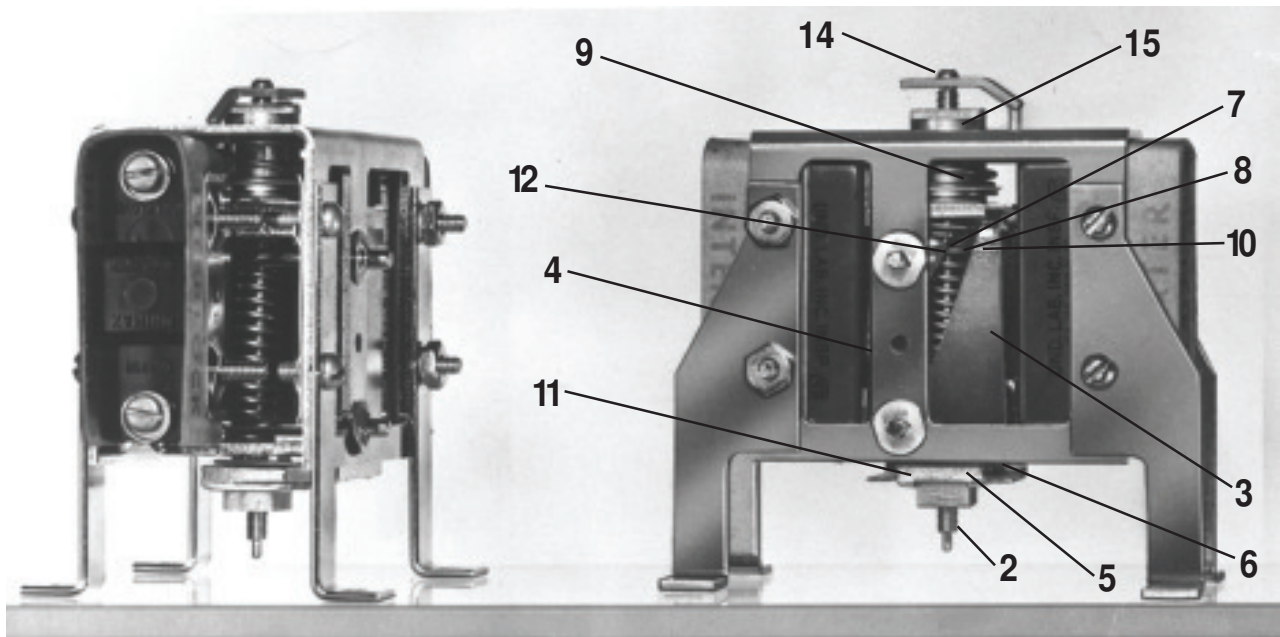
## Electric Fuel Oil Heaters

### Features:

- **STANDARD FUEL OIL THERMOSTAT**
- **POINTER and DIAL** for quick accurate adjustments.
- **REVERSE SWITCH ACTUATION** - Switch actuators move AWAY from switches on a temperature rise - prevents overstressing the internal parts of the switch - lengthens switch life.
- **HEAVY DUTY CONSTRUCTION**
- **15 MONTH WARRANTY**
- **NO PACKING GLAND** - temperature sensing device is attached directly to the flange.
- **HEAVY CAST PROTECTIVE COVER**
- **SPRING LOADED CLIPS** on sensing bulb assure uniform contact.



### Thermostat:



SERIES ADF, ADS, BDF, CDF, 300-CDF, HDF, 300-HDF

SERIES AF, AS, BF, CF, 300-CF, HF, 300-HF

### How the Thermostat works:

HOW THE THERMOSTAT WORKS: Temperature sensing bulb (not shown) expands on a temperature rise and pushes center drive shaft (2) up. Operating levers (3) and (4) are actuated by movement of the center drive shaft which transmits motion to the levers through precision balls (5), (6), (7) and (8). Lever movement is precise and consistent due to free rolling ball bearing action. The ball bearings (5), (6), (7) and (8) are held in place by springs (9) and (10) and positioned by retainers (11) and (12). The oil temperature setting is adjusted by rotating the center drive shaft (2) with the pointer (14) which is attached to the spline end of the center drive shaft. The interlock temperature is adjusted by rotating the knurled brass handle (15).



## 2" NPT STEEL Plug

2 to 5 kW  
110-120 & 208-240 Volt  
Single Phase

AS & ADS Series  
(Use S Casings)

### Without Interlock

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contact	QTY	SIZE "	
AS-2-115-11	2000	16.7	115	110-120	1	✓		1	1/2	11
AS-2-230-11		8.7	230	208-240	1	✓		1	1/2	11
AS-3-230-18	3000	13.1	230	208-240	1	✓		1	1/2	18
AS-4-230-20	4000	17.4	230	208-240	1	✓		1	1/2	20
AS-4-230-24		17.4	230	208-240	1	✓		1	1/2	24
AS-4.5-230-20	4500	19.5	230	208-240	1	✓		1	1/2	20
AS-4.5-230-26		19.5	230	208-240	1	✓		1	1/2	26
AS-5-230-20	5000	21.7	230	208-240	1	✓		1	3/4	20
AS-5-230-28		21.7	230	208-240	1	✓		1	3/4	28

### With Interlock

ADS-2-115-11	2000	16.7	115	110-120	1	✓		1	3/4	11
ADS-2-230-11		8.7	230	208-240	1	✓		1	1/2	11
ADS-3-230-18	3000	13.1	230	208-240	1	✓		1	3/4	18
ADS-4-230-20	4000	17.4	230	208-240	1	✓		2	1/2,3/4	20
ADS-4-230-24		17.4	230	208-240	1	✓		2	1/2,3/4	24
ADS-4.5-230-20	4500	19.5	230	208-240	1	✓		2	1/2,3/4	20
ADS-4.5-230-26		19.5	230	208-240	1	✓		2	1/2,3/4	26
ADS-5-230-20	5000	21.7	230	208-240	1	✓		2	1/2,3/4	20
ADS-5-230-28		21.7	230	208-240	1	✓		2	1/2,3/4	28

## AB Series Flange

1 to 5 kW  
110-120 & 208-240 Volt  
Single Phase

AF & ADF Series  
(Use AB Casings)

### Without Interlock

AF-1-115-11	1000	8.7	115	110-120	1	✓		1	1/2	11
AF-1-230-11		4.4	230	208-240	1	✓		1	1/2	11
AF-2-230-13	2000	8.7	230	208-240	1	✓		1	1/2	13
AF-3-230-13	3000	13.1	230	208-240	1	✓		1	1/2	13
AF-3-230-18		13.1	230	208-240	1	✓		1	1/2	18
AF-4-230-13	4000	17.4	230	208-240	1	✓		1	1/2	13
AF-4-230-20		17.4	230	208-240	1	✓		1	1/2	20
AF-5-230-13	5000	21.7	230	208-240	1	✓		1	3/4	13
AF-5-230-20		21.7	230	208-240	1	✓		1	3/4	20

### With Interlock

ADF-1-115-11	1000	8.7	115	110-120	1	✓		1	1/2	11
ADF-1-230-11		4.4	230	208-240	1	✓		1	1/2	11
ADF-2-230-13	2000	8.7	230	208-240	1	✓		1	1/2	13
ADF-3-230-13	3000	13.1	230	208-240	1	✓		1	3/4	13
ADF-3-230-18		13.1	230	208-240	1	✓		1	3/4	18
ADF-4-230-13	4000	17.4	230	208-240	1	✓		2	1/2,3/4	13
ADF-4-230-20		17.4	230	208-240	1	✓		2	1/2,3/4	20
ADF-5-230-13	5000	21.7	230	208-240	1	✓		2	1/2,3/4	13
ADF-5-230-20		21.7	230	208-240	1	✓		2	1/2,3/4	20

(1) At Design Voltage.

208 Volt - Above models, single phase only. 550 Volt - Above models not available.

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## AB Series Flange

2 to 20 kW  
208-240 & 420-480 Volt  
Single & Three Phase

BF Series  
BDF Series  
(Use AB Casings)

Without Interlock

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contactors	QTY	SIZE "	
BF-2-230-11		8.7	230	208-240	1		✓	1	1/2	11
BF-2-230-11*3	2000	5.0	230	208-240	3		✓	1	3/4	11
BF-2-440-11*3		2.5	460	420-480	3		✓	1	3/4	11
BF-3-230-18		13.1	230	208-240	1		✓	1	1/2	18
BF-3-230-18*3	3000	7.6	230	208-240	3		✓	1	3/4	18
BF-3-440-18*3		3.8	460	420-480	3		✓	1	3/4	18
BF-4-230-20		17.4	230	208-240	1		✓	1	3/4	20
BF-4-230-20*3	4000	10.0	230	208-240	3		✓	1	3/4	20
BF-4-440-20*3		5.0	460	420-480	3		✓	1	3/4	20
BF-5-230-20		21.7	230	208-240	1		✓	1	3/4	20
BF-5-230-20*3	5000	12.5	230	208-240	3		✓	1	3/4	20
BF-5-440-20*3		6.3	460	420-480	3		✓	1	3/4	20
BF-6-230-20		26.1	230	208-240	1		✓	1	3/4	20
BF-6-230-20*3	6000	15.1	230	208-240	3		✓	1	3/4	20
BF-6-440-20*3		7.6	460	420-480	3		✓	1	3/4	20
BF-7-230-24		30.4	230	208-240	1		✓	2	1/2,3/4	24
BF-7-230-24*3	7000	17.6	230	208-240	3		✓	2	1/2,3/4	24
BF-7-440-24*3		8.8	460	420-480	3		✓	2	1/2,3/4	24
BF-10-230-24*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	24
BF-10-440-24*3		12.6	460	420-480	3		✓	1	3/4	24
BF-12-230-30*3	12000	30.2	230	208-230	3		✓	2	1/2,3/4	30
BF-12-440-30*3		15.1	460	420-480	3		✓	1	3/4	30
BF-20-440-48*3	20000	25.2	460	420-480	3		✓	2	1/2,3/4	48

With Interlock

BDF-2-230-11		8.7	230	208-240	1		✓	2	1/2	11
BDF-2-230-11*3	2000	5.0	230	208-240	3		✓	2	1/2	11
BDF-2-440-11*3		2.5	460	420-480	3		✓	2	1/2	11
BDF-3-230-18		13.1	230	208-240	1		✓	2	1/2	18
BDF-3-230-18*3	3000	7.6	230	208-240	3		✓	2	1/2	18
BDF-3-440-18*3		3.8	460	420-480	3		✓	2	1/2	18
BDF-4-230-20		17.4	230	208-240	1		✓	2	1/2	20
BDF-4-230-20*3	4000	10.0	230	208-240	3		✓	2	1/2	20
BDF-4-440-20*3		5.0	460	420-480	3		✓	2	1/2	20
BDF-5-230-20		21.7	230	208-240	1		✓	2	1/2,3/4	20
BDF-5-230-20*3	5000	12.5	230	208-240	3		✓	2	1/2,3/4	20
BDF-5-440-20*3		6.3	460	420-480	3		✓	2	1/2	20
BDF-6-230-20		26.1	230	208-240	1		✓	2	1/2,3/4	20
BDF-6-230-20*3	6000	15.1	230	208-240	3		✓	2	1/2	20
BDF-6-440-20*3		7.6	460	420-480	3		✓	2	1/2	20
BDF-7-230-24		30.4	230	208-240	1		✓	2	1/2,3/4	24
BDF-7-230-24*3	7000	17.6	230	208-240	3		✓	2	1/2	24
BDF-7-440-24*3		8.8	460	420-480	3		✓	2	1/2	24
BDF-10-230-24*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	24
BDF-10-440-24*3		12.6	460	420-480	3		✓	2	1/2	24
BDF-12-230-30*3	12000	30.2	230	208-230	3		✓	2	1/2,3/4	30
BDF-12-440-30*3		15.1	460	420-480	3		✓	2	1/2	30
BDF-20-440-48*3	20000	25.2	460	420-480	3		✓	2	1/2,3/4	48

(1) At Design Voltage.

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

ALL HEATERS LISTED ON THIS PAGE ARE LISTED BY UNDERWRITERS LABORATORIES, (UL)



## 3" □ 150# ANSI Flange

Without Interlock

5 to 30 kW  
208-240 & 420-480 Volt  
Single & Three Phase

CF Series  
(Use C Casings)

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contactors	QTY	SIZE "	
CF-5-230-14		21.7	230	208-240	1		✓	1	3/4	14
CF-5-230-14*3		12.5	230	208-240	3		✓	1	3/4	14
CF-5-230-16		21.7	230	208-240	1		✓	1	3/4	16
CF-5-230-16*3		12.5	230	208-240	3		✓	1	3/4	16
CF-5-230-23	5000	21.7	230	208-240	1		✓	1	3/4	23
CF-5-230-23*3		12.5	230	208-240	3		✓	1	3/4	23
CF-5-440-14*3		6.3	460	420-480	3		✓	1	3/4	14
CF-5-440-16*3		6.3	460	420-480	3		✓	1	3/4	16
CF-5-440-23*3		6.3	460	420-480	3		✓	1	3/4	23
CF-6-230-18		26.1	230	208-240	1		✓	2	1/2,3/4	18
CF-6-230-18*3		15.1	230	208-240	3		✓	1	3/4	18
CF-6-230-19		26.1	230	208-240	1		✓	2	1/2,3/4	19
CF-6-230-19*3		15.1	230	208-240	3		✓	1	3/4	19
CF-6-230-28	6000	26.1	230	208-240	1		✓	2	1/2,3/4	28
CF-6-230-28*3		15.1	230	208-240	3		✓	1	3/4	28
CF-6-440-18*3		7.6	460	420-480	3		✓	1	3/4	18
CF-6-440-19*3		7.6	460	420-480	3		✓	1	3/4	19
CF-6-440-28*3		7.6	460	420-480	3		✓	1	3/4	28
CF-8-230-18		34.8	230	208-240	1		✓	2	1/2,3/4	18
CF-8-230-18*3		20.2	230	208-240	3		✓	2	1/2,3/4	18
CF-8-230-25		34.8	230	208-240	1		✓	2	1/2,3/4	25
CF-8-230-25*3		20.2	230	208-240	3		✓	2	1/2,3/4	25
CF-8-230-37	8000	34.8	230	208-240	1		✓	2	1/2,3/4	37
CF-8-230-37*3		20.2	230	208-240	3		✓	2	1/2,3/4	37
CF-8-440-18*3		10.1	460	420-480	3		✓	1	3/4	18
CF-8-440-25*3		10.1	460	420-480	3		✓	1	3/4	25
CF-8-440-37*3		10.1	460	420-480	3		✓	1	3/4	37
CF-10-230-24*3		25.2	230	208-240	3		✓	2	1/2,3/4	24
CF-10-230-31*3		25.2	230	208-240	3		✓	2	1/2,3/4	31
CF-10-230-47*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	47
CF-10-440-24*3		12.6	460	420-480	3		✓	1	3/4	24
CF-10-440-31*3		12.6	460	420-480	3		✓	1	3/4	31
CF-10-440-47*3		12.6	460	420-480	3		✓	1	3/4	47
CF-12-230-30*3		30.2	230	208-240	3		✓	2	1/2,3/4	30
CF-12-230-38*3		30.2	230	208-240	3		✓	2	1/2,3/4	38
CF-12-230-55*3	12000	30.2	230	208-240	3		✓	2	1/2,3/4	55
CF-12-440-30*3		15.1	460	420-480	3		✓	1	3/4	30
CF-12-440-38*3		15.1	460	420-480	3		✓	1	3/4	38
CF-12-440-55*3		15.1	460	420-480	3		✓	1	3/4	55
CF-15-230-36*3		37.7	230	208-240	3		✓	2	1/2,3/4	36
CF-15-230-46*3		37.7	230	208-240	3		✓	2	1/2,3/4	46
CF-15-230-69*3	15000	37.7	230	208-240	3		✓	2	1/2,3/4	69
CF-15-440-36*3		18.9	460	420-480	3		✓	2	1/2	36
CF-15-440-46*3		18.9	460	420-480	3		✓	2	1/2	46
CF-15-440-69*3		18.9	460	420-480	3		✓	2	1/2	69
CF-18-440-40*3		22.7	460	420-480	3		✓	2	1/2,3/4	40
CF-18-440-56*3	18000	22.7	460	420-480	3		✓	2	1/2,3/4	56
CF-18-440-83*3		22.7	460	420-480	3		✓	2	1/2,3/4	83
CF-24-440-54*3		30.2	460	420-480	3		✓	2	1/2,3/4	54
CF-24-440-75*3	24000	30.2	460	420-480	3		✓	2	1/2,3/4	75
CF-24-440-111*3		30.2	460	420-480	3		✓	2	1/2,3/4	111
CF-30-440-66*3		37.7	460	420-480	3		✓	2	1/2,3/4	66
CF-30-440-93*3	30000	37.7	460	420-480	3		✓	2	1/2,3/4	93
CF-30-440-123*3		37.7	460	420-480	3		✓	2	1/2,3/4	123

(1) At Design Voltage.

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

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## 3" □ 150# ANSI Flange

5 to 30 kW  
208-240 & 420-480 Volt  
Single & Three Phase

CDF Series  
(Use C Casings)

With Interlock

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contactors	QTY	SIZE "	
CDF-5-230-14		21.7	230	208-240	1		✓	2	3/4	14
CDF-5-230-14*3		12.5	230	208-240	3		✓	2	3/4	14
CDF-5-230-16		21.7	230	208-240	1		✓	2	3/4	16
CDF-5-230-16*3		12.5	230	208-240	3		✓	2	3/4	16
CDF-5-230-23	5000	21.7	230	208-240	1		✓	2	3/4	23
CDF-5-230-23*3		12.5	230	208-240	3		✓	2	3/4	23
CDF-5-440-14*3		6.3	460	420-480	3		✓	2	3/4	14
CDF-5-440-16*3		6.3	460	420-480	3		✓	2	3/4	16
CDF-5-440-23*3		6.3	460	420-480	3		✓	2	3/4	23
CDF-6-230-18		26.1	230	208-240	1		✓	2	1/2,3/4	18
CDF-6-230-18*3		15.1	230	208-240	3		✓	2	3/4	18
CDF-6-230-19		26.1	230	208-240	1		✓	2	1/2,3/4	19
CDF-6-230-19*3		15.1	230	208-240	3		✓	2	3/4	19
CDF-6-230-28	6000	26.1	230	208-240	1		✓	2	1/2,3/4	28
CDF-6-230-28*3		15.1	230	208-240	3		✓	2	3/4	28
CDF-6-440-18*3		7.6	460	420-480	3		✓	2	3/4	18
CDF-6-440-19*3		7.6	460	420-480	3		✓	2	3/4	19
CDF-6-440-28*3		7.6	460	420-480	3		✓	2	3/4	28
CDF-8-230-18		34.8	230	208-240	1		✓	2	1/2,3/4	18
CDF-8-230-18*3		20.2	230	208-240	3		✓	2	1/2,3/4	18
CDF-8-230-25		34.8	230	208-240	1		✓	2	1/2,3/4	25
CDF-8-230-25*3		20.2	230	208-240	3		✓	2	1/2,3/4	25
CDF-8-230-37	8000	34.8	230	208-240	1		✓	2	1/2,3/4	37
CDF-8-230-37*3		20.2	230	208-240	3		✓	2	1/2,3/4	37
CDF-8-440-18*3		10.1	460	420-480	3		✓	2	3/4	18
CDF-8-440-25*3		10.1	460	420-480	3		✓	2	3/4	25
CDF-8-440-37*3		10.1	460	420-480	3		✓	2	3/4	37
CDF-10-230-24*3		25.2	230	208-240	3		✓	2	1/2,3/4	24
CDF-10-230-31*3		25.2	230	208-240	3		✓	2	1/2,3/4	31
CDF-10-230-47*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	47
CDF-10-440-24*3		12.6	460	420-480	3		✓	2	3/4	24
CDF-10-440-31*3		12.6	460	420-480	3		✓	2	3/4	31
CDF-10-440-47*3		12.6	460	420-480	3		✓	2	3/4	47
CDF-12-230-30*3		30.2	230	208-240	3		✓	2	1/2,3/4	30
CDF-12-230-38*3		30.2	230	208-240	3		✓	2	1/2,3/4	38
CDF-12-230-55*3	12000	30.2	230	208-240	3		✓	2	1/2,3/4	55
CDF-12-440-30*3		15.1	460	420-480	3		✓	2	3/4	30
CDF-12-440-38*3		15.1	460	420-480	3		✓	2	3/4	38
CDF-12-440-55*3		15.1	460	420-480	3		✓	2	3/4	55
CDF-15-230-36*3		37.7	230	208-240	3		✓	2	1/2,3/4	36
CDF-15-230-46*3		37.7	230	208-240	3		✓	2	1/2,3/4	46
CDF-15-230-69*3	15000	37.7	230	208-240	3		✓	2	1/2,3/4	69
CDF-15-440-36*3		18.9	460	420-480	3		✓	2	1/2	36
CDF-15-440-46*3		18.9	460	420-480	3		✓	2	1/2	46
CDF-15-440-69*3		18.9	460	420-480	3		✓	2	1/2	69
CDF-18-440-40*3		22.7	460	420-480	3		✓	2	1/2,3/4	40
CDF-18-440-56*3	18000	22.7	460	420-480	3		✓	2	1/2,3/4	56
CDF-18-440-83*3		22.7	460	420-480	3		✓	2	1/2,3/4	83
CDF-24-440-54*3		30.2	460	420-480	3		✓	2	1/2,3/4	54
CDF-24-440-75*3	24000	30.2	460	420-480	3		✓	2	1/2,3/4	75
CDF-24-440-111*3		30.2	460	420-480	3		✓	2	1/2,3/4	111
CDF-30-440-66*3		37.7	460	420-480	3		✓	2	1/2,3/4	66
CDF-30-440-93*3	30000	37.7	460	420-480	3		✓	2	1/2,3/4	93
CDF-30-440-123*3		37.7	460	420-480	3		✓	2	1/2,3/4	123

(1) At Design Voltage.

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

ALL HEATERS LISTED ON THIS PAGE ARE LISTED BY UNDERWRITERS LABORATORIES, (UL)

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# WARREN ELECTRIC CORPORATION

Warren, Rhode Island USA

ISO 9001  
REGISTERED

## 3" □ 300# ANSI Flange

5 to 30 kW  
208-240 & 420-480 Volt  
Single & Three Phase

300-CF Series  
(Use 300C Casings)

Without Interlock

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contactors	QTY	SIZE "	
300-CF-5-230-14		21.7	230	208-240	1		✓	1	3/4	14
300-CF-5-230-14*3		12.5	230	208-240	3		✓	1	3/4	14
300-CF-5-230-16		21.7	230	208-240	1		✓	1	3/4	16
300-CF-5-230-16*3		12.5	230	208-240	3		✓	1	3/4	16
300-CF-5-230-23	5000	21.7	230	208-240	1		✓	1	3/4	23
300-CF-5-230-23*3		12.5	230	208-240	3		✓	1	3/4	23
300-CF-5-440-14*3		6.3	460	420-480	3		✓	1	3/4	14
300-CF-5-440-16*3		6.3	460	420-480	3		✓	1	3/4	16
300-CF-5-440-23*3		6.3	460	420-480	3		✓	1	3/4	23
300-CF-6-230-18		26.1	230	208-240	1		✓	2	1/2,3/4	18
300-CF-6-230-18*3		15.1	230	208-240	3		✓	1	3/4	18
300-CF-6-230-19		26.1	230	208-240	1		✓	2	1/2,3/4	19
300-CF-6-230-19*3		15.1	230	208-240	3		✓	1	3/4	19
300-CF-6-230-28	6000	26.1	230	208-240	1		✓	2	1/2,3/4	28
300-CF-6-230-28*3		15.1	230	208-240	3		✓	1	3/4	28
300-CF-6-440-18*3		7.6	460	420-480	3		✓	1	3/4	18
300-CF-6-440-19*3		7.6	460	420-480	3		✓	1	3/4	19
300-CF-6-440-28*3		7.6	460	420-480	3		✓	1	3/4	28
300-CF-8-230-18		34.8	230	208-240	1		✓	2	1/2,3/4	18
300-CF-8-230-18*3		20.2	230	208-240	3		✓	2	1/2,3/4	18
300-CF-8-230-25		34.8	230	208-240	1		✓	2	1/2,3/4	25
300-CF-8-230-25*3		20.2	230	208-240	3		✓	2	1/2,3/4	25
300-CF-8-230-37	8000	34.8	230	208-240	1		✓	2	1/2,3/4	37
300-CF-8-230-37*3		20.2	230	208-240	3		✓	2	1/2,3/4	37
300-CF-8-440-18*3		10.1	460	420-480	3		✓	1	3/4	18
300-CF-8-440-25*3		10.1	460	420-480	3		✓	1	3/4	25
300-CF-8-440-37*3		10.1	460	420-480	3		✓	1	3/4	37
300-CF-10-230-24*3		25.2	230	208-240	3		✓	2	1/2,3/4	24
300-CF-10-230-31*3		25.2	230	208-240	3		✓	2	1/2,3/4	31
300-CF-10-230-47*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	47
300-CF-10-440-24*3		12.6	460	420-480	3		✓	1	3/4	24
300-CF-10-440-31*3		12.6	460	420-480	3		✓	1	3/4	31
300-CF-10-440-47*3		12.6	460	420-480	3		✓	1	3/4	47
300-CF-12-230-30*3		30.2	230	208-240	3		✓	2	1/2,3/4	30
300-CF-12-230-38*3		30.2	230	208-240	3		✓	2	1/2,3/4	38
300-CF-12-230-55*3	12000	30.2	230	208-240	3		✓	2	1/2,3/4	55
300-CF-12-440-30*3		15.1	460	420-480	3		✓	1	3/4	30
300-CF-12-440-38*3		15.1	460	420-480	3		✓	1	3/4	38
300-CF-12-440-55*3		15.1	460	420-480	3		✓	1	3/4	55
300-CF-15-230-36*3		37.7	230	208-240	3		✓	2	1/2,3/4	36
300-CF-15-230-46*3		37.7	230	208-240	3		✓	2	1/2,3/4	46
300-CF-15-230-69*3	15000	37.7	230	208-240	3		✓	2	1/2,3/4	69
300-CF-15-440-36*3		18.9	460	420-480	3		✓	2	1/2	36
300-CF-15-440-46*3		18.9	460	420-480	3		✓	2	1/2	46
300-CF-15-440-69*3		18.9	460	420-480	3		✓	2	1/2	69
300-CF-18-440-40*3		22.7	460	420-480	3		✓	2	1/2,3/4	40
300-CF-18-440-56*3	18000	22.7	460	420-480	3		✓	2	1/2,3/4	56
300-CF-18-440-83*3		22.7	460	420-480	3		✓	2	1/2,3/4	83
300-CF-24-440-54*3		30.2	460	420-480	3		✓	2	1/2,3/4	54
300-CF-24-440-75*3	24000	30.2	460	420-480	3		✓	2	1/2,3/4	75
300-CF-24-440-111*3		30.2	460	420-480	3		✓	2	1/2,3/4	111
300-CF-30-440-66*3		37.7	460	420-480	3		✓	2	1/2,3/4	66
300-CF-30-440-93*3	30000	37.7	460	420-480	3		✓	2	1/2,3/4	93
300-CF-30-440-123*3		37.7	460	420-480	3		✓	2	1/2,3/4	123

(1) At Design Voltage.

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

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## 3" □ 300# ANSI Flange

With Interlock

5 to 30 kW  
208-240 & 420-480 Volt  
Single & Three Phase

300-CDF Series  
(Use 300C Casings)

MODEL	(1) WATTS	Full Load Current Amperes at Design Volts	DESIGN VOLTS	AC VOLTS	PHASE	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
						Line	Contact	QTY	SIZE "	
300-CDF-5-230-14		21.7	230	208-240	1		✓	2	1/2,3/4	14
300-CDF-5-230-14*3		12.5	230	208-240	3		✓	2	1/2	14
300-CDF-5-230-16		21.7	230	208-240	1		✓	2	1/2,3/4	16
300-CDF-5-230-16*3		12.5	230	208-240	3		✓	2	1/2	16
300-CDF-5-230-23	5000	21.7	230	208-240	1		✓	2	1/2,3/4	23
300-CDF-5-230-23*3		12.5	230	208-240	3		✓	2	1/2	23
300-CDF-5-440-14*3		6.3	460	420-480	3		✓	2	1/2	14
300-CDF-5-440-16*3		6.3	460	420-480	3		✓	2	1/2	16
300-CDF-5-440-23*3		6.3	460	420-480	3		✓	2	1/2	23
300-CDF-6-230-18		26.1	230	208-240	1		✓	2	1/2,3/4	18
300-CDF-6-230-18*3		15.1	230	208-240	3		✓	2	1/2	18
300-CDF-6-230-19		26.1	230	208-240	1		✓	2	1/2,3/4	19
300-CDF-6-230-19*3		15.1	230	208-240	3		✓	2	1/2	19
300-CDF-6-230-28	6000	26.1	230	208-240	1		✓	2	1/2,3/4	28
300-CDF-6-230-28*3		15.1	230	208-240	3		✓	2	1/2	28
300-CDF-6-440-18*3		7.6	460	420-480	3		✓	2	1/2	18
300-CDF-6-440-19*3		7.6	460	420-480	3		✓	2	1/2	19
300-CDF-6-440-28*3		7.6	460	420-480	3		✓	2	1/2	28
300-CDF-8-230-18		34.8	230	208-240	1		✓	2	1/2,3/4	18
300-CDF-8-230-18*3		20.2	230	208-240	3		✓	2	1/2,3/4	18
300-CDF-8-230-25		34.8	230	208-240	1		✓	2	1/2,3/4	25
300-CDF-8-230-25*3		20.2	230	208-240	3		✓	2	1/2,3/4	25
300-CDF-8-230-37	8000	34.8	230	208-240	1		✓	2	1/2,3/4	37
300-CDF-8-230-37*3		20.2	230	208-240	3		✓	2	1/2,3/4	37
300-CDF-8-440-18*3		10.1	460	420-480	3		✓	2	1/2	18
300-CDF-8-440-25*3		10.1	460	420-480	3		✓	2	1/2	25
300-CDF-8-440-37*3		10.1	460	420-480	3		✓	2	1/2	37
300-CDF-10-230-24*3		25.2	230	208-240	3		✓	2	1/2,3/4	24
300-CDF-10-230-31*3		25.2	230	208-240	3		✓	2	1/2,3/4	31
300-CDF-10-230-47*3	10000	25.2	230	208-240	3		✓	2	1/2,3/4	47
300-CDF-10-440-24*3		12.6	460	420-480	3		✓	2	1/2	24
300-CDF-10-440-31*3		12.6	460	420-480	3		✓	2	1/2	31
300-CDF-10-440-47*3		12.6	460	420-480	3		✓	2	1/2	47
300-CDF-12-230-30*3		30.2	230	208-240	3		✓	2	1/2,3/4	30
300-CDF-12-230-38*3		30.2	230	208-240	3		✓	2	1/2,3/4	38
300-CDF-12-230-55*3	12000	30.2	230	208-240	3		✓	2	1/2,3/4	55
300-CDF-12-440-30*3		15.1	460	420-480	3		✓	2	1/2	30
300-CDF-12-440-38*3		15.1	460	420-480	3		✓	2	1/2	38
300-CDF-12-440-55*3		15.1	460	420-480	3		✓	2	1/2	55
300-CDF-15-230-36*3		37.7	230	208-240	3		✓	2	1/2,3/4	36
300-CDF-15-230-46*3		37.7	230	208-240	3		✓	2	1/2,3/4	46
300-CDF-15-230-69*3	15000	37.7	230	208-240	3		✓	2	1/2,3/4	69
300-CDF-15-440-36*3		18.9	460	420-480	3		✓	2	1/2	36
300-CDF-15-440-46*3		18.9	460	420-480	3		✓	2	1/2	46
300-CDF-15-440-69*3		18.9	460	420-480	3		✓	2	1/2	69
300-CDF-18-440-40*3		22.7	460	420-480	3		✓	2	1/2,3/4	40
300-CDF-18-440-56*3	18000	22.7	460	420-480	3		✓	2	1/2,3/4	56
300-CDF-18-440-83*3		22.7	460	420-480	3		✓	2	1/2,3/4	83
300-CDF-24-440-54*3		30.2	460	420-480	3		✓	2	1/2,3/4	54
300-CDF-24-440-75*3	24000	30.2	460	420-480	3		✓	2	1/2,3/4	75
300-CDF-24-440-111*3		30.2	460	420-480	3		✓	2	1/2,3/4	111
300-CDF-30-440-66*3		37.7	460	420-480	3		✓	2	1/2,3/4	66
300-CDF-30-440-93*3	30000	37.7	460	420-480	3		✓	2	1/2,3/4	93
300-CDF-30-440-123*3		37.7	460	420-480	3		✓	2	1/2,3/4	123

(1) At Design Voltage.

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

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## 6" □ 150# ANSI Flange

Without Interlock

10 to 100 kW  
208-240 & 420-480 Volt  
Single & Three Phase

**HF Series**  
(Use H Casings)

WATTS	MODEL 208 - 240 Volts 1 Phase	MODEL 208 - 240 Volts 3 Phase	MODEL 420 - 480 Volts 3 Phase	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
				Line	Contact	QTY	SIZE "	
10000	HF-10-230-14	HF-10-230-14*3	HF-10-440-14*3		✓	1	1 1/2	14
	HF-10-230-16	HF-10-230-16*3	HF-10-440-16*3		✓	1	1 1/2	16
	HF-10-230-23	HF-10-230-23*3	HF-10-440-23*3		✓	1	1 1/2	23
12000	HF-12-230-17+2	HF-12-230-17*3	HF-12-440-17*3		✓	1	1 1/2	17
	HF-12-230-18+2	HF-12-230-18*3	HF-12-440-18*3		✓	1	1 1/2	18
	HF-12-230-28+2	HF-12-230-28*3	HF-12-440-28*3		✓	1	1 1/2	28
15000	HF-15-220-18+2	HF-15-220-18*3	HF-15-440-18+3		✓	1	1 1/2	18
	HF-15-220-25+2	HF-15-220-25*3	HF-15-440-25+3		✓	1	1 1/2	25
	HF-15-220-37+2	HF-15-220-37*3	HF-15-440-37+3		✓	1	1 1/2	37
16000	HF-16-230-19+2	HF-16-230-19*3	HF-16-440-19*3		✓	1	1 1/2	19
	HF-16-230-25+2	HF-16-230-25*3	HF-16-440-25*3		✓	1	1 1/2	25
	HF-16-230-38+2	HF-16-230-38*3	HF-16-440-38*3		✓	1	1 1/2	38
18000	HF-18-220-23+2	HF-18-220-23*3	HF-18-440-23+3		✓	1	1 1/2	23
	HF-18-220-31+2	HF-18-220-31*3	HF-18-440-31+3		✓	1	1 1/2	31
	HF-18-220-47+2	HF-18-220-47*3	HF-18-440-47+3		✓	1	1 1/2	47
20000		HF-20-230-23*3+2	HF-20-440-23*3		✓	1	1 1/2	23
		HF-20-230-31*3+2	HF-20-440-31*3		✓	1	1 1/2	31
		HF-20-230-47*3+2	HF-20-440-47*3		✓	1	1 1/2	47
24000		HF-24-230-29*3+2	HF-24-440-29*3		✓	1	1 1/2	29
		HF-24-230-37*3+2	HF-24-440-37*3		✓	1	1 1/2	37
		HF-24-230-55*3+2	HF-24-440-55*3		✓	1	1 1/2	55
30000		HF-30-230-35*3+2	HF-30-440-35*3		✓	1	1 1/2	35
		HF-30-230-46*3+2	HF-30-440-46*3		✓	1	1 1/2	46
		HF-30-230-69*3+2	HF-30-440-69*3		✓	1	1 1/2	69
36000		HF-36-230-40*3+2	HF-36-440-40*3		✓	1	1 1/2	40
		HF-36-230-56*3+2	HF-36-440-56*3		✓	1	1 1/2	56
		HF-36-230-83*3+2	HF-36-440-83*3		✓	1	1 1/2	83
42000		HF-42-230-49*3+4	HF-42-440-49*3+2		✓	1	1 1/2	49
		HF-42-230-65*3+4	HF-42-440-65*3+2		✓	1	1 1/2	65
		HF-42-230-98*3+4	HF-42-440-98*3+2		✓	1	1 1/2	98
48000		HF-48-230-54*3+4	HF-48-440-54*3+2		✓	1	1 1/2	54
		HF-48-230-75*3+4	HF-48-440-75*3+2		✓	1	1 1/2	75
		HF-48-230-111*3+4	HF-48-440-111*3+2		✓	1	1 1/2	111
60000		HF-60-230-66*3+4	HF-60-440-66*3+2		✓	1	1 1/2	66
		HF-60-230-93*3+4	HF-60-440-93*3+2		✓	1	1 1/2	93
		HF-60-230-123*3+4	HF-60-440-123*3+2		✓	1	1 1/2	123
75000			HF-75-440-88*3+4		✓	1	1 1/2	88
100000			HF-100-440-120*3+4		✓	1	1 1/2	120



## 6" □ 150# ANSI Flange

With Interlock

10 to 100 kW  
208-240 & 420-480 Volt  
Single & Three Phase

**HDF Series  
(Use H Casings)**

WATTS	MODEL 208 - 240 Volts 1 Phase	MODEL 208 - 240 Volts 3 Phase	MODEL 420 - 480 Volts 3 Phase	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
				Line	Contact	QTY	SIZE "	
10000	HDF-10-230-14	HDF-10-230-14*3	HDF-10-440-14*3		✓	1	1 1/2	14
	HDF-10-230-16	HDF-10-230-16*3	HDF-10-440-16*3		✓	1	1 1/2	16
	HDF-10-230-23	HDF-10-230-23*3	HDF-10-440-23*3		✓	1	1 1/2	23
12000	HDF-12-230-17+2	HDF-12-230-17*3	HDF-12-440-17*3		✓	1	1 1/2	17
	HDF-12-230-18+2	HDF-12-230-18*3	HDF-12-440-18*3		✓	1	1 1/2	18
	HDF-12-230-28+2	HDF-12-230-28*3	HDF-12-440-28*3		✓	1	1 1/2	28
15000	HDF-15-220-18+2	HDF-15-220-18*3	HDF-15-440-18+3		✓	1	1 1/2	18
	HDF-15-220-25+2	HDF-15-220-25*3	HDF-15-440-25+3		✓	1	1 1/2	25
	HDF-15-220-37+2	HDF-15-220-37*3	HDF-15-440-37+3		✓	1	1 1/2	37
16000	HDF-16-230-19+2	HDF-16-230-19*3	HDF-16-440-19*3		✓	1	1 1/2	19
	HDF-16-230-25+2	HDF-16-230-25*3	HDF-16-440-25*3		✓	1	1 1/2	25
	HDF-16-230-38+2	HDF-16-230-38*3	HDF-16-440-38*3		✓	1	1 1/2	38
18000	HDF-18-220-23+2	HDF-18-220-23*3	HDF-18-440-23+3		✓	1	1 1/2	23
	HDF-18-220-31+2	HDF-18-220-31*3	HDF-18-440-31+3		✓	1	1 1/2	31
	HDF-18-220-47+2	HDF-18-220-47*3	HDF-18-440-47+3		✓	1	1 1/2	47
20000		HDF-20-230-23*3+2	HDF-20-440-23*3		✓	1	1 1/2	23
		HDF-20-230-31*3+2	HDF-20-440-31*3		✓	1	1 1/2	31
		HDF-20-230-47*3+2	HDF-20-440-47*3		✓	1	1 1/2	47
24000		HDF-24-230-29*3+2	HDF-24-440-29*3		✓	1	1 1/2	29
		HDF-24-230-37*3+2	HDF-24-440-37*3		✓	1	1 1/2	37
		HDF-24-230-55*3+2	HDF-24-440-55*3		✓	1	1 1/2	55
30000		HDF-30-230-35*3+2	HDF-30-440-35*3		✓	1	1 1/2	35
		HDF-30-230-46*3+2	HDF-30-440-46*3		✓	1	1 1/2	46
		HDF-30-230-69*3+2	HDF-30-440-69*3		✓	1	1 1/2	69
36000		HDF-36-230-40*3+2	HDF-36-440-40*3		✓	1	1 1/2	40
		HDF-36-230-56*3+2	HDF-36-440-56*3		✓	1	1 1/2	56
		HDF-36-230-83*3+2	HDF-36-440-83*3		✓	1	1 1/2	83
42000		HDF-42-230-49*3+4	HDF-42-440-49*3+2		✓	1	1 1/2	49
		HDF-42-230-65*3+4	HDF-42-440-65*3+2		✓	1	1 1/2	65
		HDF-42-230-98*3+4	HDF-42-440-98*3+2		✓	1	1 1/2	98
48000		HDF-48-230-54*3+4	HDF-48-440-54*3+2		✓	1	1 1/2	54
		HDF-48-230-75*3+4	HDF-48-440-75*3+2		✓	1	1 1/2	75
		HDF-48-230-111*3+4	HDF-48-440-111*3+2		✓	1	1 1/2	111
60000		HDF-60-230-66*3+4	HDF-60-440-66*3+2		✓	1	1 1/2	66
		HDF-60-230-93*3+4	HDF-60-440-93*3+2		✓	1	1 1/2	93
		HDF-60-230-123*3+4	HDF-60-440-123*3+2		✓	1	1 1/2	123
75000			HDF-75-440-88*3+4		✓	1	1 1/2	88
100000			HDF-100-440-120*3+4		✓	1	1 1/2	120

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.



## 6" □ 300# ANSI Flange

10 to 100 kW  
208-240 & 420-480 Volt  
Single & Three Phase

**300-HF Series**  
(Use 300H Casings)

Without Interlock

WATTS	MODEL 208 - 240 Volts 1 Phase	MODEL 208 - 240 Volts 3 Phase	MODEL 420 - 480 Volts 3 Phase	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
				Line	Contact	QTY	SIZE "	
10000	300-HF-10-230-14	300-HF-10-230-14*3	300-HF-10-440-14*3		✓	1	1 1/2	14
	300-HF-10-230-16	300-HF-10-230-16*3	300-HF-10-440-16*3		✓	1	1 1/2	16
	300-HF-10-230-23	300-HF-10-230-23*3	300-HF-10-440-23*3		✓	1	1 1/2	23
12000	300-HF-12-230-17+2	300-HF-12-230-17*3	300-HF-12-440-17*3		✓	1	1 1/2	17
	300-HF-12-230-18+2	300-HF-12-230-18*3	300-HF-12-440-18*3		✓	1	1 1/2	18
	300-HF-12-230-28+2	300-HF-12-230-28*3	300-HF-12-440-28*3		✓	1	1 1/2	28
15000	300-HF-15-220-18+2	300-HF-15-220-18*3	300-HF-15-440-18+3		✓	1	1 1/2	18
	300-HF-15-220-25+2	300-HF-15-220-25*3	300-HF-15-440-25+3		✓	1	1 1/2	25
	300-HF-15-220-37+2	300-HF-15-220-37*3	300-HF-15-440-37+3		✓	1	1 1/2	37
16000	300-HF-16-230-19+2	300-HF-16-230-19*3	300-HF-16-440-19*3		✓	1	1 1/2	19
	300-HF-16-230-25+2	300-HF-16-230-25*3	300-HF-16-440-25*3		✓	1	1 1/2	25
	300-HF-16-230-38+2	300-HF-16-230-38*3	300-HF-16-440-38*3		✓	1	1 1/2	38
18000	300-HF-18-220-23+2	300-HF-18-220-23*3	300-HF-18-440-23+3		✓	1	1 1/2	23
	300-HF-18-220-31+2	300-HF-18-220-31*3	300-HF-18-440-31+3		✓	1	1 1/2	31
	300-HF-18-220-47+2	300-HF-18-220-47*3	300-HF-18-440-47+3		✓	1	1 1/2	47
20000		300-HF-20-230-23*3+2	300-HF-20-440-23*3		✓	1	1 1/2	23
		300-HF-20-230-31*3+2	300-HF-20-440-31*3		✓	1	1 1/2	31
		300-HF-20-230-47*3+2	300-HF-20-440-47*3		✓	1	1 1/2	47
24000		300-HF-24-230-29*3+2	300-HF-24-440-29*3		✓	1	1 1/2	29
		300-HF-24-230-37*3+2	300-HF-24-440-37*3		✓	1	1 1/2	37
		300-HF-24-230-55*3+2	300-HF-24-440-55*3		✓	1	1 1/2	55
30000		300-HF-30-230-35*3+2	300-HF-30-440-35*3		✓	1	1 1/2	35
		300-HF-30-230-46*3+2	300-HF-30-440-46*3		✓	1	1 1/2	46
		300-HF-30-230-69*3+2	300-HF-30-440-69*3		✓	1	1 1/2	69
36000		300-HF-36-230-40*3+2	300-HF-36-440-40*3		✓	1	1 1/2	40
		300-HF-36-230-56*3+2	300-HF-36-440-56*3		✓	1	1 1/2	56
		300-HF-36-230-83*3+2	300-HF-36-440-83*3		✓	1	1 1/2	83
42000		300-HF-42-230-49*3+4	300-HF-42-440-49*3+2		✓	1	1 1/2	49
		300-HF-42-230-65*3+4	300-HF-42-440-65*3+2		✓	1	1 1/2	65
		300-HF-42-230-98*3+4	300-HF-42-440-98*3+2		✓	1	1 1/2	98
48000		300-HF-48-230-54*3+4	300-HF-48-440-54*3+2		✓	1	1 1/2	54
		300-HF-48-230-75*3+4	300-HF-48-440-75*3+2		✓	1	1 1/2	75
		300-HF-48-230-111*3+4	300-HF-48-440-111*3+2		✓	1	1 1/2	111
60000		300-HF-60-230-66*3+4	300-HF-60-440-66*3+2		✓	1	1 1/2	66
		300-HF-60-230-93*3+4	300-HF-60-440-93*3+2		✓	1	1 1/2	93
		300-HF-60-230-123*3+4	300-HF-60-440-123*3+2		✓	1	1 1/2	123
75000			300-HF-75-440-88*3+4		✓	1	1 1/2	88
100000			300-HF-100-440-120*3+4		✓	1	1 1/2	120

All models shown above are also available in 208 or 550 volt, 1 or 3 phase.

To place your order or for technical support, please call Toll Free: 1-877-399-HEAT (4328), Fax: 401-245-9331



## 6" □ 300# ANSI Flange

10 to 100 kW  
208-240 & 420-480 Volt  
Single & Three Phase

**300-HDF Series  
(Use 300H Casings)**

With Interlock

WATTS	MODEL 208 - 240 Volts 1 Phase	MODEL 208 - 240 Volts 3 Phase	MODEL 420 - 480 Volts 3 Phase	Thermostat Connections		Conduit Openings		IMMERSED LENGTH
				Line	Contact	QTY	SIZE "	
10000	300-HDF-10-230-14	300-HDF-10-230-14*3	300-HDF-10-440-14*3		✓	1	1 1/2	14
	300-HDF-10-230-16	300-HDF-10-230-16*3	300-HDF-10-440-16*3		✓	1	1 1/2	16
	300-HDF-10-230-23	300-HDF-10-230-23*3	300-HDF-10-440-23*3		✓	1	1 1/2	23
12000	300-HDF-12-230-17+2	300-HDF-12-230-17*3	300-HDF-12-440-17*3		✓	1	1 1/2	17
	300-HDF-12-230-18+2	300-HDF-12-230-18*3	300-HDF-12-440-18*3		✓	1	1 1/2	18
	300-HDF-12-230-28+2	300-HDF-12-230-28*3	300-HDF-12-440-28*3		✓	1	1 1/2	28
15000	300-HDF-15-220-18+2	300-HDF-15-220-18*3	300-HDF-15-440-18+3		✓	1	1 1/2	18
	300-HDF-15-220-25+2	300-HDF-15-220-25*3	300-HDF-15-440-25+3		✓	1	1 1/2	25
	300-HDF-15-220-37+2	300-HDF-15-220-37*3	300-HDF-15-440-37+3		✓	1	1 1/2	37
16000	300-HDF-16-230-19+2	300-HDF-16-230-19*3	300-HDF-16-440-19*3		✓	1	1 1/2	19
	300-HDF-16-230-25+2	300-HDF-16-230-25*3	300-HDF-16-440-25*3		✓	1	1 1/2	25
	300-HDF-16-230-38+2	300-HDF-16-230-38*3	300-HDF-16-440-38*3		✓	1	1 1/2	38
18000	300-HDF-18-220-23+2	300-HDF-18-220-23*3	300-HDF-18-440-23+3		✓	1	1 1/2	23
	300-HDF-18-220-31+2	300-HDF-18-220-31*3	300-HDF-18-440-31+3		✓	1	1 1/2	31
	300-HDF-18-220-47+2	300-HDF-18-220-47*3	300-HDF-18-440-47+3		✓	1	1 1/2	47
20000		300-HDF-20-230-23*3+2	300-HDF-20-440-23*3		✓	1	1 1/2	23
		300-HDF-20-230-31*3+2	300-HDF-20-440-31*3		✓	1	1 1/2	31
		300-HDF-20-230-47*3+2	300-HDF-20-440-47*3		✓	1	1 1/2	47
24000		300-HDF-24-230-29*3+2	300-HDF-24-440-29*3		✓	1	1 1/2	29
		300-HDF-24-230-37*3+2	300-HDF-24-440-37*3		✓	1	1 1/2	37
		300-HDF-24-230-55*3+2	300-HDF-24-440-55*3		✓	1	1 1/2	55
30000		300-HDF-30-230-35*3+2	300-HDF-30-440-35*3		✓	1	1 1/2	35
		300-HDF-30-230-46*3+2	300-HDF-30-440-46*3		✓	1	1 1/2	46
		300-HDF-30-230-69*3+2	300-HDF-30-440-69*3		✓	1	1 1/2	69
36000		300-HDF-36-230-40*3+2	300-HDF-36-440-40*3		✓	1	1 1/2	40
		300-HDF-36-230-56*3+2	300-HDF-36-440-56*3		✓	1	1 1/2	56
		300-HDF-36-230-83*3+2	300-HDF-36-440-83*3		✓	1	1 1/2	83
42000		300-HDF-42-230-49*3+4	300-HDF-42-440-49*3+2		✓	1	1 1/2	49
		300-HDF-42-230-65*3+4	300-HDF-42-440-65*3+2		✓	1	1 1/2	65
		300-HDF-42-230-98*3+4	300-HDF-42-440-98*3+2		✓	1	1 1/2	98
48000		300-HDF-48-230-54*3+4	300-HDF-48-440-54*3+2		✓	1	1 1/2	54
		300-HDF-48-230-75*3+4	300-HDF-48-440-75*3+2		✓	1	1 1/2	75
		300-HDF-48-230-111*3+4	300-HDF-48-440-111*3+2		✓	1	1 1/2	111
60000		300-HDF-60-230-66*3+4	300-HDF-60-440-66*3+2		✓	1	1 1/2	66
		300-HDF-60-230-93*3+4	300-HDF-60-440-93*3+2		✓	1	1 1/2	93
		300-HDF-60-230-123*3+4	300-HDF-60-440-123*3+2		✓	1	1 1/2	123
75000			300-HDF-75-440-88*3+4		✓	1	1 1/2	88
100000			300-HFD-100-440-120*3+4		✓	1	1 1/2	120

### Casings: (Information) See DRAWINGS Page 15

	S	AB	C	300C	H	300H
MOUNTING CONNECTION	2" FEMALE NPT	4 1/2" OD FLANGE	3" □ 150# ANSI FLANGE	3" □ 300# ANSI FLANGE	6" □ 150# ANSI FLANGE	6" □ 300# ANSI FLANGE
FLANGE DIAMETER	-----	4 1/2"	7 1/2"	8 1/4"	11"	12 1/2"
BOLT CIRCLE DIAM.	-----	4"	6"	6 5/8"	9 1/2"	10 5/8"
BOLT HOLES	-----	8	4	8	8	12
OUTLET (Standard)	1/2"	1/2"	1"	1"	2"	2"
INLET (Standard)	1/2"	1/2"	1"	1"	2"	2"
OPT. INLET	1/2"	1/2"	1"	1"	2"	2"

Inlet, Outlet, & Optional Inlet are Full Couplings



## Casings: (Gaskets, Cap Screws, Bolts, & Nuts)

S HEATER SERIES AS, ADS			AB HEATER SERIES AF, ADF, BF, BDF			C HEATER SERIES CF, CDF			300C HEATER SERIES 300-CF, 300-CDF			H HEATER SERIES HF, HDF			300H HEATER SERIES 300-HF, 300-HDF		
2" SCH. 40 PIPE			3" SCH. 40 PIPE			3" SCH. 40 PIPE			3" SCH. 40 PIPE			6" SCH. 40 PIPE			6" SCH. 40 PIPE		
MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"	MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"	MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"	MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"	MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"	MAX. HEATER IMM. LENGTH	CASING MODEL NUMBER	"A"
12	S-12	13 1/2	11	AB-11	12 1/2	14	C-14	16	14	300C-14	16 1/2	14	H-14	16 1/2	14	300H-14	16 1/2
18	S-18	19 1/2	12	AB-12	13 1/2	16	C-16	18	16	300C-16	18 1/2	16	H-16	18 1/2	16	300H-16	18 1/2
20	S-20	21 1/2	12 1/2	AB-12 1/2	14	18	C-18	20	18	300C-18	20 1/2	18	H-18	20 1/2	18	300H-18	20 1/2
26	S-26	27 1/2	13	AB-13	14 1/2	20	C-20	22	20	300C-20	22 1/2	20	H-20	22 1/2	20	300H-20	22 1/2
28	S-28	29 1/2	18	AB-18	19 1/2	22	C-22	24	22	300C-22	24 1/2	22	H-22	24 1/2	22	300H-22	24 1/2
			20	AB-20	21 1/2	24	C-24	26	24	300C-24	26 1/2	24	H-24	26 1/2	24	300H-24	26 1/2
			24	AB-24	25 1/2	26	C-26	28	26	300C-26	28 1/2	26	H-26	28 1/2	26	300H-26	28 1/2
			30	AB-30	31 1/2	28	C-28	30	28	300C-28	30 1/2	28	H-28	30 1/2	28	300H-28	30 1/2
						30	C-30	32	30	300C-30	32 1/2	30	H-30	32 1/2	30	300H-30	32 1/2
						32	C-32	34	32	300C-32	34 1/2	32	H-32	34 1/2	32	300H-32	34 1/2
						34	C-34	36	34	300C-34	36 1/2	34	H-34	36 1/2	34	300H-34	36 1/2
						36	C-36	38	36	300C-36	38 1/2	36	H-36	38 1/2	36	300H-36	38 1/2
						38	C-38	40	38	300C-38	40 1/2	38	H-38	40 1/2	38	300H-38	40 1/2
						40	C-40	42	40	300C-40	42 1/2	40	H-40	42 1/2	40	300H-40	42 1/2
						42	C-42	46	42	300C-42	46 1/2	42	H-42	46 1/2	42	300H-42	46 1/2
						46	C-46	48	46	300C-46	48 1/2	46	H-46	48 1/2	46	300H-46	48 1/2
						48	C-48	50	48	300C-48	50 1/2	48	H-48	50 1/2	48	300H-48	50 1/2
						56	C-56	58	56	300C-56	58 1/2	56	H-56	58 1/2	56	300H-56	58 1/2
						62	C-62	64	62	300C-62	64 1/2	62	H-62	64 1/2	62	300H-62	64 1/2
						66	C-66	68	66	300C-66	68 1/2	66	H-66	68 1/2	66	300H-66	68 1/2
						70	C-70	72	70	300C-70	72 1/2	70	H-70	72 1/2	70	300H-70	72 1/2
						76	C-76	78	76	300C-76	78 1/2	76	H-76	78 1/2	76	300H-76	78 1/2
						80	C-80	82	80	300C-80	82 1/2	80	H-80	82 1/2	80	300H-80	82 1/2
						86	C-86	88	86	300C-86	88 1/2	86	H-86	88 1/2	86	300H-86	88 1/2
						88	C-88	90	88	300C-88	90 1/2	88	H-88	90 1/2	88	300H-88	90 1/2
						93	C-93	95	93	300C-93	95 1/2	93	H-93	95 1/2	93	300H-93	95 1/2
						96	C-96	98	96	300C-96	98 1/2	96	H-96	98 1/2	96	300H-96	98 1/2
						112	C-112	114	112	300C-112	114 1/2	112	H-112	114 1/2	112	300H-112	114 1/2
						123	C-123	125	123	300C-123	125 1/2	123	H-123	125 1/2	123	300H-123	125 1/2
BOLTS OR CAP SCREWS	SCREWS OR BOLTS NOT USED		USE 1/4-20-1" GR. 5 CAP SCREWS			USE 5/8-11x2 3/4" BOLTS GRADE 2			USE 3/4-10x3" BOLTS GRADE 2			3/4-10x3 1/2" BOLTS GRADE 2			3/4-10x4" BOLTS GRADE 2		
NUTS	NUTS NOT USED		NUTS NOT USED			USE 5/8-11 HEX NUTS GRADE 2			USE 3/4-10 HEX NUTS GRADE 2			USE 3/4-10 HEX NUTS GRADE 2			USE 3/4-10 HEX NUTS GRADE 2		
GASKETS	GASKET NOT USED		G-2N GASKET			G-3 GASKET			G-4 GASKET			G-5 GASKET			G-6 GASKET		

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