



Section 3

Industrial Oil Heaters

Industrial Immersion Heaters – Thread-in style and threadless V-clamp style

DC Oil Heaters

Temperature Controls

Oil Heaters



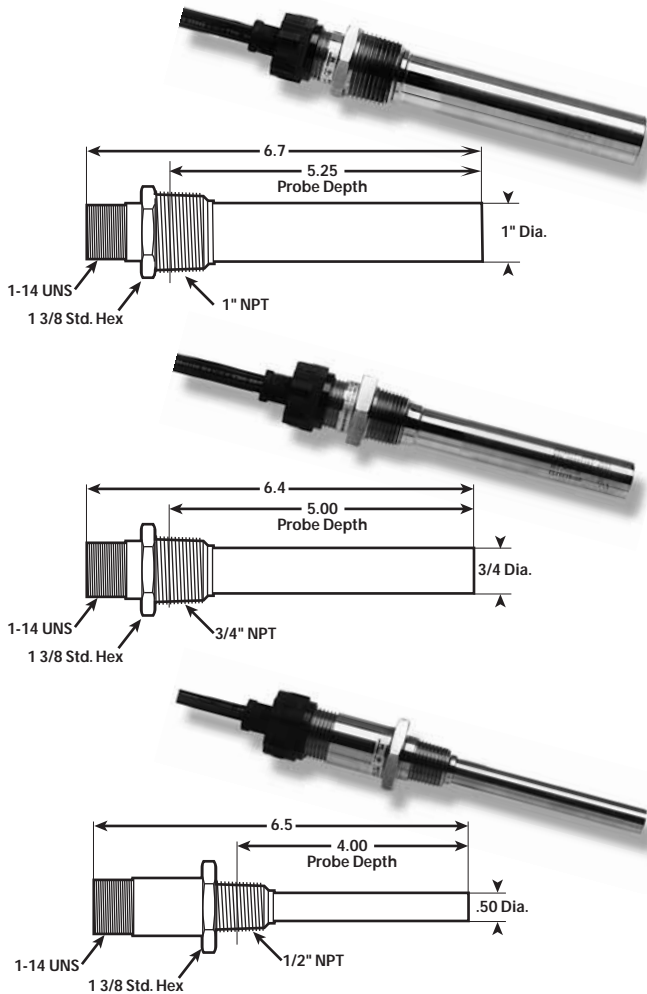
Oil Capacity	Weathertight Heater Only	Weathertight With Thermostat (see chart p. 27)	Class 1, Group D Hazardous Locations Heater Only	Volts	Watts	Amps	Watts Per Square Inch
3/8" N.P.T. THREAD WITH A 2 1/8" PROBE LENGTH							
2 Quarts or Less	OW005100-000 OW005200-000	— —	— —	120 240	50 50	.4 .2	20.0 20.0
1/2" N.P.T. THREAD WITH A 4" PROBE LENGTH							
2 Quarts to 6 Quarts	OW212100-000 OW212200-000	OW2121XX-000 OW2122XX-000	OE212100-000 OE212200-000	120 240	125 125	1.0 .5	24.6 24.6
3/4" N.P.T. THREAD WITH A 5" PROBE LENGTH							
1 Gallon to 5 Gallons	OW415100-000 OW415200-000	OW4151XX-000 OW4152XX-000	OE415100-000 OE415200-000	120 240	150 150	1.3 .6	14.6 14.6
5 Gallons to 15 Gallons	OW430100-000 OW430800-000 OW430200-000	OW4301XX-000 OW4308XX-000 OW4302XX-000	OE430100-000 OE430800-000 OE430200-000	120 208 240	300 300 300	2.6 1.1 1.2	29.3 29.3 29.3
1" N.P.T. THREAD WITH A 5 1/4" PROBE LENGTH							
1 Gallon to 5 Gallons	OW615100-000 OW615200-000	OW6151XX-000 OW6152XX-000	OE615100-000 OE615200-000	120 240	150 150	1.3 .6	10.7 10.7
5 Gallons to 15 Gallons	OW630100-000 OW630800-000 OW630200-000 OW630700-000 — —	OW6301XX-000 OW6308XX-000 OW6302XX-000 OW6307XX-000 — —	OE630100-000 OE630800-000 OE630200-000 OE630700-000 OE630300-000 OE630400-000	120 208 240 277 380 480	300 300 300 300 300 300	2.6 1.6 1.2 1.1 1.0 .6	21.4 21.4 21.4 21.4 21.4 21.4
15 Gallons to 30 Gallons	OW650100-000 OW650800-000 OW650200-000 OW650700-000 — —	OW6501XX-000 OW6508XX-000 OW6502XX-000 OW6507XX-000 — —	OE650100-000 OE650800-000 OE650200-000 OE650700-000 OE650300-000 OE650400-000 OE650500-000	120 208 240 277 380 480 575	500 500 500 500 500 500 500	4.1 2.4 2.0 1.8 1.3 1.0 0.8	35.7 35.7 35.7 35.7 35.7 35.7 35.7

NOTES: Weathertight heaters are standard with a 4 ft. oil and heat resistant power cord - no plug.

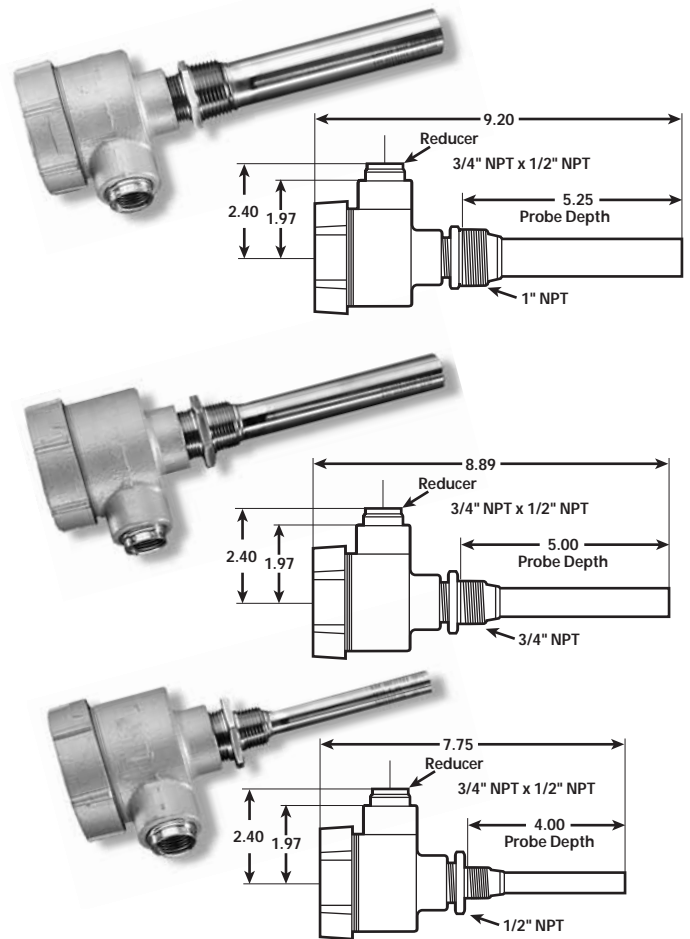
Class 1, Group D heaters are standard with 18" of lead wire for connection to the power leads in an approved splice box.

For Class 1, Group D thermostats, see page 32.

heater only



heater only



For Class 1, Group D thermostats, see page 32.

Heaters with Y-type harness and thermostat (see page 32 for drawings with dimensions)

Use a thermostat with all lube oil heaters to protect the oil from overheating if the heater is energized while the engine is hot or running.

Lube oil heaters must always be installed in the sump with the entire heater submerged below the oil level at all times.



120 Volt and 240 Volt are complete with a 3-prong plug.

HOTSTART Assembled Lube Oil Heaters eliminate the need for splice boxes or field wiring of the thermostat and heater.

Always mount the thermostat above and to one side of the heater for the most efficient control.

OIL HEATERS WITH THERMOSTATS

To specify temperature range of thermostat, insert numerical code from chart in place of the XX in model number.

Example:

Desired Temperature Range: 100° - 120°
 Catalog Number: Model OW2121XX-000
 Order as: Model OW212110-000

NUMERICAL CODE	TEMPERATURE RANGE		SWITCH CAPACITY	THREAD SIZE
	On	Off		
06	60°F	80°F	120V - 15 Amps	1/2" N.P.T.
08	80°F	100°F	208V - 10 Amps	
10	100°F	120°F	240V - 10 Amps	
12	120°F	140°F	277V - 10 Amps	

Industrial Immersion Heaters

For: Lube Oils,
Hydraulics and
Diesel Fuels

2" Screw Plug
With Fixed-Setting,
Built-In Thermostat (Pg. 29)
or Adjustable
Thermostat (Pg. 31)

**Weather Tight
NEMA 4 Enclosure**

Models for larger capacities than shown are available. Call factory.

Oil Capacity	HIGH LIMIT THERMOSTAT CONTROL SETTING			Volts	Watts	Amps	Watts Sq. In.
	On 60° F / Off 80° F	On 80° F / Off 100° F	On 100° F / Off 120° F				
SINGLE PHASE — 2" N.P.T. WITH A 12" PROBE LENGTH							
30 to 45 Gallons	E01011W-156A-00	E01011W-158A-00	E01011W-151A-00	120	1000	8.3	17.0
	E01081W-156A-00	E01081W-158A-00	E01081W-151A-00	208	1000	4.8	17.0
	E01021W-156A-00	E01021W-158A-00	E01021W-151A-00	240	1000	4.2	17.0
	E01071W-156A-00	E01071W-158A-00	E01071W-151A-00	277	1000	3.6	17.0
45 to 60 Gallons	E01511W-156A-00	E01511W-158A-00	E01511W-151A-00	120	1500	12.5	17.0
	E01581W-156A-00	E01581W-158A-00	E01581W-151A-00	208	1500	7.2	17.0
	E01521W-156A-00	E01521W-158A-00	E01521W-151A-00	240	1500	6.3	17.0
	E01571W-156A-00	E01571W-158A-00	E01571W-151A-00	277	1500	5.4	17.0
THREE PHASE — 2" N.P.T. WITH A 12" PROBE LENGTH							
30 to 45 Gallons	E01083W-106A-00	E01083W-108A-00	E01083W-101A-00	208	1000	2.8	11.0
	E01023W-106A-00	E01023W-108A-00	E01023W-101A-00	240	1000	2.4	11.0
	E01033W-106A-00	E01033W-108A-00	E01033W-101A-00	380	1000	1.5	11.0
45 to 60 Gallons	E01583W-156A-00	E01583W-158A-00	E01583W-151A-00	208	1500	4.2	17.0
	E01523W-156A-00	E01523W-158A-00	E01523W-151A-00	240	1500	3.6	17.0
	E01533W-156A-00	E01533W-158A-00	E01533W-151A-00	380	1500	2.3	17.0
	E01543W-156A-00	E01543W-158A-00	E01543W-151A-00	480	1500	1.8	17.0
SINGLE PHASE — 2" N.P.T. WITH A 18" PROBE LENGTH							
60 to 90 Gallons	E02011W-156A-00	E02011W-158A-00	E02011W-151A-00	120	2000	16.7	14.0
	E02081W-156A-00	E02081W-158A-00	E02081W-151A-00	208	2000	9.6	14.0
	E02021W-156A-00	E02021W-158A-00	E02021W-151A-00	240	2000	8.4	14.0
	E02071W-156A-00	E02071W-158A-00	E02071W-151A-00	277	2000	7.2	14.0
	E02031W-156A-00	E02031W-158A-00	E02031W-151A-00	380	2000	5.3	14.0
	E02041W-156A-00	E02041W-158A-00	E02041W-151A-00	480	2000	4.2	14.0
THREE PHASE — 2" N.P.T. WITH A 18" PROBE LENGTH							
60 to 90 Gallons	E02083W-156A-00	E02083W-158A-00	E02083W-151A-00	208	2000	5.6	14.0
	E02023W-156A-00	E02023W-158A-00	E02023W-151A-00	240	2000	4.8	14.0
	E02033W-156A-00	E02033W-158A-00	E02033W-151A-00	380	2000	3.0	14.0
	E02043W-156A-00	E02043W-158A-00	E02043W-151A-00	480	2000	2.4	14.0

Class I, Group D heaters with thermostat for hazardous locations also available.

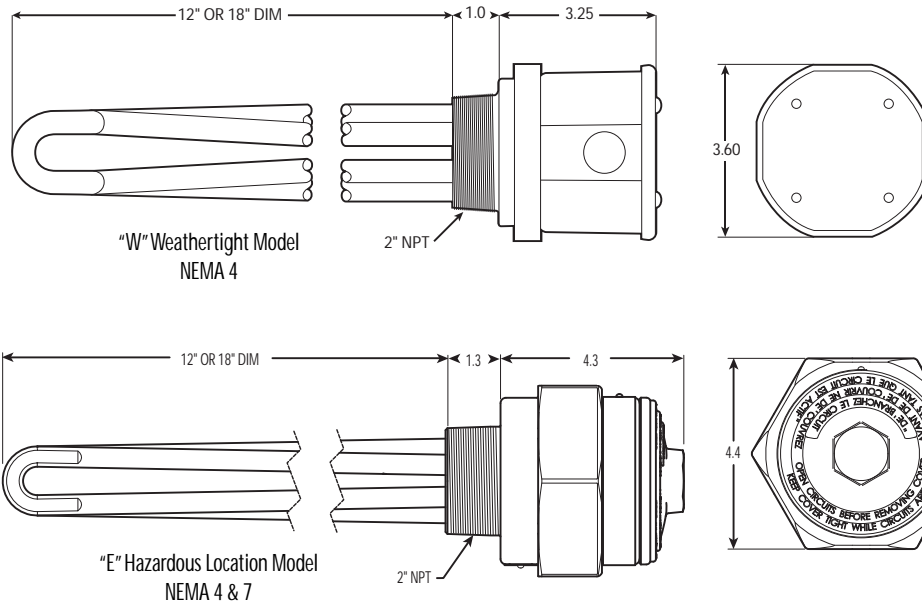
Substitute the letter "W" in part number with the letter "E" to specify Class I, Group D heaters.

Industrial Immersion Heaters are also available for coolants and other process heating. Call factory.

HOTSTART immersion heaters are complete with a fixed-setting, built-in thermostat (shown below). All models are also available with an adjustable thermostat (pg. 31). Ideal for heating hydraulic reservoirs on construction equipment and the sumps of large industrial engines.

Industrial Immersion Heaters

2" Screw Plug



"W" Weathertight Model NEMA 4

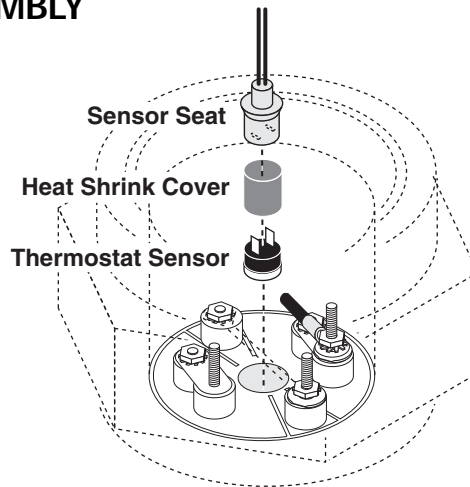


"E" Hazardous Location Model NEMA 4 & 7

FIXED THERMOSTAT ASSEMBLY

Thermostat assembly shown in "EP" housing.

ELECTRICAL RATING		
15 Amps	at	120 VAC
10 Amps	at	240 VAC
10 Amps	at	277 VAC



NOTES:

On applications where level of fluid is subject to change, a liquid level switch mounted a minimum of 3 to 4 inches above element is recommended. **Liquid level switch is not included with heater.**

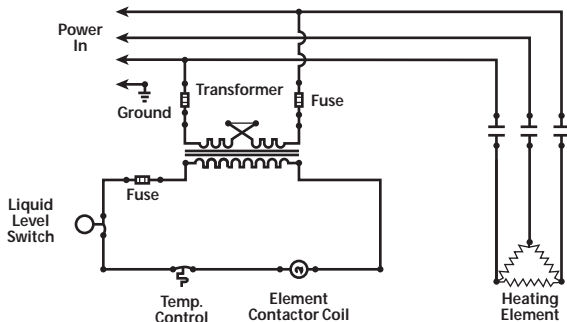
All 380 Volt and 480 Volt heaters must be used in conjunction with contactor and control transformer.

All three phase heaters must be used with a contactor. See pages 37 & 38.

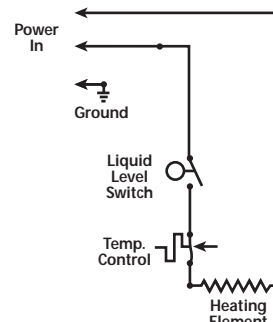
Higher or lower temperature ranges are available. Consult HOTSTART.

TYPICAL WIRING DIAGRAMS

Three phase and single phase above 277 VAC



Single phase 277 VAC and below



Industrial Immersion Heaters

V-Clamp Threadless Design

*For: Lube Oils,
Hydraulics and
Diesel Fuels*

*With Fixed-Setting,
Built-In Thermostat (Pg. 29)
or Adjustable
Thermostat (Pg. 31)*

*Weather Tight
NEMA 4 Enclosure*

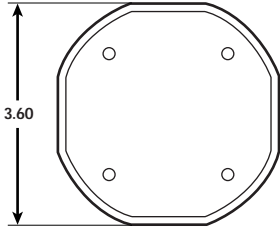
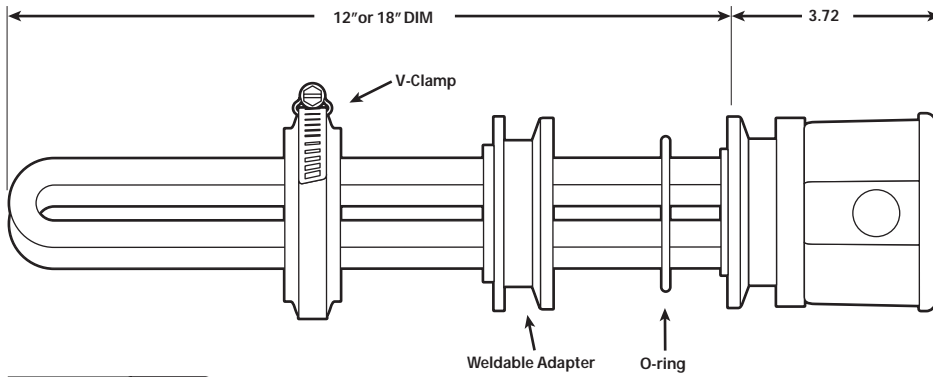
Models for larger capacities than shown are available. Call factory.

Oil Capacity	HIGH LIMIT THERMOSTAT CONTROL SETTING			Volts	Watts	Amps	Watts Sq. In.
	On 60° F / Off 80° F	On 80° F / Off 100° F	On 100° F / Off 120° F				
SINGLE PHASE — WITH A 12" PROBE LENGTH							
30 to 45 Gallons	E01011W-156V-00	E01011W-158V-00	E01011W-151V-00	120	1000	8.3	17.0
	E01081W-156V-00	E01081W-158V-00	E01081W-151V-00	208	1000	4.8	17.0
	E01021W-156V-00	E01021W-158V-00	E01021W-151V-00	240	1000	4.2	17.0
	E01071W-156V-00	E01071W-158V-00	E01071W-151V-00	277	1000	3.6	17.0
45 to 60 Gallons	E01511W-156V-00	E01511W-158V-00	E01511W-151V-00	120	1500	12.5	17.0
	E01581W-156V-00	E01581W-158V-00	E01581W-151V-00	208	1500	7.2	17.0
	E01521W-156V-00	E01521W-158V-00	E01521W-151V-00	240	1500	6.3	17.0
	E01571W-156V-00	E01571W-158V-00	E01571W-151V-00	277	1500	5.4	17.0
THREE PHASE — WITH A 12" PROBE LENGTH							
30 to 45 Gallons	E01083W-106V-00	E01083W-108V-00	E01083W-101V-00	208	1000	2.8	11.0
	E01023W-106V-00	E01023W-108V-00	E01023W-101V-00	240	1000	2.4	11.0
	E01033W-106V-00	E01033W-108V-00	E01033W-101V-00	380	1000	1.5	11.0
45 to 60 Gallons	E01583W-156V-00	E01583W-158V-00	E01583W-151V-00	208	1500	4.2	17.0
	E01523W-156V-00	E01523W-158V-00	E01523W-151V-00	240	1500	3.6	17.0
	E01533W-156V-00	E01533W-158V-00	E01533W-151V-00	380	1500	2.3	17.0
	E01543W-156V-00	E01543W-158V-00	E01543W-151V-00	480	1500	1.8	17.0
SINGLE PHASE — WITH A 18" PROBE LENGTH							
60 to 90 Gallons	E02011W-156V-00	E02011W-158V-00	E02011W-151V-00	120	2000	16.7	14.0
	E02081W-156V-00	E02081W-158V-00	E02081W-151V-00	208	2000	9.6	14.0
	E02021W-156V-00	E02021W-158V-00	E02021W-151V-00	240	2000	8.4	14.0
	E02071W-156V-00	E02071W-158V-00	E02071W-151V-00	277	2000	7.2	14.0
	E02031W-156V-00	E02031W-158V-00	E02031W-151V-00	380	2000	5.3	14.0
	E02041W-156V-00	E02041W-158V-00	E02041W-151V-00	480	2000	4.2	14.0
THREE PHASE — WITH A 18" PROBE LENGTH							
60 to 90 Gallons	E02083W-156V-00	E02083W-158V-00	E02083W-151V-00	208	2000	5.6	14.0
	E02023W-156V-00	E02023W-158V-00	E02023W-151V-00	240	2000	4.8	14.0
	E02033W-156V-00	E02033W-158V-00	E02033W-151V-00	380	2000	3.0	14.0
	E02043W-156V-00	E02043W-158V-00	E02043W-151V-00	480	2000	2.4	14.0

Class I, Group D heaters with thermostat for hazardous locations also available.

Substitute the letter "W" in part number with the letter "E" to specify Class I, Group D heaters.

Industrial Immersion Heaters are also available for coolants and other process heating. Call factory.



NOTE: Replacement elements supplied with "O" Ring only. For new installations, order kit - P/N VC-SK.

Kit Includes:

- 1 - steel weldable adapter
- 1 - worm-drive V-Clamp
- 1 - "O" Ring

V-Clamp Industrial Immersion Heater

Threadless Design

HOTSTART immersion heaters are complete with a fixed-setting, built-in thermostat (shown on page 29). All models are available with an adjustable thermostat (shown below). Consult factory for model number.

Ideal for heating hydraulic reservoirs on construction equipment and the sumps of large industrial engines.

ADJUSTABLE THERMOSTAT ASSEMBLY

TEMPERATURE RANGE	
OFF	70°F to 210°F
ELECTRICAL RATING	
30 Amps	at 125 VAC
30 Amps	at 240 VAC
30 Amps	at 277 VAC
20 Amps	at 480 VAC
Nominal thermal differential is 8°F	



"W" Weathertight Model
NEMA 4



"E" Hazardous Location Model
NEMA 4 & 7

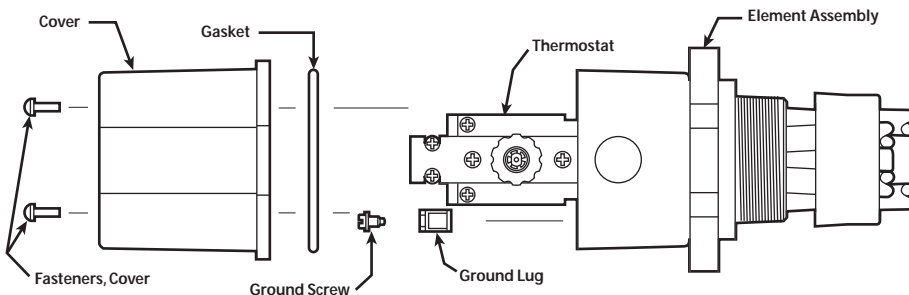
NOTES:

On applications where level of fluid is subject to change, a liquid level switch mounted a minimum of 3 to 4 inches above element is recommended. **Liquid level switch is not included with heater.**

All 380 Volt and 480 Volt heaters must be used in conjunction with contactor and control transformer.

All three phase heaters must be used with a contactor. See pages 37 & 38.

Higher or lower temperature ranges are available. Consult HOTSTART.



Call HOTSTART for complete model number featuring adjustable thermostat.

DC Oil Heaters

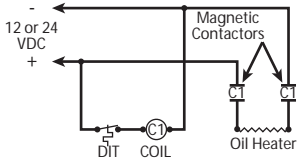
12 and 24 volt

12 VOLT/24 VOLT DC CONTROL BOXES

25 Amps Maximum	12V	JBMC330DC-12V JBMC330DC-24V
	24V	



When used with a thermostat control, all DC oil heaters must use a DC relay



Oil Capacity	Volts	Watts	HOTSTART Model Numbers			Amps	Watts Per Square Inch
			1/2" N.P.T. With a 4" Probe Length	3/4" N.P.T. With a 4 7/8" Probe Length	1" N.P.T. With a 5 3/8" Probe Length		
2 Quarts or Less	12	75	OW207900-012	OW407900-012	—	6.3 3.1	1/2" are all 14.7 WSI 3/4" are all 7.3 WSI
	24	75	OW207900-024	OW407900-024	—		
2 to 6 Quarts	24	125	OW212900-024	—	—	5.2	24.6 WSI
1 to 5 Gallons	12	150	—	OW415900-012	OW615900-012	12.5 6.3	3/4" are all 14.6 WSI 1" are all 10.7 WSI
	24	150	—	OW415900-024	OW615900-024		
5 to 15 Gallons	12	300	—	—	OW630900-012	25.0 12.5	3/4" are all 29.3 WSI 1" are all 21.4 WSI
	24	300	—	OW430900-024	OW630900-024		
15 to 30 Gallons	24	500	—	—	OW650900-024	20.8	35.7 WSI

Please see page 27 for photos and technical drawings of "OW" and "OE" style oil heaters.

12 Volt and 24 Volt DC oil heaters can be powered directly from the battery, but will drain the battery very rapidly unless charged by an alternator or generator.

NOTE: Heater amperage as shown in the table above will determine the life of the battery — (Amps x Hours = Amp hours).

Example: A 12.5 Amp heater will completely drain a 100 Amp-hour battery in 8 hours. $\frac{100 \text{ Amp-hour}}{12.5 \text{ Amp}} = 8 \text{ Hours}$

Temperature Controls



Weathertight

Weathertight models are furnished with a 3 ft. 16/3 HPN power cord. Class I, Group D model is furnished with 18" of lead wire for connection to the power leads in an approved splice box.



Class I, Group D Hazardous Location

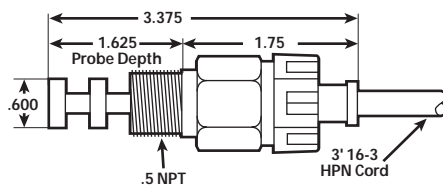
Lube oil temperature controls hold lube oil at the desired temperature.

If the heater is energized while the engine is hot or running, Kim Hotstart recommends using thermostats with all lube oil heaters to protect the oil from overheating.

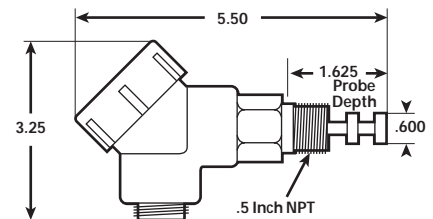
The sensing unit can be changed without draining the sump.



Weathertight Model Number	Class I, Group D Model Number	Temp. Range		Thread Size	Switch Capacity
		On	Off		
DIT68	DIT68EP	60°F	80°F	1/2" N.P.T.	120v - 15 amps 208v - 10 amps 240v - 10 amps 277v - 10 amps 12v DC } Pilot Duty Only 24v DC }
DIT810	DIT810EP	80°F	100°F	1/2" N.P.T.	
DIT1012	DIT1012EP	100°F	120°F	1/2" N.P.T.	
DIT1214	DIT1214EP	120°F	140°F	1/2" N.P.T.	



Weathertight Model Dimensions



Class 1, Group Model Dimensions