

# DURA-POWER XL INDUSTRIAL ELECTRIC WATER HEATERS

DVE 150A through 2500A

DHE 150A through 2500A



- A.O. Smith's new propriety advanced electronic water heater control provides precise  $\pm 1^\circ\text{F}$  temperature control, which is ideal for industrial and food service applications where accurate hot water temperatures are needed.
- Animated icons display detailed operational and diagnostic information. Fault or alert messages appear if an operational issue occurs.
- Factory standard on board low water cut-off uses a remote electronic immersion type probe to prevent energizing of the elements in the event of low water condition and eliminates accidental dry firing.
- Progressive modulating matches number of elements to current load conditions. Rotates and lead lags element loads to provide long life and equal wear.
- Control system automatically lowers the operating set point by a programmed value during user defined time periods. Seven-day clock may be programmed for night set back and or weekend shutdown to reduce operating cost and save money.
- Modbus/BACnet compatible with optional Gateway interface.
- Standard Permaglas glass lining. Exclusive process provides superior protection against corrosion in varying water conditions. Optional cement and epoxy linings.
- All models are constructed to the requirements of ASME and are available in 125 and 150 psi working pressures (125 psi working pressure - standard).
- Heavy-duty elements have incoloy sheathing: provide excellent protection against oxidation and scaling. The input ranges from 15kW to 900kW (see chart).
- Control and power circuit fusing to meet N.E.C.
- Meets the standby loss requirements of the U.S. Department of Energy, NRC and current edition of ASHRAE/IES 90.1.
- Heavy duty contactors, UL rated for 100,000 cycles.
- Color-coded circuitry for easier servicing
- Anode rods for maximum corrosion protection
- Standard power supplies include 380V, 400 V, 415 V, 3 phase 50/60 Hz.
- Factory-installed terminal block(s): one terminal block up to 500 MCM cable (ca 200kW/290 amps on 400V), two or more terminal blocks if kW exceeds 200kW or 290 amps.
- Temperature and pressure relief valve, supplied but not installed
- Can be specified with optional water to water or steam to water heat exchangers. Both single and double wall heat exchangers are available. Complete control packages can be factory-installed for hook-up and run capability.
- Vertical models DVE: supplied with 3 x 4" inspection opening. Horizontal models: 4 x 6" inspection opening. Optional 12 x 16 "manhole on tanks larger than 250 gallons.
- Warranty: 3 years on the tank, 1 year on parts. For details, please refer to the warranty sheet on the website



## SAMPLE SPECIFICATION

The heater(s) shall be A. O. Smith Industrial Electric Water Heater Model Number \_\_\_\_\_ or an approved equal. Heater(s) shall be rated at \_\_\_\_\_ kW, \_\_\_\_\_ V, \_\_\_\_\_ phase, 50/60 cycle AC. The heater shall be for (vertical/horizontal) installation with lifting lug access and channel skid base on all tanks above 200 gallons. Vessel shall be constructed to Section IV of the ASME Code for 125 psi working pressure. Vessel shall be glass-lined with anodic protection. Entire vessel and electrical controls are to be encased in a sheet metal enclosure with baked enamel finish. Tank to be insulated with foam or fiberglass insulation, meeting latest ASHRAE/IES requirements. Enclosure to have hinged locking door over electric controls. There shall be \_\_\_\_\_ individually replaceable heavy duty Incoloy sheathed heating elements each complete with prewired terminal leads. These elements will be switched by magnetic contactors which are operated by a 120V fused control circuit protected by manual reset high limit. Control circuit is activated by a master pilot switch and electronic low water cutoff. This control shall prevent the entire electrical load from being switched on instantaneously. The control shall have even load progressive sequencing which utilizes the "first on, first off" principle thereby equalizing the operating time of heating elements and contactors. Each magnetic contactor and heating element circuit will be protected by a maximum of 60 amp cartridge type fuses with a minimum of 100,000 amp interrupting capacity. The entire water heating package shall be prewired to solderless terminal lugs, factory tested, complete with a CSA Certified and ASME Rated T&P relief valve and bear the Underwriters' Laboratories label. Heater(s) shall have a 3-year limited warranty as outlined in the written warranty. Fully illustrated instruction manual included. Water heater unit(s) shall be compatible with building management systems using Modbus or BACnet with factory supplied gateway.

Model number	Max. kW	Gallon capacity	Dimensions in inches				Water connection		Shipping weight (lbs)
			A	B	C	D	Inlet openings	Outlet openings	
Vertical round electric storage heater									
DVE-150A	144	150	65-1/2	32	38-3/4	11-3/4	1-1/2	1-1/2	650
DVE-200A	180	200	78	32	38-3/4	11-3/4	1-1/2	1-1/2	750
DVE-250A	216	250	92	34	40-3/4	19-1/4	1-1/2	1-1/2	1,165
DVE-300A	270	300	80	40	46-3/4	20-3/4	2	2	1,350
DVE-400A	324	400	80	46	52-3/4	22-1/4	2	2	1,590
DVE-500A	396	500	92	46	52-3/4	22-1/4	2	2	1,700
DVE-530A	396	530	90	52	60-3/4	24-1/4	2	2	1,900
DVE-600A	396	600	92	52	60-3/4	24-1/4	2-1/2	2-1/2	2,010
DVE-800A	396	750	104	52	60-3/4	24-1/4	2-1/2	2-1/2	2,450
DVE-1000A	396	950	128	52	60-3/4	24-1/4	2-1/2	2-1/2	3,160
Vertical square electric storage heater									
DVE-1250A	900	1,250	132-1/2	52	61-1/2	23-1/4	3	3	3,560
DVE-1500A	900	1,500	128-1/2	70-1/2	70-1/2	25-1/4	3	3	4,120
DVE-2000A	900	2,000	124-1/2	78-1/2	78-1/2	27	3	3	4,350
DVE-2500A	900	2,500	146-1/2	82-1/2	82-1/2	29	3	3	5,750
Horizontal square electric storage heater									
DHE-150A	144	150	37	68-1/2	34-1/4	12	2	2	1,180
DHE-200A	180	200	37	78	34-1/4	12	2	2	1,370
DHE-250A	225	250	39	90-1/4	36-1/4	13	2	2	1,450
DHE-300A	270	300	45	78-1/4	42-1/4	14-3/4	2	2	1,530
DHE-400A	324	400	52	78-1/4	48-1/4	16	2	2	1,750
DHE-500A	450	500	52	90-3/4	48-1/4	16	2	2	1,860
DHE-600A	540	600	58	90-3/4	54-1/4	13-1/2	2-1/2	2	2,340
DHE-800A	720	750	58	102-1/4	54-1/4	13-1/2	2-1/2	2	2,850
DHE-1000A	900	950	58	126-1/4	54-1/4	13-1/2	2-1/2	2	3,040
DHE-1250A	900	1,250	64	130-1/4	60-1/4	15	3	3	3,750
DHE-1500A	900	1,500	70	126-1/4	66-1/4	16	3	3	4,340
DHE-2000A	900	2,000	82	123-1/4	78-1/4	14	3	3	4,580
DHE-2500A	900	2,500	82	144-1/4	78-1/4	16-1/2	3	3	6,060

Inspection opening on vertical tanks: 3 x 4 inch

Inspection opening on horizontal tanks: 4 x 6 inch

Optional: manhole 12 x 16 inch on tanks above 200 gallons

kW input	LPH 50°C rise	GPH 90°F rise	No. of elements	Min. no. of contractors	Control staging steps	Three phase				
						240V	380V	400V	415V	480V
15	258	69	1	1	1	36	23	22	21	18
18	310	83	1	1	1	43	27	26	25	22
24	413	110	2	1	1	58	36	35	33	29
30	517	138	2	1	1	72	46	43	42	36
36	620	166	2	2	2	87	55	52	50	43
45	775	207	3	2	2	108	68	65	63	54
54	930	248	3	2	2	130	82	78	75	65
60	1.033	276	4	2	2	144	91	87	83	72
72	1.240	331	4	3	3		109	104	100	87
75	1.292	345	5	3	3		114	108	104	90
90	1.550	414	5	3	3		137	130	125	108
105	1.808	483	7	4	4		160	152	146	126
108	1.860	497	6	4	4		164	156	150	130
120	2.066	552	8	4	4		182	173	167	144
135	2.325	621	9	5	5		205	195	188	162
144	2.480	662	8	5	5		219	208	200	173
150	2.583	690	10	5	5		228	217	209	180
162	2.790	745	9	6	6		246	234	225	195
180	3.100	828	10	6	6		273	260	250	217
198	3.410	911	11	7	7		301	286	275	238
210	3.616	966	14	7	7		319	303	292	253
216	3.720	994	12	8	8		328	312	301	260
225	3.875	1.035	15	8	8		342	325	313	271
234	4.029	1.076	13	8	8		356	338	326	281
240	4.133	1.104	16	8	8		365	346	334	289
252	4.339	1.159	14	9	9		383	364	351	303
270	4.649	1.242	15	9	9		410	390	376	325
288	4.959	1.325	16	10	10		438	416	401	346
300	5.166	1.380	20	10	10		456	433	417	361
306	5.269	1.408	17	11	11		465	442	426	368
324	5.579	1.490	18	11	11		492	468	451	390
330	5.683	1.518	22	11	11		501	476	459	397
342	5.889	1.573	19	12	12		520	494	476	411
360	6.199	1.656	20	12	12		547	520	501	433
378	6.509	1.739	21	13	13		574	546	526	455
390	6.716	1.794	26	13	13		593	563	543	469
396	6.819	1.822	22	14	14		602	572	551	476
414	7.129	1.904	23	14	14		629	598	576	498
432	7.439	1.987	24	15	15		656	624	601	520
450	7.749	2.070	30	15	15		684	650	626	541

### Tank lining options

- Cement: a special formulation of cement providing excellent corrosion protection. Available on 250 gallon and larger tanks.
- Epoxy: a solventless two component epoxy lining available on 250 gallon and larger tanks.

### Special construction options

- Manhole 12 x 16 inch for tank above 200 gallons storage capacity.
- 150 PSI working pressure (Must be specified at time of order).

### Other optional features

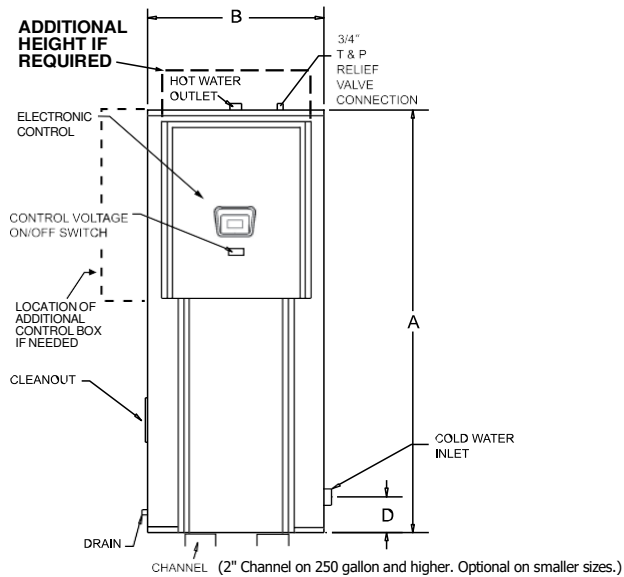
- Horizontal or vertical. See specifications, most gallon capacities may be obtained in vertical or horizontal construction.
- Factory-installed dial-type pressure gauge

- Hot water generating tube heat exchangers. Custom dual energy source units with heating units and control trim and can be built to design specifications on a special order basis for steam or boiler water applications. Consult factory or Hot Water Generator specification sheets for tube bundle sizing information and control options. Allows for remote connection to building demand limiter or other functions.
- Safety door interlock. Prevents opening of control panel door when heater power supply is on.

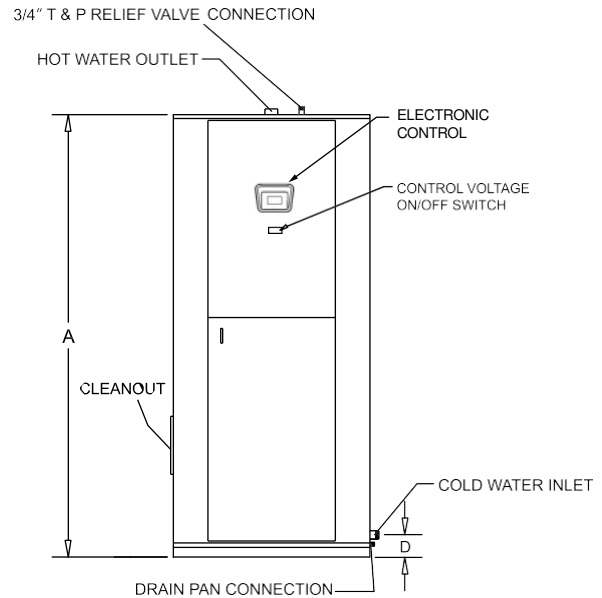
### Control options

- Pilot lights and switches. Denotes heating stage(s) in operation. Up to one light per contactor is available. A simple means of load control allows all or part of unit input to be controlled manually. Up to one switch per contactor is available.
- BACnet or Modbus interface module (specify ethernet or serial connection)

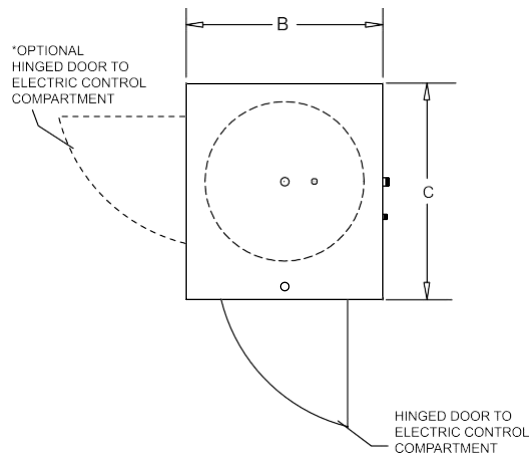
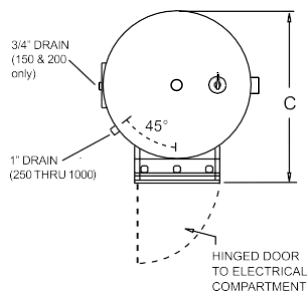
## **Vertical round models 150-1000**



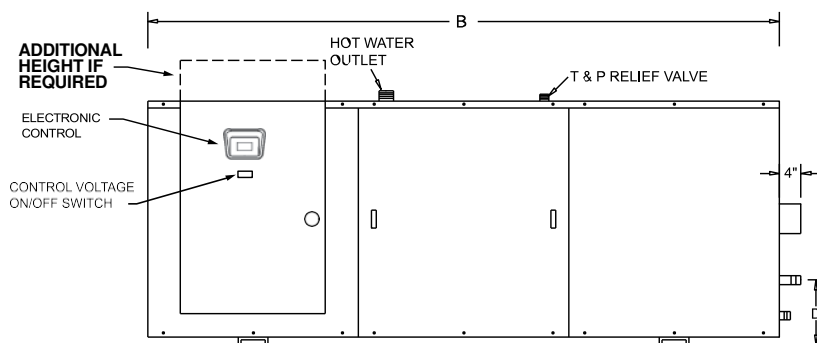
## **Vertical square models 1250-2500**



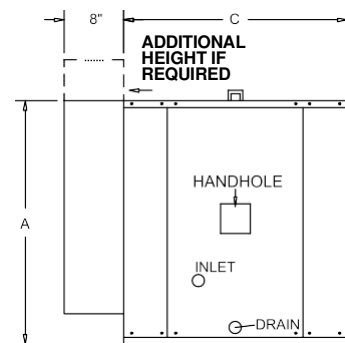
Extra height for inputs above 72kW



## **Horizontal models**



A & D ELEVATION FROM FINISHED FLOOR



END VIEW

EXTRA PANEL BOX MAY BE NECESSARY FOR INPUTS HIGHER THAN 72KW. CONSULT FACTORY