COMMERCIAL ELECTRIC WATER HEATERS

DURA-POWER™ XI
COMMERCIAL ELECTRIC

ADVANCED ELECTRONIC CONTROL
A.O. Smith’s new propriety electronic water heater control, provides precise + or - 1°F temperature control, that is ideal for industrial and food service applications where accurate hot water temperatures are needed.

EASY-TO-READ TEXT
• Animated icons display detailed operational and diagnostic information. Fault or alert messages appear if an operational issue occurs.

LOW WATER CUT OFF
• 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.

ECONOMY MODE OPERATION
• 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.

BMS COMPATIBLE
• Modbus/BACnet compatible with optional Gateway interface. Call 888 WATER02 for more information.

PERMAGLAS® GLASS LINING IS STANDARD
• Exclusive process provides superior protection against corrosion in varying water conditions. Cement and Epoxy linings are optional.

ASME CODE CONSTRUCTION
• All models are constructed to the requirements of ASME and are available in 125, 150 and 160 psi working pressures (125 psi working pressure - standard). Consult factory for ASME code tanks with greater or lesser working pressures and special configurations or materials.

INCOLOY IMMERSION HEATERS
• Heavy-duty elements have Incoloy sheathing; provide excellent protection against oxidation and scaling. The input ranges from 15kW to 900kW (see accompanying chart).

FUSING
• Control and power circuit fusing to meet N.E.C.

COMPLIANCE
• Meets the standby loss requirements of the U.S. Department of Energy, NRCan and current edition of ASHRAE/IES 90.1.

MAGNETIC CONTACTOR(S)
• Heavy duty UL rated for 100,000 cycles.

OTHER STANDARD FEATURES
• Color-coded circuitry for easier servicing
• Anode rods for maximum corrosion protection
• Standard voltages include 208, 240, 380, 400, 415, 480, 600 volt single or three-phase
• International voltages available (consult factory)
• Factory-installed terminal block(s)
• Temperature and pressure relief valve, supplied but not installed

OPTIONAL DUAL-ENERGY SOURCE CAPABILITY
• Provides emergency back up energy source or winter/summer boiler operation. 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.

THREE YEAR LIMITED WARRANTY
• For complete warranty information consult written warranty or go to hotwater.com

Attention: Significant changes have been made to some models. Please note that this spec sheet refers specifically to models manufactured in Lebanon, TN.
**COMMERCIAL ELECTRIC WATER HEATERS**

**Vertical Round Models 150-1000**

- **ADDITIONAL HEIGHT IF REQUIRED**
- **3/4" T & P RELIEF VALVE CONNECTION**
- **HOT WATER OUTLET**
- **COLD WATER INLET**
- **DRAIN**
- **COLD WATER INLET**
- **CLEANOUT**
- **CONTROL VOLTAGE ON/OFF SWITCH**
- **LOCATION OF ADDITIONAL CONTROL BOX IF NEEDED**
- **ELECTRONIC CONTROL**
- **3/4" P & T RELIEF VALVE CONNECTION**
- **HOT WATER OUTLET**
- **COLD WATER INLET**
- **DRAIN**
- **COLD WATER INLET**
- **CLEANOUT**
- **CONTROL VOLTAGE ON/OFF SWITCH**
- **LOCATION OF ADDITIONAL CONTROL BOX IF NEEDED**
- **ELECTRONIC CONTROL**

**Vertical Square Models 1250-2500**

- **3/4" T & P RELIEF VALVE CONNECTION**
- **HOT WATER OUTLET**
- **COLD WATER INLET**
- **DRAIN PAN CONNECTION**
- **CLEANOUT**
- **CONTROL VOLTAGE ON/OFF SWITCH**
- **LOCATION OF ADDITIONAL CONTROL BOX IF NEEDED**
- **ELECTRONIC CONTROL**

**Location of Additional Box for Dual Box Models**

- *(2" Channel on 150 gallon and higher. Optional on smaller sizes.)*

*An oversized control panel may be required on models with inputs above 72 kW. Consult the factory for specific details.*

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**Horizontal Models**

- **ADDITIONAL HEIGHT IF REQUIRED**
- **HOT WATER OUTLET**
- **T & P RELIEF VALVE**
- **ELECTRONIC CONTROL**
- **CONTROL VOLTAGE ON/OFF SWITCH**

**A & D ELEVATION FROM FINISHED Floor**

*An oversized control panel may be required on models with inputs above 72 kW. An oversized control panel may increase the width and depth of the square jacket by up to 2".*

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**Extra Panel Box May Be Necessary for Inputs Higher Than 72kW. Consult Factory**
## Vertical Round Electric Storage Heaters

<table>
<thead>
<tr>
<th>Model Number*</th>
<th>Max. KW</th>
<th>Gallon Capacity</th>
<th>Dimensions in Inches</th>
<th>Water Connection</th>
<th>Shipping Weight (lbs)</th>
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</thead>
<tbody>
<tr>
<td>DVE-150A</td>
<td>144</td>
<td>150 65-1/2&quot;</td>
<td>32&quot; 38-3/4&quot;</td>
<td>7-3/4&quot;</td>
<td>1-1/2&quot;</td>
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<tr>
<td>DVE-200A</td>
<td>180</td>
<td>200 78&quot;</td>
<td>32&quot; 38-3/4&quot;</td>
<td>7-3/4&quot;</td>
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<td>250 92&quot;</td>
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<td>270</td>
<td>300 80&quot;</td>
<td>40&quot; 46-3/4&quot;</td>
<td>21&quot;</td>
<td>2&quot;</td>
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<tr>
<td>DVE-400A</td>
<td>324</td>
<td>400 92&quot;</td>
<td>46&quot; 52-3/4&quot;</td>
<td>22-1/2&quot;</td>
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<tr>
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<td>500 92&quot;</td>
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<tr>
<td>DVE-600A</td>
<td>396</td>
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<tr>
<td>DVE-800A</td>
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<td>750 104&quot;</td>
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<tbody>
<tr>
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<td>900</td>
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<tr>
<td>DVE-1500A</td>
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<td>78-1/2&quot;</td>
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<tr>
<td>DVE-2000A</td>
<td>900</td>
<td>2,500 146-1/2&quot;</td>
<td>82-1/2&quot;</td>
<td>29&quot;</td>
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## Horizontal Square Electric Storage Heaters

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<tr>
<th>Model Number*</th>
<th>Max. KW</th>
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<td>DHE-150A</td>
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<td>150 37&quot;</td>
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<tr>
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<tr>
<td>DHE-250A</td>
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<td>250 39&quot;</td>
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<tr>
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<td>300 45&quot;</td>
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<td>36-1/4&quot;</td>
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<td>16&quot;</td>
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<tr>
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<td>16&quot;</td>
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<td>600 58&quot;</td>
<td>126-1/4&quot;</td>
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For higher inputs consult the factory.
TANK LININGS 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

“12 X 16” MANHOLE – AVAILABLE ON 250 GALLON AND ABOVE

150 OR 160 PSI WORKING PRESSURE
• Must be specified at time of order.

OTHER OPTIONAL FEATURES

TEMPERATURE AND PRESSURE RELIEF VALVES
• For working pressures other than standard; consult factory.

HORIZONTAL OR VERTICAL
• See specifications, most gallon capacities may be obtained in vertical or horizontal construction.

OPTIONAL INTERNATIONAL VOLTAGES
• 380 and 415 volts three-phase.

FACTORY-INSTALLED DIAL-TYPE PRESSURE GAUGE

FACTORY-INSTALLED DIAL-TYPE TEMPERATURE GAUGE

CONTROL OPTIONS

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.

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.

SAFETY DOOR INTERLOCK
• Prevents opening of control panel door when heater power supply is on. NOTE: Once door is opened heater may be energized if necessary for service diagnosis.

SHUNT TRIP CIRCUIT BREAKER
• A safety device (circuit breaker) which disconnects power to heater in the event of over-current, high temperature or low water level, breaker must be manually reset Field Installed.

SAMPLE SPECIFICATIONS
The heater(s) shall be A. O. Smith Commercial Electric Model Number ___________________ or an approved equal. Heater(s) shall be rated at _________ kW, _________ V, _________ phase, 60 cycle AC. The heater shall be for (vertical/horizontal) installation with lifting lug access and channel skid base not on every tank. 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. 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 units(s) shall be compatible with building management systems using Modbus or BACnet with factory supplied gateway.

For technical information call 800-527-1953. A. O. Smith Corporation reserves the right to make product changes or improvements without prior notice.