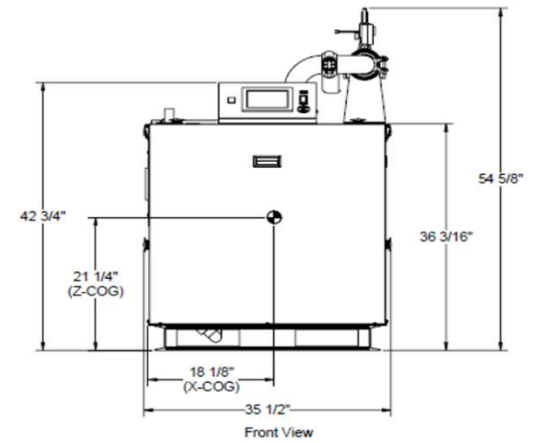
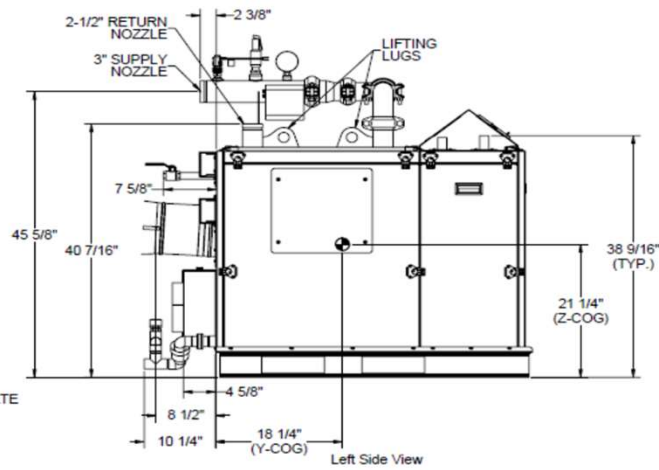
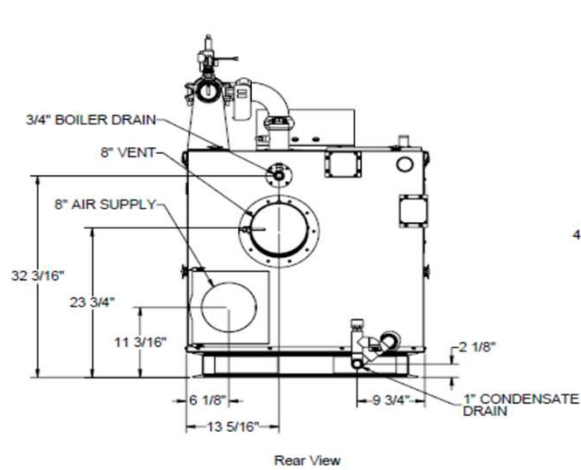
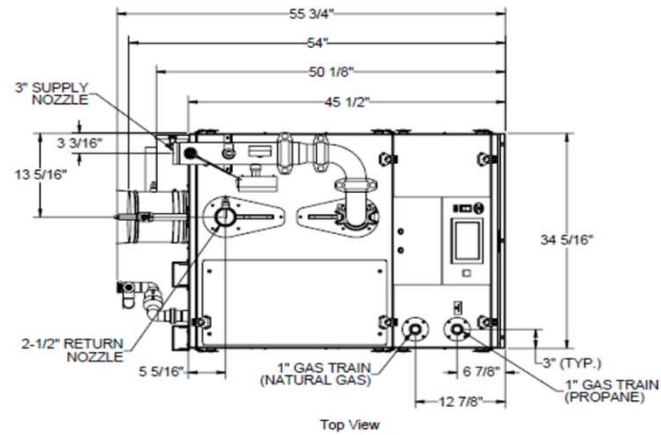


# AMP CONDENSING WATER HEATERS - SUBMITTAL DATA SHEET



|  |                                    |  |   |
|--|------------------------------------|--|---|
|  <p><b>THERMAL SOLUTIONS</b><br/>Innovative Equipment for Hot Water Systems<br/>PO BOX 3244   LANCASTER, PA 17601</p> | <p><b>AMPW-12500 Dual Fuel</b></p> | <p>INNOVATIVE EQUIPMENT FOR<br/>HOT WATER SYSTEMS<br/>WWW.THERMALSOLUTIONS.COM</p> | <p>Updated 8/8/2024<br/>AMPW1250DF-20240801</p> |
|--|------------------------------------|--|---|

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| RATINGS AND CAPACITIES  |                             |          |
|---|-----------------------------|----------|
| Input - Low fire:   | <b>250,000</b>              | BTU/HR   |
| Input - High Fire:  | <b>1,250,000</b>            | BTU/HR   |
| Output - High Fire:   | <b>1,225,000</b>            | BTU/HR   |
| DHW Recovery (40°F to 140° Rise):   | <b>1,470</b>                | GPH      |
| Thermal Efficiency:   | <b>98.0%</b>                |          |
| Heating Surface:  | <b>100.2</b>                | Sq.Ft.   |
| Water Content:  | <b>11.0</b>                 | Gallons  |
| FUEL REQUIREMENTS   |                             |          |
| Fuel:   | <b>Natural Gas / LP Gas</b> |          |
| Firing Rate:  | <b>Full Modulation</b>      |          |
| Burner Turndown:  | <b>5:1</b>                  |          |
| Low NOx Emissions:  | <b>&lt; 10 ppm</b>          |          |
| Inlet Gas Pressure (NG):  | <b>4" wc</b>                | Min.     |
| Inlet Gas Pressure (LP):  | <b>8" wc</b>                | Min.     |
|   | <b>14" wc</b>               | Max.     |
| Shipping Weight, Approximate:   | <b>922</b>                  | lbs      |
| ASME Section IV (Max 160 PSIG / 210°F)<br>Setpoint range is 60-185°F<br>Adjustable, manual reset high limit setting of ≤ 200°F.<br>ASME HLW stamp MAWT is 210°F for the vessel. (For max setpoint, see Setpoint range.) |                             |          |
| ETL Certified to ANSI Z21.10.3 / CSA 4.3<br>NSF/ANSI Standard 372   |                             |          |
| DIMENSIONS / CONNECTIONS  |                             |          |
| Height:   | <b>42-3/4"</b>              | (Note 1) |
| Width:  | <b>34-1/4"</b>              | (Note 2) |
| Length:   | <b>45-1/2"</b>              | (Note 3) |
| Supply Connection:  | <b>3" Grooved</b>           |          |
| Return Connection:  | <b>2-1/2" Grooved</b>       |          |
| Vent / Air Intake Connections:  | <b>8"</b>                   |          |
| Gas Connection:   | <b>1" NPT</b>               |          |

| FLOW REQUIREMENTS |            |              |
|-------------------|------------|--------------|
| Water Hardness    | Flow (GPM) | r P (Ft. Hd) |
| 4 - 12 gpg        | <b>66</b>  | <b>7.4</b>   |
| 12 - 15 gpg       | <b>88</b>  | <b>12.3</b>  |

| FLOWS AND PRESSURE DROPS |            |              |
|--------------------------|------------|--------------|
| Delta T                  | Flow (GPM) | Δ P (Ft. Hd) |
| 20°F Δ T                 | <b>39</b>  | <b>12.4</b>  |
| 30°F Δ T                 | <b>26</b>  | <b>6.2</b>   |

- NOTES:**
1. Height dimension is from floor to top of jacket.
  2. Length is from jacket front to jacket rear.
  3. Dimensions shown are for reference only



# AMP CONDENSING WATER HEATERS - SUBMITTAL DATA SHEET

## STANDARD EQUIPMENT

### PRESSURE VESSEL DESIGN

Stainless Steel Heat Exchanger  
 ASME Section IV Certified, "HLW" Stamp (1000 - 2000)  
 ASME Section IV Certified, "H" Stamp (2500 - 4000)  
 MAWP 160 PSIG & Max Temp 210°F  
 Setpoint range is 60-185°F  
 Adjustable, manual reset high limit setting of ≤ 200°F.  
 ASME HLW stamp MAWT is 210°F for the vessel. (For max setpoint, see Setpoint range.)  
 Five Year Limited Heat Exchanger Warranty  
 Ten Year Limited Pressure Vessel Warranty

### COMBUSTION DESIGN

Stainless Steel Pre-Mix Burner  
 Low NOx Emissions ( < 10 ppm)  
 Full Modulation, 5:1 Turndown  
 Natural Gas, Propane or Dual Fuel (Gas/Gas)  
 4" wc (8" wc Propane) to 14" wc inlet gas pressure  
 Direct Spark Ignition System with UV Scanner  
 High/Low gas pressure switches, manual reset  
 Zero governor gas valve  
 Variable Speed Combustion Blower  
 Air Proving Switch  
 Blocked Vent Switch  
 Manual fuel changeover switch (Dual Fuel Only)

### VENTING

Category II or IV Venting  
 Individual or Common (Engineered) Vent System  
 Vertical or Horizontal  
 CPVC, PP or SS Venting \*Materials Acceptable  
 Combustion Air Intake - Sealed or Room

\* Flue system material shall be capable of continuous operation at 210°F or higher and shall be certified to UL 1738 – venting system for gas-burning appliances cat II, III and IV.

### BOILER EQUIPMENT

Concert™ Control (24 Vac)  
 High Limit Temp Control, Manual Reset  
 Low water cutoff, manual reset  
 Water Flow Switch  
 Supply & Return Water Temperature Sensors  
 Flue Gas Temperature Sensor  
 Condensate trap  
 Blocked Condensate Switch  
 Pressure & Temperature Gauge  
 ASME Temperature & Pressure Safety Relief Valve, 150 psi

### ELECTRICAL DESIGN

**Models 1000-2500:**  
 - 120-208-230VAC/60HZ/1PH - High Voltage  
 (1500 to 2500 - Optional 208-230-460VAC/60HZ/3PH)  
**Models 3000:**  
 - 208-230-240VAC/60HZ/1PH - High Voltage  
 - 208-230-240-460VAC/60HZ/3PH - High Voltage  
**Models 3500-4000:**  
 - 208-230-240-460VAC/60HZ/3PH - High Voltage  
 - PCB (Printed Circuit Board) Fused Connections  
24VAC/5VDC - Low Voltage PCB  
 - EMS Communications  
 (Dual RJ45 Jacks for Peer-To-Peer or ModBus)  
 - Boiler Options (Sensors)  
 - Pumps (Boiler, DHW, System) & Auxiliary Devices

## OPTIONAL EQUIPMENT

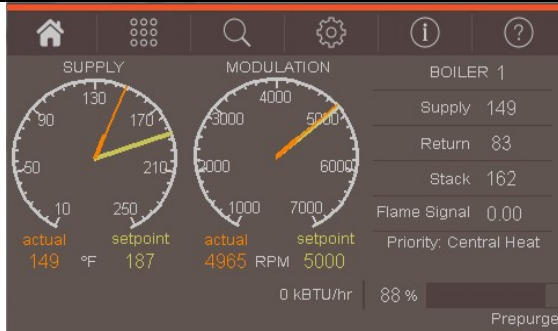
- External High Limit Temperature Control, Manual Reset
- Condensate Neutralizer
- Hot Water Header Temperature Sensor:  Direct Immersion  Well Immersion (with Well)
- EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA)
- Alarm Buzzer with Silencing Switch
- Gas Valve Proving Switch
- Vent Adapter - CPVC
- Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)
- Stackable Rack
- Conductor Sequencing Panel

The Conductor manages multiple condensing & non-condensing, small & large heat output, new and/or existing boilers (full modulation or on-off), and steam or hot water applications. It helps improve system efficiency by selecting and modulating the right boiler to match operating conditions. The Conductor offers a single point boiler plant Energy Management System (EMS) interface including Modbus TCP/IP, Modbus RTU RS485, BACnet/IP and BACnet MSTP standard. If Lonworks needed, add for the separate Lonworks gateway.

- Extended Warranty
- 3-Year Parts     
  5-Year Parts     
  10-Year Parts     
  5-Year Parts/Labor     
  10-Year Parts/Labor

# AMP CONDENSING WATER HEATERS - SUBMITTAL DATA SHEET

## CONCERT CONTROL FEATURES



### **Dashboard - Color Touchscreen Display, 4"**

- Intuitive Icon Navigation
- "Quick" Setup Menus
- \*Real Time BTU/H Display

### **Temperature Demand Inputs**

- Time of Day Setback Capability  
(Envirocom Thermostat must be installed)

### **Two (2) Pump Control**

- System Pump
- Alternative Control to Combustion
  - Air Damper or Standby Loss Damper
- Pump Overrun for Heat Dissipation
- Pump Exercise
- Pump Rotor Seizing Protection
- Pump Overrun for Heat Dissipation

### **Peer-to-Peer Boiler Communications**

- Multiple Size Boiler Sequencing Up to 8 Units
- Lead Boiler Automatic Rotation

### **Energy Management System (EMS) Interface**

- \*Firing Rate and Water Temperature Based
  - Algorithms for Multiple Boilers; loss of EMS signal defaults to local boiler settings
- 420mAdc Input/Output (010Vdc Optional Converter)
- ModBus Input/Output (BACnet or LonWorks Optional Gateway)
- Simultaneous Interface with PeertoPeer

### **USB Data Port Transfer**

- Upload Settings Between Boilers
- Download Parameters for Troubleshooting
- Import Data into .CRV Formatted Files for Performance Analysis

\* Unique to Concert



### **Energy Efficiency Enhancer**

- AntiCycling Technology
- Multiplier boiler base load common rate
- Boost Temperature & Time
- Ramp Delay
- OverTemperature Safeguarding

### **Self-Guiding Diagnostics**

- Identifies Fault
- Describes Possible Problems
- Provides Corrective Actions
- Time/Date Stamp on Alarms and Lockouts

### **Unmatched Archives**

- Historical Trends Collects Up to 4 months Data
- Event History Up to 3000 Alarms, Lockouts and Cycle & Run Times
- Alarm Limit String Faults, Holds, Lockouts and Others
- Cycle & Run Time Boilers & Pumps
- Resettable (Lockouts/Alarms/Cycles & Run Time)

### **Other Features**

- Factory Default Settings
- Three Level Password Security
- Frost Protection
- Contractor Contacts (Up to 3)
- Low Water Flow Safety Control & Indication
- Proportion Integral Derivative (PID) Parameters for DWH, Sequencer and Fan
- Built-in Brown-Out Protection