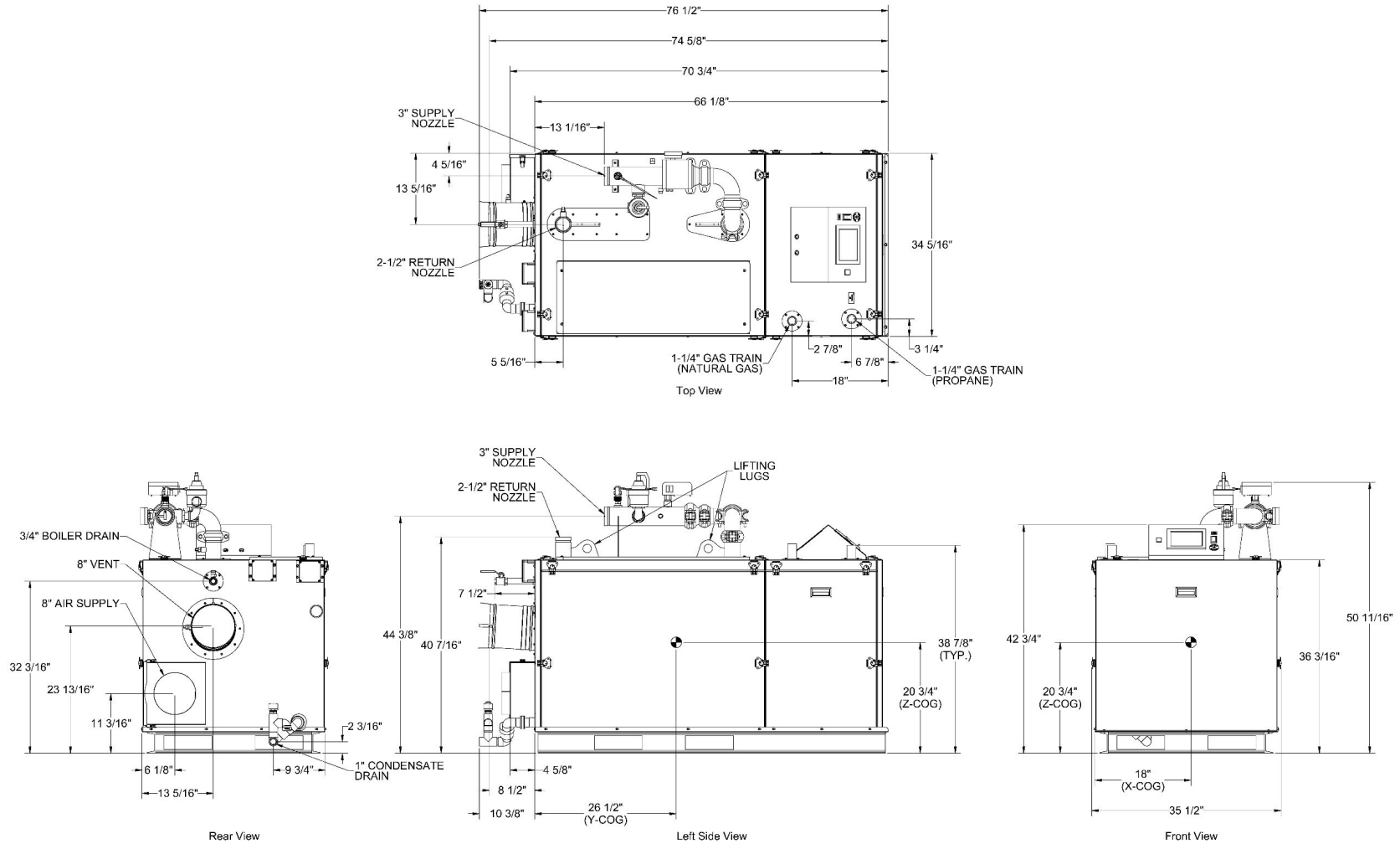




# Dual Fuel DHW SUBMITTAL DATA SHEET



PO BOX 3244 | LANCASTER, PA 17601

## AMPW-2000 DF

Dual Fuel

INNOVATIVE EQUIPMENT FOR  
HOT WATER SYSTEMS

WWW.THERMALSOLUTIONS.COM

Updated 8/20/2025

ABCPV-20250802



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## RATINGS AND CAPACITIES

|                               |                       |         |
|-------------------------------|-----------------------|---------|
| Input - Low fire:             | 399,000               | BTU/HR  |
| Input - High Fire:            | 1,999,000             | BTU/HR  |
| Output - High Fire:           | 1,939,030             | BTU/HR  |
| Boiler Horsepower:            | 57.9                  | BHP     |
| Thermal Efficiency:           | 97.0%                 |         |
| Low Fire Thermal Efficiency:  | Up to 99%             |         |
| Heating Surface:              | 153.0                 | Sq.Ft.  |
| Water Content:                | 17.2                  | Gallons |
| Fuel:                         | Natural Gas or LP Gas |         |
| Firing Rate:                  | Full Modulation       |         |
| Burner Turndown:              | 5:1                   |         |
| Low NOx Emissions:            | < 10 ppm              |         |
| Inlet Gas Pressure (NG):      | 4" wc                 | Min.    |
| Inlet Gas Pressure (LP):      | 8" wc                 | Min.    |
|                               | 14" wc                | Max.    |
| Shipping Weight, Approximate: | 1,217                 | lbs     |

ASME Section IV (Max 160 PSIG / 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.)

ETL Certified to ANSI Z21.13 / CSA 4.9

ETL Certified to UL 795 / CSA 3.1



## DIMENSIONS / CONNECTIONS

|                                       |                |          |
|---------------------------------------|----------------|----------|
| Height:                               | 42-3/4"        | (Note 1) |
| Width:                                | 34-1/4"        | (Note 2) |
| Length:                               | 66 1/8"        | (Note 3) |
| Supply Connection:                    | 2-1/2" Grooved |          |
| Return Connection:                    | 2-1/2" Grooved |          |
| Vent / Air Intake Connections:        | 8"             |          |
| Condensate / Boiler Drain Connection: | 1"             |          |
| Gas Connection:                       | 1 1/4" NPT     |          |

## FLOWS AND PRESSURE DROPS

| Delta T  | Flow (GPM) | Δ P (Ft. Hd) |
|----------|------------|--------------|
| 20°F Δ T | 194        | 19.7         |
| 30°F Δ T | 129        | 10.5         |
| 40°F Δ T | 97         | 6.7          |

## Electrical Requirements: (Appliance Only)

| Model     | Voltage | Phase | Hz | Max. Amp Draw |
|-----------|---------|-------|----|---------------|
| 1000-1250 | 120     | 1     | 60 | 11            |
|           | 208     |       |    | 7.4           |
|           | 240     |       |    | 6.5           |
| 1500-2500 | 120     | 1     | 60 | 13.5          |
|           | 208     |       |    | 8.2           |
|           | 240     |       |    | 7.7           |
|           | 208     | 3     | 60 | 11            |
|           | 240     |       |    | 9.9           |
|           | 480     |       |    | 6.4           |
| 3000      | 208     | 1     | 60 | 14.1          |
|           | 240     |       |    | 12.6          |
|           | 208     | 3     | 60 | 9.9           |
|           | 480     |       |    | 6.4           |
| 3500-4000 | 208     | 3     | 60 | 11            |
|           | 240     |       |    | 9.9           |
|           | 480     |       |    | 6.4           |

### 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
4. Refer to manual for gas supply piping charts



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## STANDARD EQUIPMENT

### PRESSURE VESSEL DESIGN

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

### COMBUSTION DESIGN

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

### 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)                 | Water Flow Switch            |
| High Limit Temp Control, Manual Reset     | Condensate trap              |
| Low water cutoff, manual reset            | Blocked Condensate Switch    |
| Supply & Return Water Temperature Sensors | Pressure & Temperature Gauge |
| AMSE 150 PSE Relief Valve Standard        | Flue Gas Temperature Sensor  |

### 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

- |                                                                                                                          |                                           |                                                     |
|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)              |                                           |                                                     |
| <input type="checkbox"/> External High Limit Temperature Control, Manual Reset                                           |                                           |                                                     |
| <input type="checkbox"/> Condensate Neutralizer                                                                          |                                           |                                                     |
| <input type="checkbox"/> Supply Header Temperature Sensor:                                                               | <input type="checkbox"/> Direct Immersion | <input type="checkbox"/> Well Immersion (with Well) |
| <input type="checkbox"/> Outdoor Air Temperature Sensor:                                                                 | <input type="checkbox"/> Wired            | <input type="checkbox"/> Wireless                   |
| <input type="checkbox"/> EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA) |                                           |                                                     |
| <input type="checkbox"/> Motorized Isolation Valves                                                                      |                                           |                                                     |
| <input type="checkbox"/> Alarm Buzzer with Silencing Switch                                                              |                                           |                                                     |
| <input type="checkbox"/> Gas Valve Proving Switch                                                                        |                                           |                                                     |
| <input type="checkbox"/> Vent Adapter - CPVC                                                                             |                                           |                                                     |
| <input type="checkbox"/> Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)                          |                                           |                                                     |
| <input type="checkbox"/> Stackable Rack                                                                                  |                                           |                                                     |
| <input type="checkbox"/> 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.

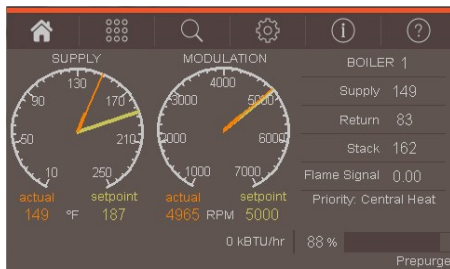
#### ☐ Extended Warranty

- |                                       |                                       |                                        |                                             |                                              |
|---------------------------------------|---------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> 3-Year Parts | <input type="checkbox"/> 5-Year Parts | <input type="checkbox"/> 10-Year Parts | <input type="checkbox"/> 5-Year Parts/Labor | <input type="checkbox"/> 10-Year Parts/Labor |
|---------------------------------------|---------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------------|



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## CONCERT CONTROL FEATURES



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

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

### **Two (2) Temperature Demand Inputs**

- Outdoor Air Reset Curve for Each Input
- Time of Day Setback Capability
- (Envirocom Thermostat must be installed)

### **Three (3) Pump Control**

- Boiler Pump With On/Off or Variable Speed Control
- Domestic Hot Water (DHW) Pump
- System Pump
- Alternative Control to Combustion
  - Air Damper or Standby Loss Damper
- Pump Overrun for Heat Dissipation
- Pump Exercise
- Pump Rotor Seizing Protection

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

- Multiple Size Boiler Sequencing Up to 8 Units
- \*Two (2) Boiler Start/Stop Trigger
- 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 Peer-to-Peer

### **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
- Outdoor Air Temperature Reset Curve
- Warm Weather Shutdown
- 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)

### **Domestic Hot Water Priority**

- DHW Tank Piped With Priority in the Boiler Loop
- DHW Tank Piped as a Zone in the System With the Pumps Controlled by the Concert Control
- DHW Modulation Limiting
- Status Screens
- Sensor Monitoring and Control

### **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 Central Heat, DWH, Sequencer and Fan