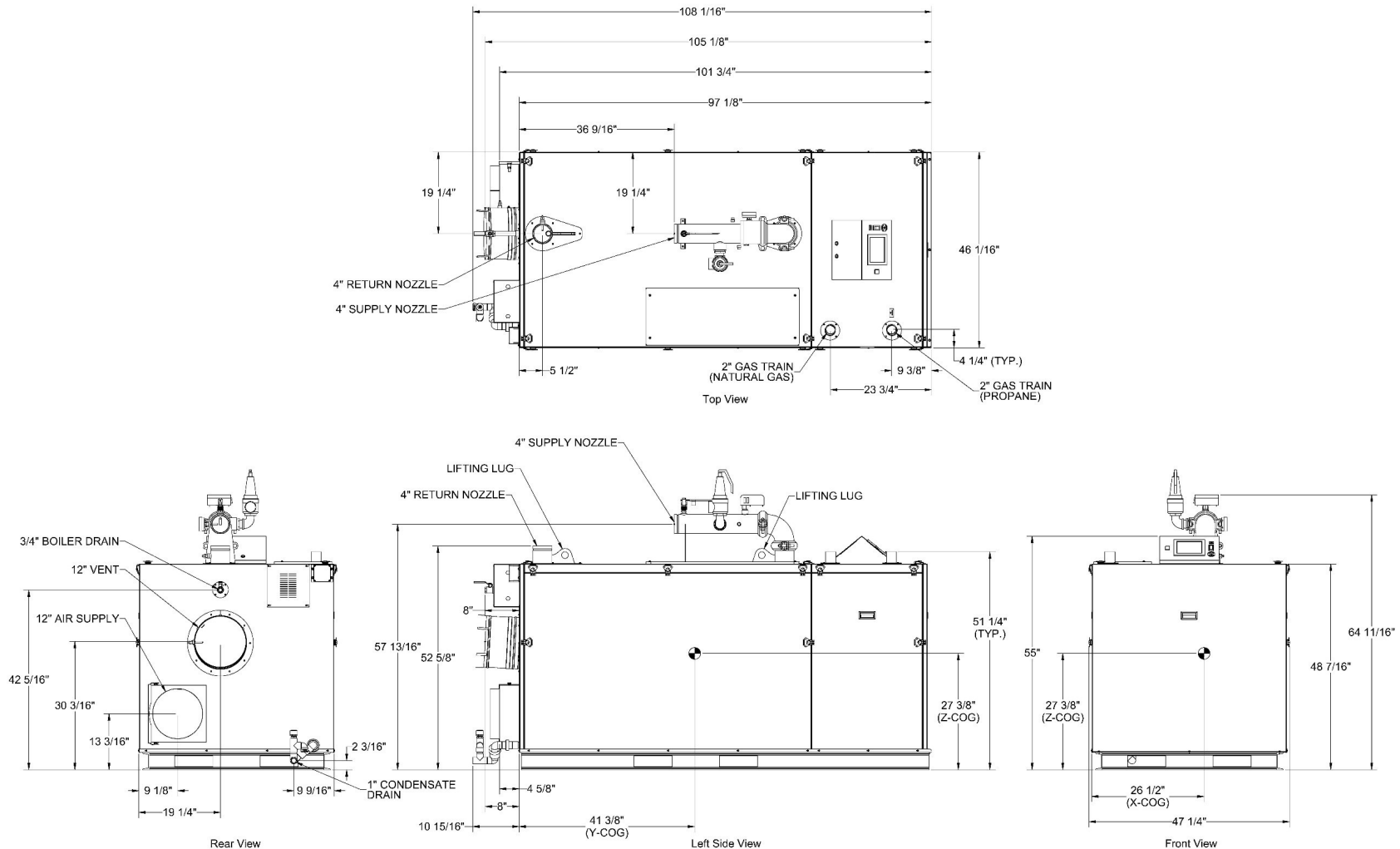




# Dual Fuel Boiler SUBMITTAL DATA SHEET



PO BOX 3244 | LANCASTER, PA 17601

## AMP-3500 DF

Dual Fuel

INNOVATIVE EQUIPMENT FOR  
HOT WATER SYSTEMS

WWW.THERMALSOLUTIONS.COM

Updated 11/25/2025

ABC-251104



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RATINGS AND CAPACITIES		
Input - Low fire:	700,000	BTU/HR
Input - High Fire:	3,500,000	BTU/HR
Output - High Fire:	3,395,000	BTU/HR
Boiler Horsepower:	101	BHP
Thermal Efficiency:	97	
Combustion Efficiency:	97	
Heating Surface:	403	Sq.Ft.
Water Vol. (gal):	47	Gallons
Fuel:	Natural Gas and / or LP	Dual Fuel
Firing Rate:	Full Modulation	
Burner Turndown:	5:1	
Low NOx Emissions:	<10 ppm	
Inlet Gas Pressure (NG):	4" (Min.) / 14" (Max.)	
Inlet Gas Pressure (LP):	8" (Min.) / 14" (Max.)	
Approx. Shipping Weight (lb):	2,485	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 H 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



FLOWS AND PRESSURE DROPS		
Delta T	Flow (GPM)	Head Loss (ft)
20°	339	14.4
30°	226	7.6
40°	170	5.2

Electrical Requirements: (Appliance Only)				
Model	Voltage	Phase	Hz	Max. Amp Draw
2000-2500	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

DIMENSIONS / CONNECTIONS		
Height:	55	(Note 1)
Width:	46	(Note 2)
Length:	97-1/8	(Note 3)
Water Outlet Pipe (FNPT):	4	
Water Inlet Pipe (MNPT):	4	
Vent Connection:	12	
Air Intake Connection:	12	
Condensate Drain (PVC):	1	
Drain Line Connection:	3/4	
Gas Inlet Connection (FPT):	2	

## 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

Blocked Vent Switch

Blocked Vent Switch

Natural Gas, Propane or Dual Fuel (Gas/Gas)

4" wc (8" wc Propane) to 14" wc inlet gas pressure

Manual fuel changeover switch (Dual Fuel Only)

4" wc (8" wc Propane) to 14" wc inlet gas pressure

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

### 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  
Flue Gas Temperature Sensor

ASME Relief Valve: (Available: 30, 50, 60, 75, 100, 125 or 150 psig)

### ELECTRICAL DESIGN

#### **Models 2000-2500:**

- 120-208-230VAC/60HZ/1PH - High Voltage  
(2000 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

\* 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.



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## OPTIONAL EQUIPMENT

- ☐ Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)
- ☐ External High Limit Temperature Control, Manual Reset
- ☐ Condensate Neutralizer
- ☐ Supply Header Temperature Sensor: ☐ Direct Immersion ☐ Well Immersion (with Well)
- ☐ Outdoor Air Temperature Sensor (Wired)
- ☐ EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA)
- ☐ Motorized Isolation Valves
- ☐ 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 ☐ Optional Isolation Relay Board

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.

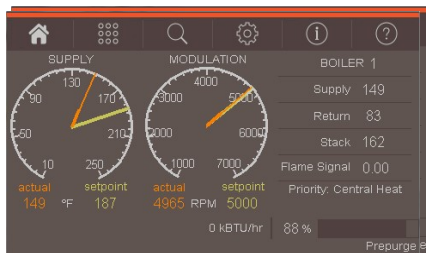
## EXTENDED WARRANTY

- ☐ 3-Year Parts      ☐ 5-Year Parts      ☐ 10-Year Parts      ☐ 5-Year Parts/Labor      ☐ 10-Year Parts/Labor



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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**

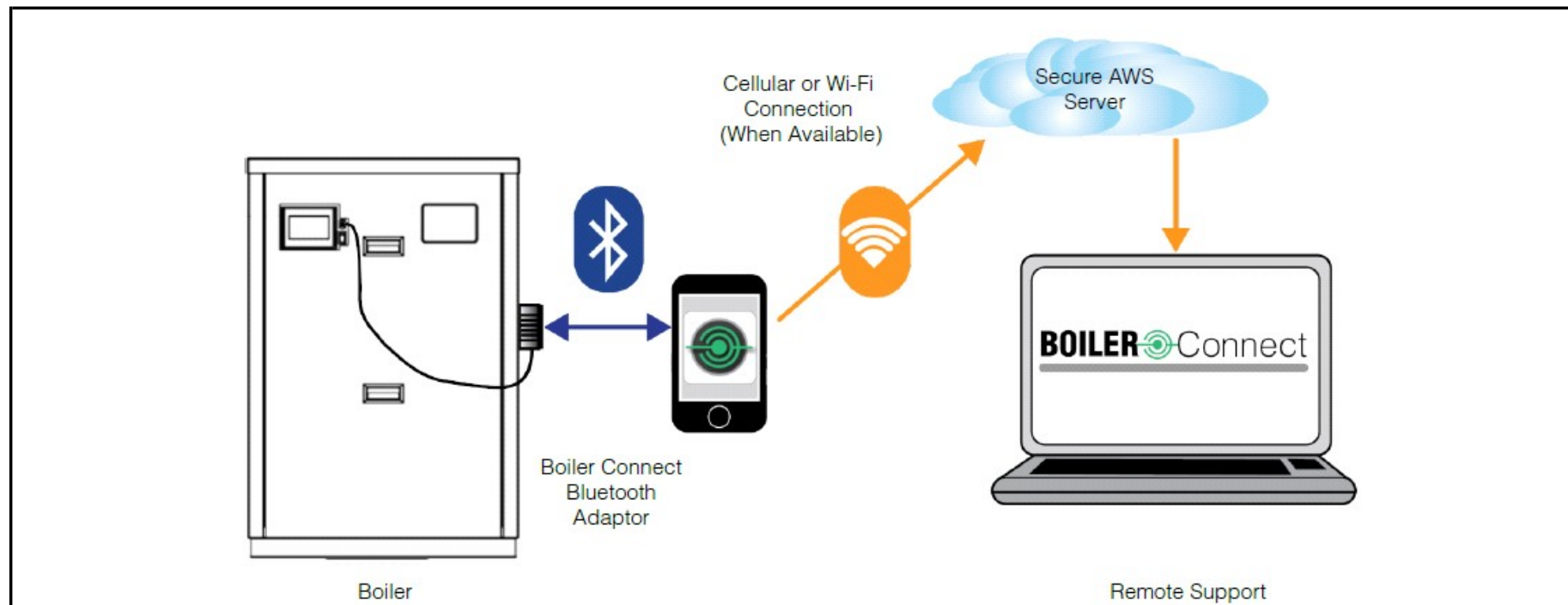
Factory Default Settings  
Three Level Password Security  
Frost Protection  
Contractor Contacts (Up to 3)  
Low Water Flow Safety Control & Identification  
Proportion Integral Derivative (PID) Parameters for  
Central Heat, DHW, Sequencer and Fan

### **Boiler Connect Compatible \***

\* Models 2000-4000 require Service Tool  
PCB14 Kit (PN#113430-01) and one (1) Boiler  
Connect Bluetooth Adapter Kit (PN#113329-  
01) per install or cascade.



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## BOILER Connect

### BOILER CONNECT FEATURES

- Bluetooth adapter connects to the Boiler Connect App
- English or Spanish language
- Start-up, Troubleshooting Tips and Service Wizards
- Data logs, Service and Status Reports sent to the cloud
- Live Data Sharing (Cellular Service Required) with Technical Service Representative